When Do We Teach the Basics?

U.S. Military Academy at West Point (Vincent Fusco)

West Point senior NCO speaks to cadets about NCO role

By DONALD E. VANDERGRIFF

We have to develop leaders who understand that context matters. The complexity of today's challenges and the uncertainties of tomorrow require a much broader approach to leader development and a clear understanding of the operating environment.

—General Martin E. Dempsey
Commander, Army Training and Doctrine Command
October 2009[1]

For the first time since the founding of the Republic, there is no way to tell what the U.S. Army—for that matter, the entire military—will be used for, and therefore what it should be trained for. For that reason, the late Colonel John R. Boyd, USAF, may turn out to be the most influential strategist of the 21st century. But Boyd's work reaches beyond strategy. It is also influencing how the U.S. Army and Marine Corps are beginning to develop leaders, Soldiers, and Marines, focusing on strength of character and adaptability.[2] While Marines are already familiar with Boyd, Soldiers are beginning to know him primarily through the Observe, Orient, Decide, and Act ("OODA loop") concept and from his influence on maneuver warfare. As a result, the Army is taking on and evolving a new approach to training and education called Outcomes-based Training and Education (OBT&E) while developing a new teaching method under the umbrella of OBT&E called the Adaptive Leaders Methodology (ALM).[3]

The OODA Loop

Fundamental to applying Boyd's concepts is the realization that the *OODA loop* isn't really a loop at all. Boyd, in fact, never drew it that way. Instead, the loop is more appropriately considered as a way of thinking about conflict based on the concept of keeping our orientations better matched to reality than our opponents can. Boyd demonstrated, by combining examples from both military history and modern science, that the side that can do that not only can respond to changes more quickly, but also can shape the situation to its liking, and then exploit the advantage before the opponent can react. Another key is to use training and experience to assemble an arsenal of potentially effective actions that will flow intuitively, smoothly, and quickly from orientation. The end result is, as Boyd described it, to "operate inside an opponent's OODA 'loop'" and thus produce rapid, jarring changes that disorient and demoralize the opposition.[4]

Boyd demonstrated the power of making sound and timely decisions in his theory of decisionmaking. He contended that human behavior follows a specific four-step decisionmaking cycle of observation, orientation, decision, and action—what he called the OODA loop. The party that can execute this decisionmaking process more rapidly and effectively will gain an advantage because the opponent will constantly be reacting to his decisions. These continued reactions eventually result in poor enemy decisions followed by paralysis of the entire decisionmaking process. The common expression for this procedure is *getting inside the enemy's decision cycle*.[5]

The OODA loop is also known as the Boyd Cycle. Boyd developed it based on his observations of jet fighter combat over Korea and through years of intense study of why humans react the way they do and why they make certain decisions in combat. The OODA loop uses the cognitive skills that quantify the situational decisionmaking process in tangible terms. It transitions decisionmaking theory into a simplistic and useful approach to teach and improve decisionmaking.

The critical step in the OODA loop is *orientation*, where analysis and synthesis of the observations occur. This process consists of taking many disparate nuggets of data and translating them into a mental picture the decisionmaker can then use to make a choice. Boyd describes this as an "examining of the world from a number of perspectives so that we can generate mental images or impressions that correspond to the world."

The loop gains its power from the leader's ability to form mental constructs. Timeliness and accuracy of decisions and actions relate directly to the decisionmaker's ability to orient and reorient to rapidly changing and uncertain situations. Personal experiences, education, and training (also known as knowledge) empower the leader to form these mental constructs. Boyd's theory thus emphasizes the importance of the leader's ability to think.

By-the-book answers to specific well-known situations are not good enough. It is the ability to think that allows a leader to take the knowledge from personal experiences, education, and training and adapt it to the imperfect information of the present situation to arrive at a timely, sound, and workable solution.

Applying the OODA loop faster than the opposition is the essence of situational, or intuitive, decisionmaking. It is the means of quantifying a mental process into

Major Donald E. Vandergriff, USA (Ret.), is a contractor in support of Army Capabilities Integration Center Forward.

a mechanistic action that all Soldiers can understand and apply. Decisionmaking superiority is merely creating a tactical decisionmaking base in the operating environment.

While it is necessary to understand the OODA loop, the theory should not be introduced as a model or diagram by name until later in the formal education phase of the adaptive leader's course. In fact, unless a student makes a direct reference to the process during a discussion, or uses a theory to demonstrate what he has just done, theories in decisionmaking or leadership should not be presented as part of experiential learning until the latter half of an adaptive leader's course. That way, the student can *experience* it before *naming* it.

The OODA loop serves as the centerpiece of how an adaptive leader makes decisions. Unlike the Army's Military Decisionmaking Process—a linear and analytical decisionmaking approach—the OODA loop provides a guide to how to think faster and more effectively than the enemy. However, it is a guide and not a process. Students should first be guided through many scenarios to discover the loop on their own. When finally introduced to the formal theory, students will say, "Wow, that is what I was doing!"

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Infantry officer candidate trains in combat water survival

U.S. Army (Kenneth R. Toole)

A specific area of emphasis for instructors is examining how students use the information at their disposal to make decisions. Can they distinguish between pertinent and irrelevant information? Can they do it quickly? Can they then translate why that information is important and determine how to use it?

According to Major Chad Foster, Military Science 300 Course Director at the Department of Military Instruction (DMI) at the United States Military Academy (USMA), West Point, where ALM is being applied as part of OBT&E:

At the heart of ALM is the essence of the Boyd Cycle, a 4-step theory of decisionmaking that was first articulated by Col. John R. Boyd following his study of fighter pilots in combat during the Korean War. . . . Commonly known as "OODA" (observation, orientation, decision, action), the Boyd Cycle is a useful framework for the assessment of students throughout the course. We focus on the critical step of "orientation" because this is where the cadet attempted to make sense out of the information at hand. The decision that the cadet makes is important, but how they arrived at that decision is just as important.[6]

Educating and Training = Development

The reason for recommending Boyd to those who must deal with the strangeness of the 21st century is the equally strange fact that Boyd was not primarily concerned with warfare. Although he is recognized as a father of maneuver warfare, nowhere in the pages he left did he use the term. He would certainly have agreed with both Sun Tzu and Clausewitz that warfare must serve a higher purpose or it is just brutal savagery. So throughout his work, he emphasized destruction *and* creation, coercion *and* attraction, chaos *and* harmony, isolation *and* interaction. These principles apply to the rifle squad just as they do to national policy. That is actually what General Dempsey's opening statement implies: OBT&E is the evolving approach to developing leaders who have the strength of character to make rapid decisions based on their understanding of the commander's intent beyond the traditional two levels up.[7]

The Army acknowledges the need for change. We have begun an evolution in the way we develop—train, educate, access, promote, and select—leaders and Soldiers. We are specifically concerned with how we evolve adaptability. To clarify the Army's training doctrine, the recently published Field Manual 7–0, *Training for Full Spectrum Operations*, states:

Traditional training and education may not meet all the needs of an expeditionary Army; as appropriate, training and education must adapt to the needs of a new operational environment. . . . For example, Outcome-Based Training and Education is supposed to develop individuals and organizations that can think and operate in complex environments. . . . The focus is on the total outcome of a task or event rather than on the execution of a particular task to a standard under a given set of conditions. Given operational expectations, it is supposed to develop tangible skills such as marksmanship and intangible attributes such as creativity and judgment.[8]

The Competency Theory of learning once dominated course curriculums, and signs of it remain in leader development today. The theory is a product of the industrial age outlook that once necessarily governed the way our military prepared for war. This assembly-line mentality made sense when we relied on a massed citizen army made up of draftees, but the disadvantage was that it emphasized inputs (hours, resources, people trained, and so forth) more than individual quality of the product. Order and control are central to Programs of Instruction (POIs) that use the competency theory as its foundation.[9]

Leader development for the full spectrum of 21st-century military operations must at every grade level be based on quality, not quantity. The rule should be, "Soldiers deserve and require trained leaders." Schools and courses employing OBT&E principles guiding an ALM-based curriculum constantly put students in difficult, unexpected situations, and then require them to decide and act under time pressure. Schooling must take students out of their comfort zones. Stress—mental and moral as well as physical—must be constant. Wargames, tactical decision games, map exercises, and free-play field exercises must constitute the bulk of the curriculum.

But under OBT&E, the emphasis is on growing the decisionmaker by explaining the *why* behind the task and teaching in the context of a problem-solving exercise. Higher command levels overseeing officer and noncommissioned officer (NCO) schools must look for courses adhering to a few principles, while allowing instructors to evolve their lesson plans using innovative teaching techniques and tools in an ever-changing environment. Leaders who successfully pass through the schools must continue to be developed by their commanders. Learning must not stop at the schoolhouse door.

Boyd emphasized destruction and *creation, coercion* and *attraction, chaos* and *harmony, isolation* and *interaction*

The Army is currently assessing OBT&E as a training doctrine, which evolved out of the approach Colonel Casey Haskins and his 198th Infantry Brigade took at Fort Benning from 2006 to 2008 in developing new infantry Soldiers.[10] Put simply, OBT&E looks for results; it puts the burden of professionalism more on the shoulders of the student and lets the instructor decide how to get results, much like mission orders or mission tactics where the *how* to is left to those executing the mission with little or no oversight from higher up. OBT&E is best described as "developmental training"—development of the individual within the training of a military task. Students are held accountable for what they should already know and bring to the next course.[11]

OBT&E is the guiding philosophy from which ALM was developed as a way to teach and reach outcomes. In OBT&E, Army standards remain the baseline for training; however, they are no longer the primary or exclusive goal. ALM is used to apply the principles of OBT&E. It evolved from an effort to develop cadets to be better decisionmakers and leaders of character at Georgetown University Reserve Officers' Training Corps between 1999 and 2005. ALM uses situational exercises in a tactical environment to develop professionalism, decisionmaking skills, and ultimately strength of character. The methodology used by the instructor is similar.[12]

At a U.S. Army Training and Doctrine Command (TRADOC)–hosted workshop in August 2006, Dr. Robert Bjork, Dean of the School of Psychology at the University of California at Los Angeles, presented "How We Learn Versus How We Think We Learn: Implications for the Organization of Army Training." He emphasized:

When instruction occurs under conditions that are constant and predictable, learning appears to get what we might call contextualized. It looks very good in that context, but doesn't support retention later when tested in other contexts and the learning acquired in the original context does not transfer well to different contexts. In contrast, varying conditions of practice, even just the place where you study, for example, can enhance recall on a later test. If when trying to learn several things, you intertwine the learning of those things in such a way as to cause interference among them during learning, long-term performance on them will be enhanced. Massing (such as cramming for exams) supports short-term performance; whereas spacing (distributing presentations, study attempts, training trials, etc.) supports long-term retention.[13]

Bjork's work, as it relates to the current task-centric or input approach to Army education, can be summed up in the following two statements:

- conditions of instruction that make performance improve rapidly often fail to support long-term retention and transfer

  whereas

- conditions of instruction that appear to create difficulties for the learner, slowing the rate of *apparent* learning, often optimize long-term retention and transfer.

ALM under the guiding OBT&E principles exposes students to classical education in conjunction with existing leadership programs on campuses where they are taught to find the answers, whereas "competency based" curriculum as described earlier gives students the answers. Instead, if the students are exposed to an environment in which they want to find the answers for themselves, the lessons are emotionally marked in time, which builds intuition—a necessary trait of "adaptive leaders." This approach in ALM immerses students in education and training with innovative teachers combining the terms *education* and *training* into development.

According to Major Foster:

In my opinion, the implementation of key elements of ALM has been the best thing to happen to our Military Science program during my time here as an instructor. After seeing this new methodology of teaching applied to our courses in tactical problem-solving and small unit tactics this semester, I am even more convinced of its value. In just a few weeks, I felt that I was able to get my cadets to a level beyond that which I was able to achieve over several months during previous semesters.[14]

From February 2008 through December 2009, the demand for information on OBT&E and ALM was intensified. Requests for the workshop "Deciding under Pressure and Fast" that teaches ALM increased as well. Since January 2008, ALM and the workshop have been presented in San Diego, California (at the Joint Conference on Military Ethics); Fort Huachuca, Arizona; Fort Benning and Fort Gordon, Georgia; Fort Monroe, Virginia; Fort Knox, Kentucky; and USMA at West Point. Participating in the ALM workshop is the first step of incorporating the method into a course or program.

The U.S. Army Asymmetric Warfare Group (AWG) has been pushing OBT&E throughout the Army in its Combat Application Training Course (CATC), which uses rifle marksmanship as a vehicle to show Army leaders how to teach OBT&E. AWG also used ALM in its incentives, and hosted its first Adaptability Conference on June 3–4, 2008. Day 1 focused on ALM's workshop, while day 2 focused on OBT&E. AWG followed up with a larger conference in March 2009 that involved over 100 representatives from throughout the Army as well as U.S. military and government agencies. The TRADOC Capabilities Integration Center Forward continues to host the ALM workshops, recently at Fort Sill, Oklahoma; Fort Knox; Fort Leonard Wood, Missouri; and Fort Benning.

After frequent workshops that developed over 100 instructors, and having over 400 instructors participate in the AWG CATC from September 2008 to September 2009, the Army Fires Center of Excellence at Fort Sill, on October 3, 2009, made it a policy that all training and education use OBT&E and ALM.[15] At the same time, Fort Knox has implemented OBT&E and ALM completely in its Army Reconnaissance Course (ARC), gaining "buy-in" from students and cadre after its first pilot course in March 2009.[16]

Many other institutions within the Army, including leader-centric courses such as ones at the Noncommissioned Officers Academy (NCOA) at Fort Benning, are starting to use ALM in their POI and lesson plans. As Command Sergeant Major Zoltan James, Commandant of the NCOA at Fort Benning, explains:

ALM has outlined and changed the way we teach at Ft. Benning's NCO Academy by giving us the ability to develop NCOs who think for themselves instead of current training outlines that provided them with a Task, Condition, and Standard. We have changed our training culture, adding the utilization of tactical decision games with no additional resources or increased Program of Instruction time. This new training tool allows our students attending Noncommissioned Office Education System (NCOES) [courses] *to share their combat experiences with their peers and provides a training vehicle to develop and practice adaptability. Most importantly, they gain knowledge and understanding of how to deal effectively with a continually changing environment.*[17]

> *Adaptive Leaders Methodology uses situational exercises in a tactical environment to develop professionalism, decisionmaking skills, and ultimately strength of character*

The issue before TRADOC is instituting a methodology that moves beyond the vision outlined by FM 7–0 and General Dempsey to a tangible method to instruct our leaders in "how to think" versus "what to think." James continues, "Creating adaptability in our leaders attending NCOA is a huge challenge for the current methods available of training by the standard training support packets provided for NCOES classroom instructions by the Institutional Army."[18]

The feedback of instructors and students involved with ALM reflects the positive impact this cultural change will have on the Army's future leaders. According to Captain Thomas Pike, Course Director for Military Intelligence Basic Officer Leader Course (BOLC) III:

Adaptive Leader Methodology has had a paradigm shifting impact on the Military Intelligence Basic Officer Leader Course (MIBOLC). ALM has not only improved the way in which material is presented to the students; it has also changed the way in which instructors understand their material, dynamically changing MIBOLC's training environment. ALM is what is needed to train junior intelligence officers for the 21st century.

Of significant note is that this "change" has required no additional resources or a lengthening in the total period of instruction. While the ALM takes advantage of combat veterans' insights and experiences, it requires their continued initiative and desire to grow future leaders because it continues to build on Army core principles and values. The warrior ethos underpins everything in the ALM, while the methodology itself adapts the Army's leaders to the current and future operating environment.

ALM is a cultural change rather than a specific set list of exercises. Pike calls it "a completely different mindset for the instructor." ALM develops adaptability through the Rapid Decision Making (RDM) process, using the experiential learning model and scenario-based learning. According to Captain Casey Giese, BOLC II company commander, "ALM is a system that promotes self-actualized learning via weakly structured situational problems." Captain Alec Barker, who applies ALM in his red teaming approach, says, "ALM espouses institutionalized inductive reasoning in order to prepare leaders for the complex wars of the future."[19] At a course using ALM, according to Major Paul Wilcox, former BOLC II company commander:

Students are quickly thrown into problem solving exercises that would be viewed in the past as too complicated for them without first learning the basics [from a classroom lecture]. *They then review the results of their actions in an after action review (AAR) in which the instructors facilitate the students in finding their answers. The instructors avoid telling the students how to do it, there are no book solutions, but guide the students toward workable solutions they already discovered*

in experimenting during the course of the scenario.[20]

Preferably, the instructors use force-on-force, free-play exercises whenever possible. In lieu of these capstone exercises, they use Tactical Decision Games, or as they are called at USMA's DMI, Tactical Decision Exercises (TDEs), as a tool to facilitate learning before ever introducing theory or doctrine. They may also use symposium-based case studies.[21] According to Sergeant First Class Robert Elzy, BOLC II Tactical NCO, the approach called for in the ALM POI "is more difficult because the instructors must stand back and let the students learn through doing, but also know when to step in to keep students on course without wasting too much time, as some student leaders will flounder in trying to lead and solve the problem." Major Foster adds:

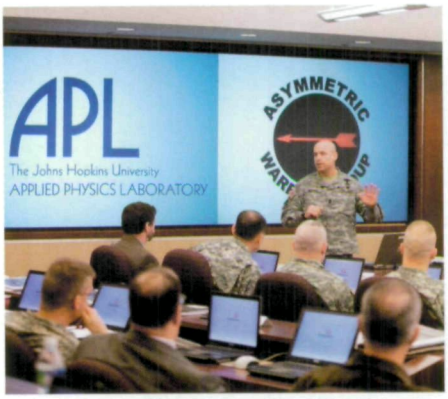
ALM works, but it takes the right kind of instructor. Gone are the days when you could just "plug-in" any officer or NCO into a teaching position. Teaching in a course that applies ALM requires a high level of passion and competence. It is tough for those who want to implement this methodology, but nothing worth having is ever easy. After seeing it first hand, I will apply the principles of ALM in everything that I do as a leader, trainer, and mentor during the rest of my Army career. I will also seek out subordinate leaders who understand this philosophy and can put it into practice.

ALM teachers are concerned with why students do what they do—an action-learning approach. The emphasis is on ensuring that students gain and maintain a willingness to act. During numerous AARs and mentoring sessions—occurring during and after numerous scenarios with different conditions—the teacher will analyze why the students acted as they did and the effect their actions had on the overall operation. As Captain Walton, instructor at Infantry BOLC III, put it:

I was skeptical at first of its [ALM's] *utility for a number of reasons. We had to really bite our lips during the painful execution of very poor React to Contact Drills during the* [exercises]. *However, we noticed during the AAR we were no longer confronted with the statement, "But that's the way SSG Meleander told me to do it." I was now able to ask leading questions during the AAR, i.e., "Why did you assault back toward your* [support-by-fire] *position?" I found myself rather than in a position of convincing the lieutenants of a way to do it, and even of being confrontational at times in the AAR, the lieutenants now fully accepted and took ownership that they were not ready. I was now coaching, teaching, and mentoring on team, squad, and platoon leadership. The lieutenants then went back and conducted several hours of rehearsals and then executed a second iteration of the* [exercise]. *They performed the best set of* [squad live-fire exercises] *we've ever conducted.*[22]

The essence of the ALM is not to arrive at the school solution, or even to teach the students to go down a prescribed checklist of steps. For an era where we cannot predict what leaders will be doing—or even if it should be called "war" at all—the checklist mentality is irrelevant at best. Instead, the method requires instructors to put students into increasingly complex and disorganized scenarios. A good scenario employing TDEs gives students a tactical problem and then puts them under stress—often a time constraint, but there are other means limited only by the instructor's imagination. The students must not only present their solutions, but also explain why they did what they did. The instructor and the other students will critique the solution as well as the explanation and the technique for solving the problem. Did the students, for example, use an effective balance of written and verbal instructions? Why did they micromanage their NCOs? Did the local population think better of the coalition as a result, or did the "favorable" body count just help recruit more insurgents?

U.S. Army (Don Cicotte)



Asymmetric Warfare Group senior NCO welcomes attendees to outcomes-based training and education integration workshop

The impact of the training can be magnified by combining TDEs with the study of military history (the best TDEs are based on historical examples) and intensive field work that includes free-play exercises. To be most effective, these teaching approaches must take place under the cultural umbrella of what is called a "learning organization." In contrast, today's approach to developing leaders is still focused on top-down memorization of process, which is not going to help future leaders achieve mastery of Boyd-type principles. As Command Sergeant Major James remarks, as a result of using ALM, "We have a better trained and developed NCO corps [who have] become critical thinkers and can adapt to a changing operating environment to support senior leaders' mission requirements."[23]

> *the issue before TRADOC is instituting a tangible method to instruct our leaders in "how to think" versus "what to think"*

Evolution Must Continue

So how do we create strategic corporals, strategic lieutenants, strategic majors, and strategic colonels? The trick is to instill a culture like the one embodied in the Army's new TRADOC Pamphlet 525-3-0, *The Army Capstone Concept Operational Adaptability—Operating Under Conditions of Uncertainty and Complexity in an Era of Persistent Conflict*. Boyd once called such a culture the "Principles of the Blitzkrieg," but dropped that description in favor of "an operational climate for organizational success." The essence of this approach is to ensure that we lead through *Auftragstaktik*, a German term implying that once everyone understands the commander's intent (two levels up), they are free to, and indeed duty-bound to, use their creativity and initiative to accomplish their missions within the intent. In such an environment, teams will largely self-organize within the doctrinal framework to accomplish the mission.[24]

James concludes that "ALM has enhanced all my NCO Academy instructors' ability to plan and execute training at my NCOES courses that encapsulates the student's ability to think for himself, giving him another tool for training his Soldiers

when they return to their units."[25] The culture will become one that rewards leaders and Soldiers who act, and penalizes those who do not. Today's culture needs to evolve so the greater burden rests on all superior officers, who have to nurture—teach, trust, support, and correct—the student, who because of his training now enters the force with the ability to adapt.

Although large-scale warfare among developed states is increasingly unlikely, conflict—the real subject of Boyd's investigations—is eternal. The world population approached seven billion by the end of the 20th century. Competition for increasingly scarce resources will continue to make conflict, including the use of large-scale armed force, ever more likely in the developing world. As Boyd insisted, resolving future conflicts so we do not again become bogged down in multi-year insurgencies will be a carrot-and-stick affair, where the emphasis is not so much on "unconditional surrender" or other 19th- and 20th-century notions as on persuading people not to support dangerous groups. A component of this approach may be discrediting those who would use organized violence to achieve their ends.

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When conflict with enemies becomes necessary, Boyd's timeless concept of "operating inside their OODA loops" provides the mechanism for achieving resolution rapidly and with the minimum damage to our coalition and to friendly and uncommitted populations. Most importantly, as Major Foster concludes, "ALM creates leaders and Soldiers who can truly 'think on their feet' because they are forced to do so in every aspect of the course. I don't think there is any other method or theory that could be better for developing leaders, especially those in the military."[26] **JFQ**

NOTES

[1] Remarks by General Martin E. Dempsey, Commanding General, U.S. Army Training and Doctrine Command (TRADOC), at the Association of the United States Army's Chapter Presidents' Dinner, Washington, DC, October 4, 2009.

[2] Several of the principles as well as methodology are being put to practice at the U.S. Marine Corps Expeditionary Warfare School (EWS) at Quantico, VA. EWS is a captains' course attended by all Services as well as allies.

[3] Discussions with Command Sergeant Major William "Morgan" Darwin, USA (Ret.), contributed to this article.

[4] Boyd's magnum opus, *Patterns of Conflict*, ends not with the OODA loop and sowing deception, ambiguity, and chaos, but with the "Theme for Vitality and Growth." In other words, our focus should always be on attracting people around the world to engage peacefully with us and our way of life, while we, in partnership with our allies, retain the capability to deal quickly and elegantly with those who would use force to gain their objectives. Available at <www.d-n-i.net/dni/>. Also based on discussions with Col Chet Richards, USAFR, and Franklin C. Spinney.

[5] I was fortunate to be mentored by many acolytes of John Boyd, particularly Franklin "Chuck" Spinney and Chet Richards. Also see <www.d-n-i.net/dni/> for a thorough examination of Boyd's theories.

[6] Chad Foster, "No Approved Solutions in Asymmetric Warfare: Nurturing Leaders in an Outcomes Based Training Environment," *Assembly* (August 2009), 14.

[7] Based on discussions with Dr. Chester Richards, November 2008.

[8] U.S. Army Field Manual 7–0, *Training for Full Spectrum Operations* (Fort Leavenworth, KS: Combined Arms Center, December 12, 2008), para. 3–7.

[9] Donald E. Vandergriff, "Review of Army Training," unpublished paper (Arlington, VA: U.S. Army Training and Doctrine Command, September 2006), 4–5.

[10] The Army made a smart move; COL Haskins is now Director of the United States Military Academy's Department of Military Instruction tasked with developing all cadets in military science.

[11] CSM Morgan Darwin, USA (Ret.), provided this definition of OBT&E.

[12] Quotation provided by CSM Patrick Laidlaw, October 30, 2008.

[13] Dr. Robert Bjork, presentation at TRADOC-hosted workshop in August 2006, "How We Learn Versus How We Think We Learn: Implications for the Organization of Army Training," 5.

[14] Quote provided by MAJ Chad Foster, October 25, 2008.

[15] U.S. Army Accessions Command, "Basic Officer Leaders Course (BOLC) Policy and Guidance," unpublished memorandum (Fort Monroe, VA: TRADOC, April 24, 2008), 4. Also see Headquarters U.S. Army Fires Center of Excellence, "The Way Ahead for Outcome Based Training and Education and the Adaptive Leaders Methodology at Fires Center of Excellence (Fort Sill, OK: U.S. Army Fires Center of Excellence, October 3, 2009).

[16] MAJ Robert Perry, USA, and LTC Kevin McEnery, USA (Ret.), "Army Reconnaissance Course: Defining the Aim Point for Reconnaissance Leader Training," *Armor* (August 2009), 14.

[17] Quote provided by CSM Zoltan James, October 31, 2008.

[18] Ibid.

[19] Alec Barker, "Review of *Raising the Bar*," unpublished book review (Reston, VA: April 2008).

[20] Based on discussions with MAJ Paul Wilcox, USA, September 16, 2007.

[21] Donald E. Vandergriff, "Swift to Swiss: Tactical Decision Games and Their Place in Military Education," *Improved Performance Society Journal* (February 2006).

[22] Quote provided by CPT Andrew Watson, TAC Infantry BOLC III, with knowledge of LTC Lance "Duke" Davis, commander of 2/11 Infantry, Fort Benning, GA, October 25, 2008.

[23] James.

[24] LTG Walter Ulmer, USA, "Creating and Assessing Productive Organizational Climates," course handout (Carlisle, PA: U.S. Army War College, 2002), 1.

[25] James.

[26] Foster.

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