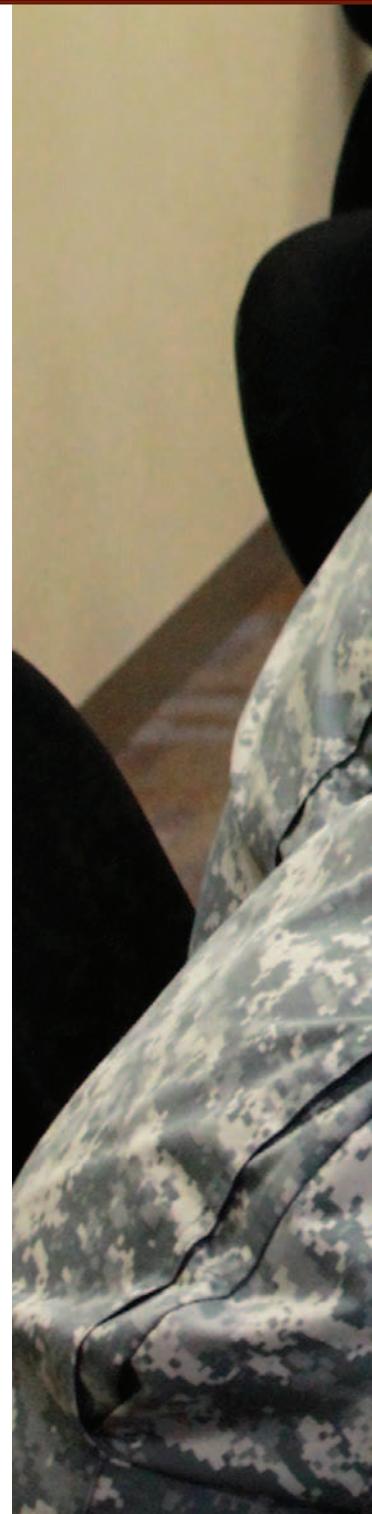

LEARNING

by

DOING

Outcomes-based instruction promises to
modernize network training

by MAJ Rachael Hoagland





LEARNING THE ROPES

In January, Soldiers with 4th Brigade, 10th Mountain Division (4/10) at Fort Polk, LA, received JENM outcomes-based training as part of the unit's Capability Set (CS) 13 new equipment training. JTNC trained more than 30 network operators in the planning and configuration of HMS Manpack, Rifleman and Harris radios. The 4/10 and the 3rd Brigade, 10th Mountain Division, based at Fort Drum, NY, were the first two brigades to be fielded with CS 13, the Army's first package of network communications equipment that provides integrated connectivity throughout the entire brigade combat team. (Photo by MAJ Rachael Hoagland, assistant product manager for JENM training and fielding support)

In a transformation of network management training, the Project Manager Joint Tactical Networks (PM JTN) has adapted the concept and practices of outcomes-based training and education (OBTE).

As a result, PM JTN, part of the Joint Tactical Networking Center (JTNC), has trained more than 100 operators since January 2013 in the Joint Tactical Radio System Enterprise Network Manager (JENM), a system that plans, configures and monitors Joint Tactical Radio System networks that use the Soldier Radio Waveform and the Wideband Networking Waveform.

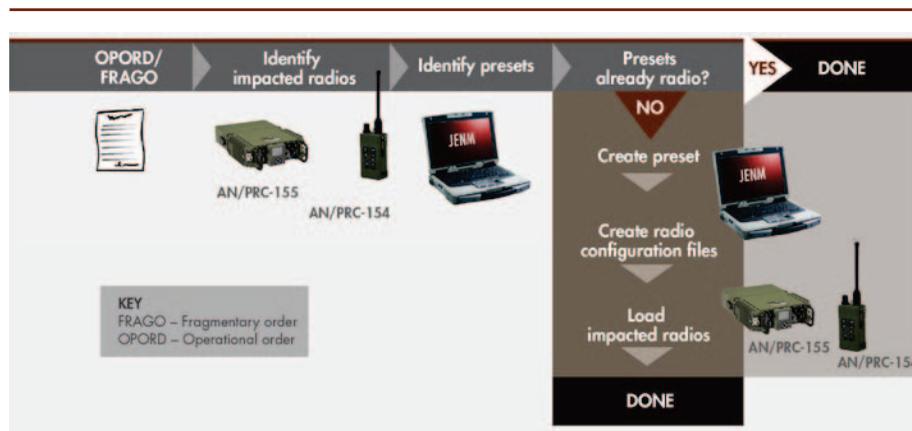
I was introduced to OBTE—a training methodology based on outcomes or results versus a standard one-size-fits-all solution to the problem—while instructing at the United States Military Academy at West Point.

OBTE standardizes by outcomes rather than by inputs or processes. In the Army, we know inputs as teaching-to-time rather than teaching-to-standard, rehearsing course material until you have it memorized, without authorization to say or do anything other than what is in the script. We know processes as the one and only way of getting to result, accompanied by detailed sequential steps on how to accomplish a task.

The goal of OBTE methodology is to make the training environment more realistic and demanding, empowering students to exercise individual initiative, hone individual leadership skills and take responsibility for their actions.

When explaining outcomes-based training, I like to compare it to understanding and learning golf. The first step is to explain the theory, physics and

FIGURE 1



UTR CHECKLIST- GUIDED INSTRUCTIONS

When Soldiers receive an OPORD or FRAGO, a unit task reorganization (UTR) may be in order. However, it would be next to impossible to build step-by-step instructions for every possible scenario in a UTR. Soldiers must be able to solve the problem on their own. OBTE aims to give them the skills and abilities to do that with JENM. A checklist serves as a guide but does not tell Soldiers how to solve the problem. (SOURCE: PM JTN)

importance of ball trajectory and how club angles affect the flight (distance and angle) of the ball. The next step is to go to the driving range to hit several buckets of balls with different clubs and thus learn how each club angle affects the flight of the ball. This is learning by doing.

The final step is to use the acquired knowledge of golf clubs and golf ball trajectory on the course. It is now up to the new golfer to pick the correct club and adapt to the changing environment, as there is no caddy (i.e., instructor) providing guidance on which club to use.

JENM TRAINING, OBTE-STYLE

During my tenure at West Point, I learned the process of converting instruction in basic military skills (land navigation, marksmanship, etc.) into OBTE events.

However, applying OBTE methodology to the existing JENM software application training was slightly more complicated. I

have my mentor and West Point's OBTE subject-matter expert, retired Army COL Casey Haskins, to thank for providing guidance on how to modernize the JENM training support package using OBTE. Haskins reminded me to trust in my trainer's expertise; ensure that the instructors understood how to build flexibility into their classrooms; insert problems for students to solve; and clearly define the outcomes I was trying to obtain.

Now that I understood how to improve the JENM training, the next goal was to teach the training team the concepts and processes of outcomes-based instruction, and to determine how best to incorporate OBTE into the JENM training course material.

One of the more critical topics covered in our train-the-trainer event was how to simultaneously teach the student who is ahead of the class while focusing on the main body of students who were on track,



FROM STUDENT TO TROUBLESHOOTER

In JENM OBTE events, Soldiers who have successfully built a functioning platoon network can then help other students troubleshoot any challenges. Here, Army SPC Nicolas Rojas, right, an information technology specialist, troubleshoots network issues with SPC Jason Cavinder, a microwave systems operator, during training at Torii Station in Okinawa, Japan, April 3. Rojas and Cavinder are assigned to the 349th Signal Company, 78th Signal Battalion. (U.S. Army photo by SFC Howard Reed, 10th Regional Support Group)

and how to bring a student who has fallen behind up to speed. The natural reaction to the problem is to say that “we need a higher teacher-to-student ratio.” But we compensated without extra teachers by using the students who were excelling in class to become assistant instructors, helping their peers who had fallen behind. Not only would they hone their skills by having to teach the material, they would learn to lead at the same time.

DESIRED OUTCOMES

The JENM OBTE training module starts with the theoretical basics of the waveform and network architecture, so that the Soldier understands upfront the limitations and capabilities of network planning. Next, the Soldier learns all the tasks and associated components

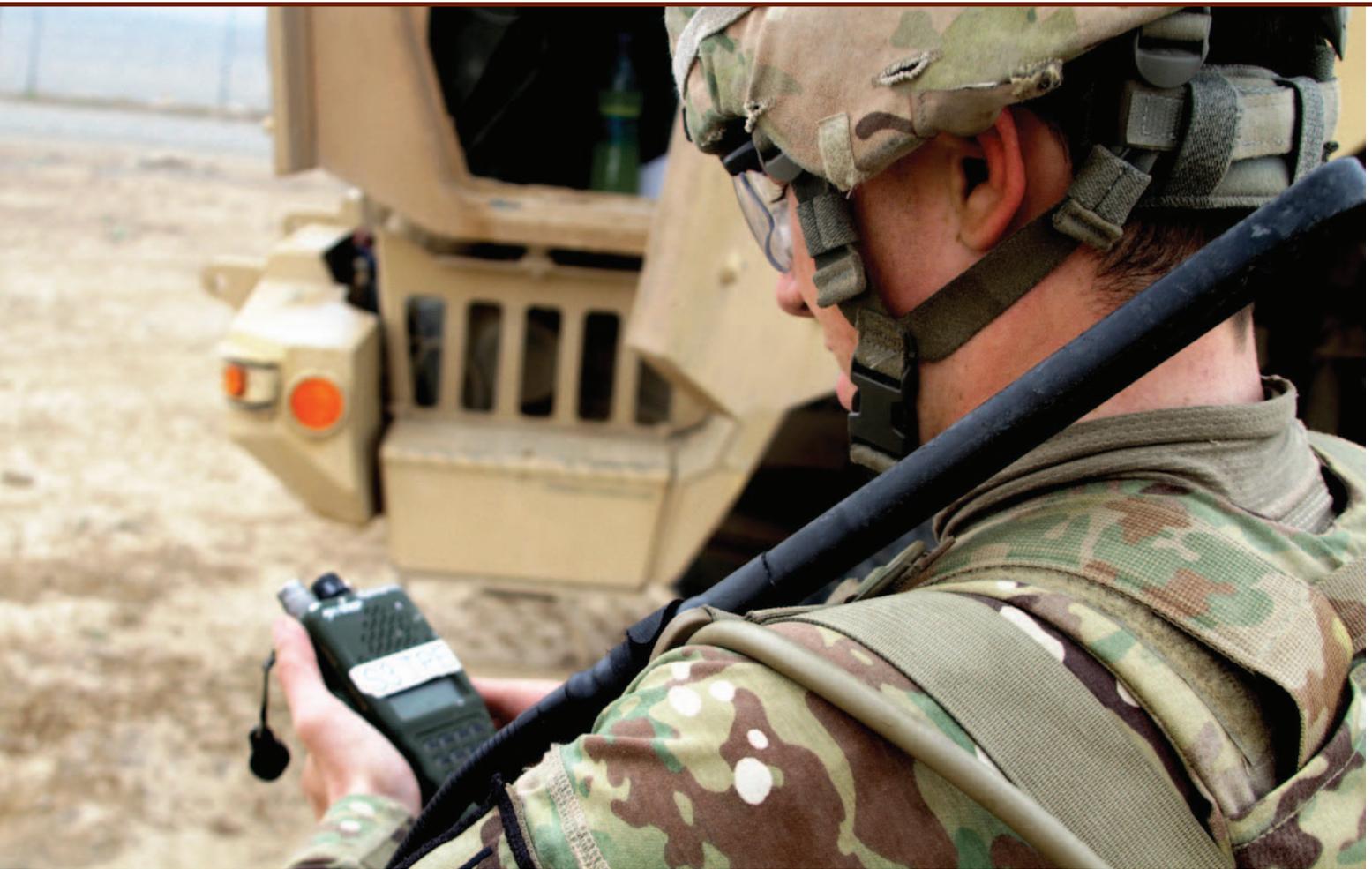
necessary to create a network, learning how each component task fits into the functional network management plan. Soon the Soldier is “hands-on” in the network planner tool, building and testing his or her first platoon communications network employing a basic set of planning skills and tools.

Once the Soldier successfully builds a functioning platoon network, he or she qualifies as an assistant instructor, able to help other students troubleshoot any challenges. This process keeps the students engaged and demonstrates true learning: If a Soldier can troubleshoot the network, he or she truly understands it.

With the platoon networks fully functional, the Soldier increases his or her

proficiency in network planning, design, engineering and implementation at the company, battalion and brigade organization levels, using the same sequence of build, test and troubleshoot.

When an instructor is confident that a student can build brigade-level networks, the instructor inserts a problem or series of problems into the operating network model. The student soon notices that the network is not working properly and immediately starts troubleshooting. These troubleshooting exercises challenge the Soldier to think critically about the network architecture, interoperability, terrain, radio hardware, crypto-related issues, the management plan and more. Watching the Soldiers tackle communication network problems provides insight



PERFORMING UNDER PRESSURE

OBTE instruction is designed to improve Soldiers' performance in real-world, high-pressure situations by requiring them to solve problems with critical thinking. Here, Army 1LT Gerard Connolly troubleshoots an AN/PRC-152 tactical radio at the communications station of Forward Operating Base Sharana, Paktika province, Afghanistan, April 26, during the 1st Squadron, 89th Cavalry Regiment (1-89) Herbert J. McChrystal Competition. Connolly was a co-winner of the competition to test platoon leaders' technical and tactical knowledge .
(U.S. Army photo by 1LT Jason A. Sexton, 1-89)

into how well they perform under stress, solve problems and think critically. It also provides insight into their mastery of the material.

MEASURING STUDENT SUCCESS

Given that outcomes-based training uses very few PowerPoint slides, minimal lectures, a flexible timeline and no standardized 20-question, multiple-choice exam, people are often skeptical of its effectiveness. Two common questions

are: How do you measure a student's capabilities without a standard exam? And, how can a Soldier properly complete a task without systematic instruction?

While we agree that some sort of progress measurement is necessary in outcomes-based training, OBTE does not conform to conventional methods of academic measurement such as standardized testing. The JENM training team has developed several benchmarks to assess a student's level of understanding, such as time,

thought process and accuracy. Without a formal exam process, the course material and instructional objectives must be communicated clearly to the students so that they completely understand the required learning objective.

Today's Soldier is smarter and learns differently than his or her predecessors. During the Vietnam War period (1960-1975), large numbers of conscripted Soldiers went through training programs quickly, requiring highly centralized control given

THE GOAL OF OBTE METHODOLOGY IS TO MAKE THE TRAINING ENVIRONMENT MORE REALISTIC AND DEMANDING, EMPOWERING STUDENTS TO EXERCISE INDIVIDUAL INITIATIVE, HONE INDIVIDUAL LEADERSHIP SKILLS AND TAKE RESPONSIBILITY FOR THEIR ACTIONS.

that recruits were not expected to think on their own. Times have changed and learning methods have evolved, as have Soldiers. Feedback from our all-volunteer Soldiers reveals a belief among course participants that minimizing the use of briefing slides and increasing the allotted time for hands-on exercise with guided instruction will help them better understand the material.

This feedback leads our team to support the idea that the newer generation of Soldiers are technically proficient individual thinkers, traits on which we must capitalize. For example, during one of our reviews, a Soldier stated, “Even though this was a challenging concept, they treated me like an adult and made me think.”

This specific kind of feedback is what we are looking for when evaluating our instructional effectiveness. Deployed Soldiers will encounter situations that do not come with a step-by-step decision-making guide, forcing them to think independently and critically, using the

guidance and OBTE experience they received in class.

MEASURING THE VALUE OF OBTE

To accept the impact and value of outcomes-based training, it is best to compare side-by-side training events: a class using an outcomes-based training module, the experimental group; and a class using traditional training methods, the control group. The training events are conducted concurrently, with Soldiers selected at random for one of the two groups.

After the two training events, each Soldier must, under pressure, complete realistic plans and tasks. As they complete these tasks, their proficiency is measured to determine which training methodology works best.

Our comparison groups used consecutive Network Integration Evaluation (NIE) events, NIE 12.2 and NIE 13.1, for our side-by-side comparison of JENM training approaches. After completing the original JENM training material used during NIE

12.2, course evaluations revealed that Soldiers felt overwhelmed and complained that the course was difficult and confusing. After the outcomes-based training during NIE 13.1, Soldiers expressed in their course evaluations that they had a “good understanding” of the material. Several Soldiers stated that the training was the best of their entire Army career.

Comparing data from when the two groups began managing their networks, the NIE 13.1 experimental group outperformed the NIE 12.2 control group in their ability to plan, configure, control and troubleshoot the network. They also showed a better overall understanding of the material.

CONCLUSION

Outcomes-based training provides a rewarding experience for an instructor as well as a satisfying way to learn for the Soldier. While the instructors are teaching the Soldier, the Soldiers are in turn teaching the instructors.

Soldiers like to provide input, have responsibility and receive leadership training opportunities. Further, they know that their feedback to training programs and processes is important and will be implemented.

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