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14. ABSTRACT Since the Defense Reorganization Act of 1986, the military has endeavored to become more integrated and better able to perform joint operations. The United States Joint Forces Command (JFCOM) was established to lead DoD's transformation efforts. Experimentation and assessment are necessary steps in the development and acquisition of new hardware, software, procedures, and doctrine. Field experiments provide the opportunity to perform these functions in an operational environment. Senior DoD leadership directed that joint training, experimentation, and assessment activities be performed simultaneously in order to take advantage of potential efficiencies. The planning, execution, and analysis of several combined venues to date has revealed that many compromises were necessary, many conflicts occurred, and stakeholders' objectives were not met. Several studies have been undertaken documenting the different requirements and methodologies of training, experimentation, and assessment. The Director, Operational Test and Evaluation, has produced a strategic roadmap to improve the acquisition community's integration into combined venues. While this document provides recommendations that will benefit all stakeholders, it is biased toward improving experimentation and assessments. It is incumbent upon military leadership to produce an equivalent strategic plan that addresses commanders' training priorities. This paper highlights several shortcomings of current doctrine and execution of combined venues and provides recommendations to improve the effectiveness of joint training.					
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JOINT TRAINING, EXPERIMENTATION, AND ASSESSMENT:
CONFLICT, COMPROMISE, AND CULTURE

by

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

Signature: _____

16 May 2006

Abstract

Since the Defense Reorganization Act of 1986, the military has endeavored to become more integrated and better able to perform joint operations. The United States Joint Forces Command (JFCOM) was established to lead DoD's transformation efforts. Experimentation and assessment are necessary steps in the development and acquisition of new hardware, software, procedures, and doctrine. Field experiments provide the opportunity to perform these functions in an operational environment. Senior DoD leadership directed that joint training, experimentation, and assessment activities be performed simultaneously in order to take advantage of potential efficiencies. The planning, execution, and analysis of several combined venues to date has revealed that many compromises were necessary, many conflicts occurred, and stakeholders' objectives were not met. Several studies have been undertaken documenting the different requirements and methodologies of training, experimentation, and assessment. The Director, Operational Test and Evaluation, has produced a strategic roadmap to improve the acquisition community's integration into combined venues. While this document provides recommendations that will benefit all stakeholders, it is biased toward improving experimentation and assessments. It is incumbent upon military leadership to produce an equivalent strategic plan that addresses commanders' training priorities. This paper highlights several shortcomings of current doctrine and execution of combined venues and provides recommendations to improve the effectiveness of joint training.

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INTRODUCTION

Current policy and practice combine experimentation and assessment activities with service/joint training events such as Roving Sands, Red Flag and Joint Task Force Exercises. Many arguments have been made of the merits of combining training, experimentation, and assessment activities. However, efforts to date have failed to prove that the potential efficiencies are worth the required compromises. ***Current doctrine, guidance, and culture are inadequate to fully realize the potential efficiencies expected by combining joint training, experimentation, and assessment.***

The inadequacies of combined venues have resulted in shortcomings in many areas of execution and objectives accomplishment. If not resolved, these shortcomings will have potentially profound effects on the Combatant Commander in terms of force readiness issues, training, and assessments of equipment and procedures. Without the ability to test, experiment, and collect valid data in realistic environments, Department of Defense (DoD) experimentation and acquisition programs will have to find other venues to perform accurate assessments. Based on current doctrine and practices, and the results of efforts to date, the decision to combine joint training, experimentation, and assessments requires further study and guidance.

Current doctrine directs the incorporation of training, experimentation, testing, assessment, tactics, techniques, and procedures (TTP) development, and feedback into joint training events. Within each of these major areas are sub-areas -- service training vs. joint training; training vs. experimentation; doctrinal adherence vs. doctrinal development; training feedback vs. analytical feedback; and force readiness assessment vs. venue assessment vs. measures of effectiveness/performance assessment. While execution of these

sub-areas employs similar environments, methodologies many times are contradictory creating conflicts and requiring compromise. For the purpose of this paper, these efforts will be considered under three general headings; *training* (to include both service and joint), *experimentation* (to include both equipment and doctrine, and testing efforts), and *assessment* (to include participant readiness, joint task viability, measures, and feedback). Other efforts such a modeling and simulation (M&S) and the Joint National Training Capability (JNTC) are being incorporated into training events to support all these efforts. The political visibility of M&S and JNTC development add additional and significant impacts to exercise planning and execution.

The concept of *transformation* has an overarching influence on all aspects of training, experimentation, and assessment, as well as culture. Like any large, bureaucratic organization, the military can not change its culture as quickly as it can change doctrine. An examination of current doctrine, guidance, and directed studies of experimentation reveal existing shortcomings that will require further attention to fully realize the efficiencies of combined venues while maintaining effective training.

THE EVOLUTION OF JOINT TRAINING, EXPERIMENTATION, AND TRANSFORMATION

One of the first efforts at joint cooperation by the military occurred during the planning for World War II. U.S. civilian and military leadership realized the potential of joint military efforts while negotiating and planning with British joint military leadership. However, it was not until the Defense Reorganization Act (DRA) of 1946 (Goldwater-Nichols legislation) that the military began any serious effort to integrate. The DRA shifted

several military authorities and responsibilities from the Service Chiefs to the Regional Combatant Commanders. In addition, the DRA mandated that the military develop the capability to work jointly. The U.S. Atlantic Command (USACOM) was established in 1993 as the “Joint Force Integrator” responsible for joint training.¹

Under the new Unified Command Plan (UCP), Atlantic Command assumed combatant command of the service component commands; the Army's Forces Command (FORSCOM), the Air Force's Air Combat Command (ACC), the Marine Corps' Forces Command Atlantic (MARFORLANT), and the Navy's U.S. Atlantic Fleet (later designated Fleet Forces Command (FLTFORCOM)). In October 1999, the name of Atlantic Command changed to United States Joint Forces Command to emphasize the command's role leading transformation of U.S. military forces. Joint Forces Command (JFCOM) gained a functional mandate to lead transformation of U.S. military joint warfighting into the 21st Century.²

Since 1986, the services made some effort to work more jointly. However, due to the structural inertia of evolving joint systems and cultural change, early joint operations reflected planning and operations aimed at deconfliction vice integration. The Office of the Secretary of Defense's (OSD) introduction of the concept of transformation and JFCOM's efforts to fulfill its new mandate reinvigorated the services' efforts to operate in a joint environment.

Experimentation and assessment are necessary steps in the development and acquisition of new hardware, software, procedures, and doctrine. Field experiments provide the opportunity to perform these functions in an operational environment. Establishing the appropriate operational environment is time-consuming, manpower intensive, and expensive. The environment required for experimentation and assessment has many similarities to that

required for joint training. To achieve efficiencies in time, manpower, and funding, an obvious choice is to perform training, experimentation, and assessment during the same event. Senior defense leadership agrees with this philosophy and is a strong proponent for this option. In the 2001 *Quadrennial Defense Review*, DoD leadership identified the four pillars of transformation. Three of the four directly impacted joint training exercises:

- Strengthening joint operations through standing joint task force headquarters, improved joint command and control, *joint training*, and an expanded joint forces presence policy.
- *Experimenting* with new approaches to warfare, operational concepts and capabilities, and organizational constructs such as standing joint forces *through wargaming, simulations and field exercises* focused on emerging challenges and opportunities.
- *Developing transformational capabilities* through increased and wide-ranging science and technology, selective increases in procurement, and *innovations in DoD processes* (emphasis added).³

As the transformation leader, JFCOM began to aggressively implement DoD joint and transformation guidance. In response to the 2001 National Defense Authorization Act, JFCOM rushed to conduct Millennium Challenge (MC) '02 in mid-2002. MC '02 was the largest and most complicated event hosted by JFCOM up to that time. This venue brought together many different experiments in a joint environment. Although this venture was met with some criticism, JFCOM believed that it was on the right track in developing venues that could accomplish all of DoD's transformation objectives.

CURRENT PRACTICES

JFCOM has leveraged several different training and experimentation venues increasing their scope in an attempt to develop the appropriate mix of training, experimentation, and assessment. Tremendous levels of effort and funding have gone into the planning, execution and analysis of such ventures. To prevent adding more exercises to

the already strained operational tempo (OPTEMPO) of military units, JFCOM developed the concept of integrating into the service exercises of its component commands: FORSCOM's Roving Sands, USFLTFORCOM's Joint Task Force Exercise (JTFEX), and ACC's Red Flag. Previous to this venture, each of the services had been increasing the jointness of these exercises, but their primary focus was still on fulfilling each commander's specific training requirements. From 2003 to 2005, JFCOM sponsored expanded versions of these training exercises executed by their respective combatant commands.

CONFLICTS

Under Title 10 and joint doctrine, the services, combatant commanders, JFCOM, and the Joint Staff have shared responsibilities in the realm of training. In addition to equipping and training their forces, the combatant commanders are responsible for assessing the readiness levels of their forces.⁴ JFCOM is the lead agent responsible to the Chairman Joint Chiefs of Staff (CJCS) for joint force training. Shared responsibilities and self-assessment requirements present potential conflicts during the planning, execution, and feedback of joint training venues. Additionally, some training venues are considered to be one of the final preparatory phases for deploying forces. Real-world contingencies will sometimes require participating forces to leave an exercise early or to not even be available. When this occurs, senior leadership has to reprioritize objectives to support real-world commitments. *Current doctrine and the incorporation of JFCOM objectives into service-specific training venues create conflicts in leadership, priorities, execution, and assessment.*

Although training, experimentation, and assessment events have many similar components and requirements, satisfaction of the objectives of each requires different

execution methodologies. However, in its *Testing in a Joint Environment Roadmap*:

Strategic Planning Guidance Fiscal Years 2006-2011-- Final Report, the DoD stated:

The event planning and execution process for systems engineering, testing, training, and experimentation events have much in common, and the venues where testing, training, and experimentation events in the joint context are conducted are virtually identical.... Creating separate joint venues and joint mission infrastructures for systems engineering, T&E, training, and experimentation is not effective, efficient, or affordable.⁵

This guidance from DoD and JFCOM's overwhelming emphasis on transformation are having both beneficial and detrimental effects on joint training capabilities.

In most training scenarios, conditions are established to ensure interactions take place so participants can practice certain procedures and techniques. Depending upon the exercise construct, resources, and size of the training audience, forces may only practice their procedures until they demonstrate the desired proficiency. Usually, the forces have many tasks they must practice and demonstrate and therefore do not have the opportunity to perform numerous repetitions of the same task. During execution, the pace of the exercise (including the number of repetitions) is based on the participants meeting minimum standards. While this exercise construct satisfies the exercise Joint Force Commander (JFC) or combatant commander's objectives, it may not (and in most cases does not) satisfy experimental or assessment criteria.

Experimental and assessment data must be credible. Depending upon the degree of statistical significance needed for analysis, credibility requires making enough observations to provide meaningful results. As mentioned, exercises rarely have enough time to perform the amount of repetitions desired by experimentations and assessments. Additionally, execution management decisions are made to account for weather, real-world commitments, range limitations, safety, *etc.* These decisions are made by the exercise JFC or component

commander and are usually based on meeting his objectives; hence, when necessary, training requirements will take precedence over experiments or assessments. *Task repetition requirements between training, experiments, and assessments are usually different and are affected by priority objective achievement of the other venues.*

Appropriate feedback mechanisms must be used to achieve the greatest benefit from training, experimentation, or assessment. Exercise operations must be observed and recorded in order to provide the data necessary for feedback. However, training, experimentation, and assessment all have different requirements and purposes for feedback. Consequently, feedback data vary according to timeliness, accuracy, precision, and completeness. Training feedback should be timely, accurate, and promote improved performance. Experimentation and assessment feedback is usually more time-consuming to ensure accurate analysis and is not necessarily concerned with improving participant performance. Many training exercises, especially those that operate on 24-hour cycles, are not able to provide sufficient time or the appropriate participants for lengthy feedback sessions. *Current mixed venues do not allow for sufficient feedback to support training, experimentation and assessment.*

The instrumentation and infrastructure necessary for collecting feedback data is expensive and requires extensive planning. It also requires use of full system capabilities and comprehensive threat representation. In most cases, the level of instrumentation required for experimentation and assessment exceeds that required for training. The DoD Command and Control Research Program describes some of the basic principles of experimentation: “Ideal experimentation involves *valid, reliable, precise, and credible* measurement of all variables.”⁶ Interestingly, training feedback benefits significantly when it uses the increased instrumentation precision and fidelity required for experimentation and assessment.

Participants in past experimentation and assessment exercises frequently commented that those venues provided some of the best joint training they had ever received.⁷ The increased precision of instrumentation was just one aspect that contributed to the increased level of training received. *Support for instrumentation and data collection varies among the different venue types.*

Another significant conflict in venue priorities is the amount of leeway participants have in following established doctrine and TTP. Usually, the purpose of training is to learn current doctrine and TTP. Therefore, fairly strict adherence is necessary and is a criterion for success. Experimentation many times involves using new or developmental doctrine and TTP. The JFCOM glossary defines Joint Experimentation (JE) as the “application of scientific experimentation procedures to assess the effectiveness of *proposed (hypothesized)* joint warfighting concept elements” (emphasis added).⁸ CJCS defines experiments as “an iterative process of *collecting developing and exploring concepts...*” (emphasis added).⁹ CJCS Instruction 3180.1 states that JFCOM will conduct JE to “explore, demonstrate, and evaluate joint warfighting concepts (*to include breakthrough joint concept development*)” (emphasis added).¹⁰ Assessment efforts can involve a combination of both adherence and variation to doctrine and TTP. *The mixture of the use of current and/or developmental doctrine and TTP can affect objective accomplishment among the various venue types, as well as add confusion among the participants and observers.*

Service training can be considered “undergraduate-level” training while joint training can be considered “graduate-level” training. Due to increasing OPTEMPO, the services must sometimes use joint training events as an opportunity to train to basic undergraduate-level service capabilities. Using forces that are minimally proficient in service-specific skills has a

degrading affect on the graduate-level joint training environment as well as affecting experimentation and assessment. As stated in *The Role of Experimentation in Building Future Naval Forces*, "...proficient Service core capabilities are a prerequisite for joint warfighting."¹¹ Additionally, "... perhaps more DOD experiments have failed to achieve their goals because of inadequately trained subjects than for any other single cause."¹²

RESULTS OF RECENT COMBINED VENUES

Although official statements reflect very positive results of recent mixed venue events, post-exercise documentation has painted a different picture. Each of the conflicts mentioned in the previous section have been present in one or more of the following recent combined events.

MC '02 was criticized as being too scripted and did not adequately assess the JFCOM concepts of rapid decisive operations, effects-based operations, or operational net assessment.¹³ After many months of planning and preparation, Roving Sands 03 was severely downgraded from a live-virtual-constructive (LVC) event to a simulated only event due to troop deployments. Combined JTFEX (CJTFEX) 04-2 was cited as not being capable of producing sufficient data to meet some of its exercise objectives due in part to exercise construct and limitations, and the participants' ability to fulfill event objectives.¹⁴ Part of the reason for the lack of data collection was, again, the response to real world commitments resulting in an early departure of the participating carrier strike group (CSG). Joint Red Flag 05 also had several issues that affected training, experimentation, and assessments. Conflicting exercise priorities among the various participants and scenario inconsistencies between LVC operations created considerable confusion among tactical operators and

delayed the accomplishment of several learning objectives. Immature JNTC software and network connectivity hampered the ability to acquire sufficient assessment data and degraded feedback operations.¹⁵

Some of the issues that contributed to the inability to meet objectives in these events were the lack of coordination, common objectives, and guidance at the senior levels. JFCOM experimental and assessment objectives did not mesh with commanders' training objectives. Training representatives were reluctant to allow experiment and assessment representatives to become involved in exercise planning specifics. Experimentation and assessment organizations have programmed significant funding and manpower in order to satisfy their objectives. Many experiments have timelines that must be met and many assessment activities support ongoing trend analysis. The inability to meet objectives due to insufficient data is not only frustrating, but inefficient and can have serious repercussions to a particular program.

These training venues are run by a group of many individuals dedicated to making them successful. Unfortunately, cultural pressures to not only succeed, but to excel cause individuals to "look out for number one" and attempt to optimize mixed venues to support their organization's own objectives; be it training, experimentation, or assessment. During exercise planning, a significant amount of coordination and compromise is required because component commander training exercises are not designed to support all of the efforts they are being asked to. The result is that recent combined venues attempts have not been able to satisfy everyone's requirements.

The book, *Code of Best Practice for Experimentation*, was inspired and supported, incidentally, by MG Dean Cash, the then JFCOM J9, responsible for joint experimentation.¹⁶

This book describes many of the issues that arise when combining training and experimentation. Some of the more notable and common issues are participant training levels, hesitancy of participants to be creative when being evaluated, insufficient feedback time, an over-reliance on rapidly produced quick-look reports, DoD's unwillingness to admit and report failure (thereby declaring most events successful when, in fact, they were not), and the long analysis timeframe required to adequately assess data. Additionally, commanders "are very busy and under great pressure to move ahead rapidly. Unfortunately, this has translated, in some cases, into unrealistic schedules where events start *occurring so rapidly that they can neither be managed properly nor used to build coherent knowledge.*"¹⁷ Finally, it discusses DoD's culture of accepting failure and its impact on experimentation:

Perhaps the strongest indication that DoD experimentation remains immature is the inability to recognize the value of permitting "failure." Failure is either (A) a failure to support the hypothesis or novel ideas, or (B) a failure to run a good experiment. Currently, many in DoD will not accept a failure of Type A, but often accept a failure of Type B. This is exactly wrong and a sign that these individuals do not understand experimentation. This attitude arises from the mindset necessary for military success.¹⁸

The General Accounting Office's (GAO) study titled *Military Training Actions Needed to Enhance DoD's Program to Transform Joint Training* (GAO-05-548), found that some of the stakeholders did not have a complete understanding of training transformation and do not feel that current training requirements development met the needs of the commanders, services, or training commands. JFCOM develops training requirements through a working group that involves representatives from stakeholders, but; commander representatives said that they have provided little input into the development of joint tasks.¹⁹

These findings demonstrate that in order for training, experimentation, and assessment to work successfully, attitudes and culture must change and a greater

understanding of the differences in these venues be developed. However, JFCOM and service leadership have yet to adequately address the attitudes and cultural barriers affecting the success of combined venues.

THE FUTURE OF JOINT TRAINING, EXPERIMENTATION, AND ASSESSMENT

One of the more significant documents concerning mixed venues is a report by the Director, Operational Test and Evaluation (DOT&E). The successful future of DOT&E's acquisition responsibilities rests squarely on the success of mixed venues and JNTC. DOT&E's document, *Testing in a Joint Environment Roadmap: Strategic Planning Guidance Fiscal Years 2006-2011-- Final Report*, was prepared in coordination with many mixed venue stakeholders. It was published in November 2004 and released to the public in March 2005. The scope of this comprehensive report is most likely a reflection of the level of concern DOT&E has with the results of recent mixed venues. The report directs DOT&E to "provide new testing capabilities" and identify "the changes needed to ensure that test and evaluation is conducted in a joint environment."²⁰ Its goal is to enable DOT&E to "conduct adequate, realistic, and timely T&E in a joint environment"²¹

DOT&E's strategic plan does provide significant recommendations to improve many of the issues plaguing the integration of experimentation (testing) into training events including: developing new testing capabilities, methodologies, and documents to better acclimate into the joint environment; increased use of instrumentation and improved instrumentation systems; establishing relationships and vetting processes of stakeholders to develop better venues; and pursuing increased funding for various aspects of the plan. This additional funding will undoubtedly be of value to the training audience. If fully

implemented, this plan will establish a capability that will enable mixed venues to meet the objectives of the *acquisition* community.

Many of the proposed reforms will positively impact joint training events. However, the military should stay actively involved in the implementation of this plan. The report primarily focuses on ideas that will strengthen the civilian side of military transformation – the development, test and evaluation, and acquisition of joint systems. It does not adequately represent the concerns of the training community or the assessment community (nor was it designed to).

DOT&E does recognize the need to balance requirements and maintain the focus on joint training stating:

Joint forces, once assembled for testing, training and experimentation, should be scheduled with balanced and coordinated priorities to participate in support of testing, training, and experimentation requirements – live or virtual.... While sharing may be a strong benefit, it cannot dilute the primary purpose of Joint Training which remains to prepare the operational forces to fight and win wars.²²

Further, it acknowledges that not all training events should be used for testing (experimentation). DOT&E recommends that if training exercises can not meet test objectives, unique test events will need to be conducted. Support for this philosophy demonstrates a willingness to keep testing (experimentation) from taking priority over training objectives. Finally, the report recommends changes to several documents including CJCS Instruction 3500.01B, *Joint Training Policy for the Armed Forces of the United States*, dated 31 December 1999, regarding the clarification of the use of current and developmental doctrine and TTP.

However, this is as far as the report goes in promoting the training aspects of mixed events. While it provides changes to several current documents, most of the changes direct

the incorporation of testing efforts into joint training environments. It does not address many of the issues discussed in this paper such as the resolution of leadership, priorities, execution, and task development conflicts among combatant commanders, component commanders, Chairman Joint Chiefs of Staff, and JFCOM. It does not mention how to resolve issues of repetition, feedback, and combining service and joint training. Finally, it does not address cultural issues such as failure acceptance, over-reliance on simplified quick-look reports, or time for proper exercise management.

Included in DOT&E's report are comments of the plan from various stakeholders including the service secretaries and JFCOM. Each one concurred with the plan and not one military stakeholder expressed concern over experimentation (testing) or assessment requirements overshadowing training requirements.

RECOMMENDATIONS

Books such as *The Role of Experimentation in Building Future Naval Forces* and *Code of Best Practices for Experimentation*, exercise post-event reports, and feedback from participants (trainers, experimenters, and assessors) document the shortfalls in the current mixed venue philosophy. The DoD acquisition community, as represented by the office of the DOT&E, has heeded this feedback and has developed a comprehensive roadmap that addresses many significant test/experimentation-related issues.

Although supported by DoD senior leadership, not every event has to be or should be a combined event. Planners should consider various types of events and establish a priority for each – be it training, experimentation, or assessment. Combatant or component commanders should lead training events and JFCOM should lead experimentation and

assessment events. Additionally, the services must be allowed to maintain their own service-specific events to prepare their forces for “graduate-level” joint events. Experiments can be performed during training events and vice-versa, but the emphasis must be on one or the other. Venues must clarify whether doctrine and TTP adherence or development is the priority and assessment efforts must compliment, not contradict the intended effort. Training events must provide for a more comprehensive feedback experience for the commanders, the exercise JFC, his staff, and participating forces. The GAO highlighted two significant cultural challenges that should be addressed:

(1) [Establish] effective partnerships with program stakeholders, such as the services and combatant commands, through comprehensive communication and coordination; and (2) [develop] joint training requirements that meet combatant commands’ mission needs. Both these challenges, if left unaddressed, have the potential for eroding support among program stakeholders, which in turn places the goals of the Training Transformation Program at risk.²³

In its response to the GAO, the DoD stated:

[I]n FY06, many JNTC events will transition from centralized JFCOM planning and execution to decentralized planning and execution by Service- and CC [combatant commander]-nominated training programs assisted by JFCOM.

.....
Additionally, JFCOM should make more comprehensive use of the Joint Training System to better reflect CC [combatant commander] training requirements and buy-in.²⁴

While DoD’s response sounds encouraging, it will be up to military leadership to break the cultural barriers that influence the effectiveness of combined venues.

DOT&E’s Strategic Planning Guidance is an attempt to remedy shortfalls in testing guidance. The intent of this paper is not to criticize these efforts. On the contrary, DOT&E should be applauded for addressing the many problems of current practices. However, if left unchecked, the acquisition community will dictate the design of future mixed venues further weakening the commanders’ control over training. Combatant and component commanders

must work more closely with JFCOM and other assessment organizations to develop the right mix of joint training, experimentation, and assessment venues. Military leadership must develop a similar roadmap that protects the sanctity of service and joint training objectives.

CONCLUSION

This paper attempted to show that current doctrine and guidance are inadequate to fully realize the potential efficiencies expected by combining joint training, experimentation, and assessment, especially in service-specific events.

The shortfalls of combined joint training, experimentation, and assessment venues have been well documented. Several studies provide recommendations regarding the integration of experimentation and assessment. In any large, bureaucratic organization, change is difficult to implement. The U.S. military is currently challenged with addressing transformational changes not only in organization, but in policy, doctrine, funding, manning, mission, procedures, and culture as well. The effects of the implementation of these changes come together, in many cases for the first time, in joint training, experimentation, and assessment events. Until the implementation of these changes matures and transformation becomes culturally accepted, all mixed venue stakeholders will be affected. The component commander exercises mentioned previously fulfill a significant training requirement of the combatant commander. During these events, his training requirements must always be at the forefront with all other efforts subordinate to those requirements. If additional events need to be developed to satisfy experimentation and assessment requirements, then DoD must be willing to invest in them.

As would be expected, the first attempts at combining these efforts will incur problems. Many individuals involved with the planning and implementation of training venues believe that combining joint training with experimentation and assessment will not work. They are both right and wrong. Using current practices, guidance, and policy as a measure, they are right. Too many impediments are in place to prevent mixed venues from satisfying all stakeholders' needs including conflicting objectives and priorities, inadequate policies, and organizational culture. The benefits of combined venues are obvious; however, so too, are the problems. What is not obvious, but achievable, is how to realize the efficiencies while maximizing the effectiveness of all training events. If senior leadership will commit to implementing the recommendations provided in *The Role of Experimentation in Building Future Naval Forces*, *Code of Best Practice for Experimentation*, GAO report 05-548, and DoD's Strategic Planning Guidance, mixed venues may one day be capable of satisfying the objectives of all stakeholders.

In a memorandum to Secretary Rumsfeld dated December 13, 2002, Thomas P. Christie, DOT&E, stated:

While other recommendations are forthcoming, I believe one item should top the list:

To strengthen our joint warfighting capabilities, the Department should not only "train as we fight" but also "test as we fight."²⁵

While DoD should and can "train like we fight" and "test like we fight," this paper has attempted to show that DoD can not yet "train *and* test like we fight."

The overwhelming superiority and success of U.S. military forces in conventional warfare and lack of a peer competitor have created a false sense of security in regard to the effectiveness of current training venues (both service and joint). Mounting training requirements and ever-increasing technology of systems continue to strain available training

opportunities. Future training requirements will include an increased emphasis on asymmetric warfare and interagency coordination. Designing an appropriate spectrum of training, experimentation, and assessment events will require inputs from all stakeholders. DOT&E has developed a comprehensive plan to adapt and integrate into joint training events. The military must produce a similar roadmap that addresses combatant and component commander responsibilities. Proper integration of objectives, recognition of contradicting requirements, and a willingness by leadership to break cultural boundaries will alleviate many current compromises and conflicts, and promote a more harmonious integration of experimentation and assessment efficiency with training effectiveness.

NOTES

¹General Accounting Office, *U.S. Atlantic Command: Challenging Role in the Evolution of Joint Military Capabilities*, GAO/NSIAD-99-39 (Washington, D.C.: GPO, 1999), 18-19.

²USJFCOM website, "History," available from <http://www.jfcom.mil/about/History/abthist1.htm>; Internet; accessed 21 Apr 2006.

³Department of Defense, *Quadrennial Defense Review Report* (Washington, D.C.: GPO, 2001), 32.

⁴Department of Defense, Chairman Joint Chiefs of Staff Instruction 3500.01C, *Joint Training Policy and Guidance for the Armed Forces of the United States (15 March 2006)* (Washington, D.C.: GPO, 2006), B-1.

⁵Department of Defense, Director Operational Test and Evaluation, *Testing in a Joint Environment Roadmap: Strategic Planning Guidance Fiscal Years 2006-2011-- Final Report* (Washington, D.C.: GPO, 2004), 11.

⁶David S. Alberts and Richard E. Hayes, *Code of Best Practices for Experimentation* (Washington, D.C.: DOD Command and Control Research Program, 2002), 144.

⁷Comments based on personal observations of author while assigned to Joint Combat Identification Evaluation Team performing combat identification and system capabilities assessment events.

⁸USJFCOM website, "Glossary," available from <http://www.jfcom.mil/cgi-bin/perfect/search/search.pl?q=glossary&showurl=%2Fabout%2Fglossary.htm>; Internet; accessed 23 Apr 2006.

⁹Department of Defense, Chairman Joint Chiefs of Staff Instruction 3180.1, *Joint Requirements Oversight Council (JROC) Programmatic Process for Joint Experimentation and Joint Resource Change Recommendations (31 October 2002)* (Washington, D.C.: GPO, 2002), GL-3-4.

¹⁰*Ibid.*, B-9.

¹¹National Research Council of the National Academies, *The Role of Experimentation in Building Future Naval Forces* (Washington, D.C.: The National Academies Press, 2004), 126.

¹²Alberts and Hayes, *Code of Best Practices*, 263.

¹³Sean D. Naylor, "War games rigged? General says Millennium Challenge 02 'was almost entirely scripted'," *Navy Times*, 16 August 2002, available from <http://www.navytimes.com/story.php?f=1-292925-1060102.php>; Internet; accessed 22 Apr 2006.

¹⁴Department of Defense, Joint Combat Identification and Evaluation Team (JCIET), "Executive Summary," *CJTfEX 04-2 Final Report* (Eglin AFB, JCIET, 2005), 2-3.

¹⁵Comments based on personal observations of author while assigned to Joint Combat Identification Evaluation Team performing assessment activities during Joint Red Flag 05.

¹⁶Alberts and Hayes, *Code of Best Practices*, vii.

¹⁷*Ibid.*, 77-364.

¹⁸*Ibid.*, 365.

¹⁹General Accounting Office, *Military Training Actions Needed to Enhance DoD's Program to Transform Joint Training*, GAO-05-548 (Washington, D.C.: GPO, 2005), 18-20.

²⁰Department of Defense, *Testing in a Joint Environment Roadmap*, vii.

²¹*Ibid.*, 2.

²²*Ibid.*, 12.

²³General Accounting Office, *Military Training Actions Needed*, 12.

²⁴*Ibid.*, 29-31.

²⁵Department of Defense, *Testing in a Joint Environment Roadmap*, 1.

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