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Joint National Training Capability

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Like Pushing a Rope

Tom Slear describes the Joint National Training Capability initiative.

Joint training is much like chastity - nice in theory, tough in practice. The individual services within America's defense establishment are given money by Congress to organize, train, and equip their own forces. That's their mission, their reason for being. There's no mention of joint training.

"So in the Army the priority is Army training," says John Ballard, professor of joint military operations at the Naval War College in Newport, Rhode Island, and a reserve Marine Corps colonel. "In the Air Force, it's Air Force training. The same goes for the Navy and the Marine Corps. That's what the services have grown up doing."

Given such a mind-set, imposing joint training takes on the difficulty of pushing a rope. But there's a system in the starting gate that might make the transition easier. Called Joint National Training Capability, or JNTC, it has all of the accoutrements for success. For one, it will rely heavily on simulation. Many of the friendly forces and all of the opposing forces will exist only in a computer, thereby holding down costs and imposing minimum disruptions on the training cycles of tactical units.

Second, the system should be completely transportable when it comes to fruition near 2009. The training will come to the doorsteps of the appropriate staffs and commanders instead of the other way around.

Third, Secretary of Defense Donald Rumsfeld has made a priority of training transformation, of which JNTC is the lodestar. The message is trickling down through the chains of command. There will be no more embarrassing snafus, as there were in Grenada in 1983, when technical shortfalls inhibited tactical communications between the services to such a degree that an Army officer might as well have shouted into the wind for all the good it did him when he tried to talk over a radio to his counterparts in the Navy, Marine Corp, and Air Force.

"We had to put an Army two-star (general) on a Navy ship in order to have communications with Army forces," says retired Army General George Joulwan. "That was only 20 years ago. We are better than that as a nation and we are better than that as a military."

The situation was only marginally better eight years later, however. Despite the brilliant and grandiose ground maneuvers of Desert Storm, there was little integration among the services, particularly when it came to strategic and tactical fire support.

"Desert Storm was a coordinated, not an integrated, fight with boundaries and timing separating the forces and their actions," says Army Brig. Gen. Mark Hertling, a battalion operations officer in Desert Storm and now an assistant commander of the 1st Armored Division in Iraq.

From the beginning of his term, Rumsfeld has been emphasizing the message that the American military can no longer afford the luxury of patching together joint task forces on the way to a theater of operations, learning on the fly, literally, how to work with one another.

Joint training must become a way of life, as imbedded as morning PT and evening taps. As if on cue, along came the complex, distant operations in Afghanistan. The few doubters left were convinced that close integration of all of the services was no longer a nicety but a necessity.

Fourth, JNTC won't deplete time, a commodity as valuable to the services as fuel, ammunition, and money. Rather than imposing itself as a new, distinct requirement, which would force the services to create space in an already overcrowded training schedule, JNTC will weave itself into existing events. In the near term, regularly scheduled training exercises will go on as before, only with JNTC inserting its communication and simulation infrastructure, transforming what otherwise would have been separate Army, Air Force, Marine Corps, and Navy events into joint operations.

Fifth, and most perhaps important, JNTC has funding. Granted, the total dollar amount - \$1.3 billion through 2009 - is unimpressive, prompting critics to say that such a piddling sum will ensure only that the program gets started. Anything after that will be subjected to the political moods of Congress.

Maybe, maybe not. Dr. Paul Mayberry, deputy under secretary of defense for readiness, says JNTC won't require as much money as

Right
The USS Blueridge arrives pierside during Tandem Thrust '03. A joint military exercise including forces from the US, Canada and Australia supported by USJFCOM.

Image credit: Steve Cline/US Air Force

many people think. The services will continue to fund the underlying training. JNTC will fund only what's required to cover the gaps and seams in joint training.

For example, the Army routinely has combat units rotating through its expansive combined arms training site at Fort Irwin, California. The same is true of Marine Corps units at nearby Twentynine Palms, Air Force fighter squadrons at Nellis Air Force Base, and Navy ships based out of San Diego. JNTC will coordinate these rotations so that they occur simultaneously and with the help of a hearty communications and simulation infrastructure, separate service exercises

will take on the look and feel of joint operations. The funding will be something akin to a business conference, where their respective companies cover the lodging and travel expenses of those attending. The host pays only for the meals that bring them all together.

All of these plusses, however, do not mean that JNTC faces a paved, straight highway. When asked what JNTC will look like three or four years down the road, Army Col. Bryan Stephens, chief of staff for the Joint Warfighting Center, bluntly replies, "We don't know."

"I'm not trying to be flippant," he adds. "I'm trying to make the point that JNTC is part of the training transformation within the Department of Defense. As with all transformational processes, there is really no end-state. It's a continuum, if you will, of constant change."

JNTC is a whole lot of notion and very little structure at this point. The wish is for a globally distributed system that provides realistic training on demand. The scope of the training will be not only joint, but eventually combined (international) and interagency (law enforcement and relief agencies, for example). The play of the exercises might be entirely virtual, or a mix of virtual, live and constructive. The needs of the combatant commander will determine what's delivered and, best yet, it will be delivered to the participants' doorsteps or, more precisely, their desktops. The players won't have to gather in one spot.

The guiding vision, says Mayberry, is for joint training to be so ubiquitous that "no individual, no unit, and no staff will ever deploy into combat without first experiencing the complexity and the stress of their joint responsibilities in a realistic and robust training environment."

That's a tall order and the Joint Warfighting Center, which, as part of Joint Forces Command in Norfolk, Virginia, has the lead for JNTC, has wisely decided to take small steps. The plan entails four thrusts. Thrust one will come to life this January in the western United States and will focus on service-to-service integration at the tactical level. Participants will include units from each of the four services

"The changes enabled by new networking and information technology take the potential of joint operations to a dramatically new and unprecedented level. This is more than a mechanical change. It requires a change in the way we think and the way we organize. It is properly described as a cultural change. If we're going to depend on one another in wartime, then we must forge the bonds of trust in peacetime. That means that our training has to become increasingly joint as well." - Deputy Secretary of Defense Paul Wolfowitz, speaking to the graduating members of the Naval War College, June 20, 2003.

JNTC initiative

Some key industry participants and potential participants in the JNTC initiative are:

American Systems Corporation (ASC)

www.2asc.com

ASC is poised to provide innovative, customer focused, support to the T2 and JNTC initiatives. The company has 20+ years experience as a premier provider of trainers, training systems and training services to provide state-of-the-art technology to integrate the L.V.C. environments in support of the nation's warfighters.

at what has become known as the western range: Fort Irwin, Nellis Air Force Base, Twentynine Palms, and San Diego. The goal will be to link electronically the four sites for the purpose of creating one large, joint training event. Each of the units at the training centers will have objectives determined by the individual services. JNTC will attempt to link the sensors to show that despite the various locations, one battle can be created electronically for the purpose of joint training.

"That's what we call the horizontal piece – tying together at the tactical level, injecting jointness at the lowest appropriate level," says Stephens. "Thrust two is the vertical piece, where the (joint) headquarters becomes the training audience, and thrust three is where we tie thrust one and two together in the same exercise."

Thrust two and three events will take place in June and September in the eastern United States. JNTC's challenge will be to link all of the headquarters involved so that a common

Anteon www.anteon.com

Anteon supports emerging JNTC requirements including: Battle Simulation Center Operations for TRADOC and FORSCOM units; ARNG's Distributed Battle Simulations Program, expertise that links Live-Virtual-Constructive simulations; Digital Multi-purpose ranges and USAF range support; Digital Battle Staff Training; Fixed Tactical Internet; and fixed and mobile MOUT capabilities to support deployed warfighters.

Booz Allen Hamilton www.bah.com

Booz Allen Hamilton, headquartered in McLean, VA, delivers Systems Engineering & Integration, Modeling & Simulation, and Advanced Distributed Learning services to the Combatant Commands, Services, Missile Defense Agency, and international clients.

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CACI www.caci.com

CACI is actively supporting the development and integration of Virtual and Constructive components for the JNTC Thrust 1 event, which focuses on horizontal interoperability of Live, Virtual, and Constructive components. JQUAD, CACI's legacy C2W, IW, and Joint Information Operations Center (JIIC), will be one of the core constructive simulation suites integrated into the JNTC via the HLA RTI. In addition, CACI's Mission Avionics System Trainer for the EP-3, developed for NAVAIR and winner of the 2002 DMSO Training Award, is one of only a handful of Virtual players participating. This dual representation continues CACI's legacy of leading edge simulation technology.

picture of the battlefield emerges. Though some units will be live, the vast majority will be virtual. The main purpose will be to give all elements involved a rigorous command and control workout within a joint environment. If all goes well, JNTC will achieve initial operating capability by October, which Stephens defines as the ability to conduct thrust one, two and three events anywhere in the continental United States.

If so, what will the services gain?

An inescapable look at joint capabilities and fallibilities, Stephens says. A problem that continues to plague the services – and showed itself during operations in Iraq – is the incompatibility of the combat identification and ground vehicle tracking systems, particularly between the Army and the Air Force, which lead to friendly fire casualties. With JNTC seeping into every seam, the services won't have any cover for a problem such as this. The hope is that they will be forced to address it instead of waiting

CAE www.cae.com

CAE, a global provider of integrated training solutions and advanced simulation equipment, is initially providing a UH-60L Black Hawk Battlestaff Training System for the JNTC Thrust 1 exercise. The UH-60L BaTS is a virtual command and control asset. CAE is also positioned to draw upon its command and staff training solutions to provide coalition and multinational experience.

Computer Sciences Corporation (CSC)

www.csc.com

Computer Sciences Corporation (CSC) is assisting the Department of Defense in implementing Training Transformation with a wide range of training capabilities. Our Training Center of Excellence (TCE) enables the force to learn, improvise, and adapt to changing

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for the unforgiving test of combat. The same can be said for standard operating procedures of the ground forces in the Army and the Marine Corps. If they aren't in harmony, JNTC will highlight what needs to change.

JNTC will pool the modeling and simulation assets of each of the services in addition to injecting some of its own. The total, Stephens feels, will be better than the sum of the parts.

"We are not trying to invent new modeling and simulation," he says. "We are certainly open to suggestions and we will continue to work with engineers to ensure we keep enhancements there. But right now we're trying to take as much off the shelf as we can, the best that's there, leverage it, and get this thing started."

Thrust four of JNTC is an ongoing study to determine what joint training is needed and whether additional sites should be built. One of the more salient subjects being looked into is urban combat and whether a MOUT (military operations in urban terrain) facility is needed where all four services could train.

As JNTC evolves, the joint will morph into coalition and interagency. If joint operations present a wide gap to leap in terms of cultures, procedures and equipment, then working with the services of other countries and non-military agencies presents a gap that spans the horizon. When Gen. Joulwan commanded Southern Command in the early 1990s, he worked with the militaries of half a dozen countries as well as the Central Intelligence Agency, the U.S. Coast Guard, the Drug Enforcement Agency, and the Customs Service in America's undeclared drug war.

"How do you put this all together so that everyone is complementing one another instead of competing," says Joulwan, who, as NATO commander a few years later, led the 33-nation force that went into Bosnia. "You do it by training so it's not a shock when you get to Iraq and Marines are on your right and the British are on your left and you're working with many different agencies in the stabilization process."

"We have joint and interagency people walking in and out of our headquarters like I have never seen before," says Hertling of his recent experiences in Iraq. "Now we have to ensure the training grounds and the schoolhouses catch up with the field in the way we continue to prepare the next generation of leaders and military service members." **MS**

threats in combination to execute doctrine to standards.

Cubic Corporation www.cubic.com

As a member of the Joint Warfighting Center Support Team, Cubic Defense Applications is providing strategic planning, operational support and technical expertise to the US Joint Forces Command in creating the JNTC. Cubic is helping to integrate physical assets, systems and processes to support realistic live, virtual and constructive training for air, land and sea forces, and is involved in planning JNTC FY04 training events.

IDT-Metric Systems www.metricsys.com

As the major subcontractor to Cubic Defense Applications for P5 CTS, IDT Metric will provide three different Participant Subsystems (PS) for airborne data collection and real-time data transmission which consists of Airborne (pod), Internal, and Rack Mounted Subsystems. The P5 CTS is expected to provide the air portion of the overall JNTC implementation.

ITT Advanced Engineering & Sciences www.aes.itt.com

The Advanced Engineering and Sciences (AES) division of ITT industries has over ten years of experience in the US DoD's distributed simulation community. The majority of this expertise is in the Weapons of Mass Destruction domain. Areas of expertise that relate to JNTC objectives include: development of training systems, virtual testing and prototyping, development of M&S standards, and the development of tactics, techniques and procedures.

Northrop Grumman Mission Systems www.ms.northropgrumman.com

Northrop Grumman Mission Systems is the lead General Support contractor for DoD's Joint National Training Capability initiative. The JNTC initiative is being implemented at USJFCOM's Joint Warfare Center in Suffolk, VA. NGMS integrates live forces, virtual forces, and constructive forces in the planning, design execution, and assessment of complex JNTC events. This complex integration creates a realistic training environment where joint tasks are performed, performance is measured, and future joint capabilities are developed.

training TRAINING TRANSFORMATION

Naval Aviation... on way beyond fast

The Navy Aviation Simulation Master Plan (NASMP) will bridge the gap from current investments to the Joint National Training Capability (JNTC). CAPT Fred Flight, USN (CNO N789B) and CAPT Larry Howard, USN (NAVAIR PMA 205) explain the plan.

J During the late 1990s, Navy Aviation was faced with a readiness challenge during the Inter-Deployment Training Cycle (IDTC). Navy squadrons found their readiness levels dropped off dramatically upon

return from deployment as large numbers of personnel, aircraft, weapons and parts were turned over. As the IDTC progressed, squadron readiness would eventually build up to required levels for deployment. Unfortunately, both the magnitude

of the dip in readiness and the associated recovery back to desired levels just prior to deployment (both the depth of the readiness curve and the steepness of the recovery slope) became more pronounced with every subsequent IDTC. The Fleet Aircrew Simulator Training (FAST) Plan was developed to address this readiness "bathtub" through the use of networked, tactically relevant simulation. The plan involves building new simulators or upgrading existing simulators where sufficient tactical fidelity and capacity existed. An integral feature of FAST is the introduction of common software solutions for threat environment, sensors, weather, weapons, and visual databases. It also includes the establishment of standards and protocols necessary for networking of geographically dispersed simulation and enabling fair fight simulation. The Navy Aviation Simulation Master Plan (NASMP) is focused on evolving the necessary set of networking standards and protocols that will make the sharing of databases possible. Further, these improved tactical simulators will be networked into federations (e.g. Strike Federation; Hornets, Hawkeyes and Prowlers) enabling the users to train the way they fight.

The Chief of Naval Operations vision "Sea Power 21" provides the framework on how the Navy will align, integrate and transform. At the heart of this strategy are the three foundational pillars of Sea Strike, Sea Shield, and Sea Basing along with the enabler known as "FORCEnet."

Left
Navy squadrons found their readiness levels dropped off dramatically upon return from deployment. Image credit: J R Bishop/US Navy



"When does simulation become reality?"

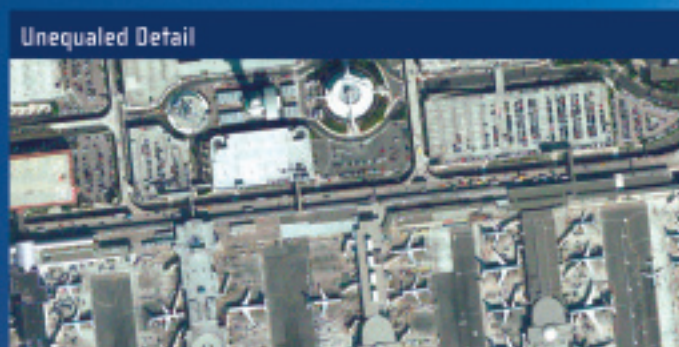
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FORCEnet is an overarching effort to integrate warriors, sensors, networks, and command and control into a fully netted combat force. This sensor/shooter communication capability allows new weapons to achieve effects well inside an enemy decision cycle. An important objective of this capability is to create chaos and rapid enemy capitulation as seen in Operations Enduring Freedom (OEF) and Iraqi Freedom (OIF). This marriage of networked combat information and communications capabilities is a key component of the FORCEnet enabler to Sea Power 21. Through FAST, Navy aircrews will be able to train in a FORCEnet type of environment.

Commander Naval Air Forces (CNAF), responsible for providing trained and ready forces to the combatant commanders, established a new training and readiness (T&R) matrix doctrine that recognized the "art of the possible" with respect to simulation. The new T&R matrix presented a revolutionary concept in determining the proper balance of airborne and simulated combat skills training and quantified the amount of credit awarded in a simulator. As a result of the potential unit readiness improvements available through simulation, Navy leadership is investing significant resources in the FAST program throughout the Future Years Defense Plan (FYDP).

In order to create a more responsive and agile naval force consistent with Office of the Secretary of Defense' (OSD) transformational initiatives the Fleet Response Plan (FRP) has been adopted. This initiative will yield a much more adaptive deployment posture and provide the ability to surge significantly more naval forces to Joint Commanders by using a compressed IDTC build-up cycle. Another important initiative is TACAIR integration whereby carrier based and expeditionary strike fighter requirements are shared between Navy and Marine Corps F/A-18 Hornets. To achieve this all Hornet squadrons will have to maintain a more level readiness posture similar to Marine Squadrons during their IDTCs. These initiatives validate the FAST program; the providing of high fidelity, tactically relevant fleet simulators to maintain readiness.

In July 2003, Deputy Under Secretary of Defense for Readiness, Dr. Paul Mayberry, in his address to the National Training Systems Association (NTSA), presented a case to military and industry leaders that the existing training regimen for the Department of Defense (DOD) is inadequate. Dr. Mayberry indicated that to support the current and future national military strategy a Joint National Training Capability (JNTC) is



Above
Capt Larry Howard, USN (NAVAIR PMA 205).
Image credit: US Navy

“Current readiness must be maintained at historically high levels, with shorter periods of time to learn...”

required. Specifically, he made the case that our troops first exposure to Joint or Coalition operations should not be when engaging the enemy - a limitation experienced in both OEF, and OIF.

Recent operations have proven once again that "Team Training" is the heart of all successful military operations. Naval aviation at the Carrier Air Wing and Carrier Battle Group level is based on coordinated operations; consequently, this team training is nothing new. Advances in modeling and simulation technologies and high speed networking make FAST possible. It allows the Navy to replicate the speed of combat information distribution, extreme rapid-fire effects, real time targeting and immediate battle damage assessment; all in a simulated environment. The FAST program will enable aviators to practice and rehearse the complexities of modern warfare.

Initial operational capability of a JNTC is envisioned by October 2004. It is fortuitous that the initial increment of the FAST Program, a four ship F/A-18C Distributed Mission Training (DMT) system is scheduled to be delivered in June of 2004 with war fighting

upgrades in October 2004. Other Strike Federation components will sequentially follow over the next few years so that by the end of 2006, Navy horizontal (F/A-18E/F, E-2C, EA-6B, and EP-3) and vertical (CVBG staff) training events can occur. A by-product of the FAST program will be the ability of Naval Forces to train within Joint horizontal (other Service Strike/Strike Support platforms) and vertical (Joint Force Headquarters) training scenarios. At the individual training level, the simulation events will be scheduled to achieve unit level T&R credit during scenario execution. Staff training benefits derived from planning, observing, and reacting to simulated wartime scenarios will be transparent to the aircrews except for those realistic, real time "Force Net" tracks and tasking introduced during the sortie. This new complex coordinated training capability will achieve Dr. Mayberry's vision of fully integrating war-fighting tasks... before they are experienced in actual combat. In parallel, a refined Concept of Operations (CONOPS) that marries the functional and technical aspects of networked simulation is in work and includes interoperability opportunities with Marine Air, Navy Surface Warfare, and USAF combat training systems.

As a testimonial to the vision of those leaders who directed increased simulation investments in the recent past, unfiltered feedback from combat aircrews and Joint staff planners participating in OIF validates the initiative of adding war fighting simulations to the Service training mix. Current readiness must be maintained at historically high levels, with shorter periods of time to learn Joint procedures and sophisticated inter-team skills. JNTC will fulfill this requirement, providing an adequate and cost effective alternative to increases in training exercises. The NASMP will exploit JNTC opportunities to assure that the desired readiness end-state is available to balance live and simulated combat experiences. Similarly, the Services can expect that Combatant Commander staffs using the JNTC will make the most of the Services individual and group combat training capabilities to benefit the military readiness of the United States.

The capability for individual aircrews to be combat ready, sooner, was an objective of the FAST plan investments. As an added benefit, the integration of simulations through the NASMP provides the transformational opportunity for both horizontal and vertical training for Navy and Joint Service organizations. **MST**

SPACE IMAGE