NCOJOURNAL

AUTHOR: Clifford Kyle Jones

SECTION: Features

RUN DATE: APRIL 2017

Innovative curriculum at Cyber School soon will have cutting-edge facility to match

By CLIFFORD KYLE JONES
NCO Journal

Late last year, the Army broke ground on a new cyber headquarters at Fort Gordon, Georgia, but the Army Cyber School cadre have spent years laying the groundwork for the instruction that will take place at the state-of-the-art facility.

Command Sgt. Maj. William Rinehart, command sergeant major of the Cyber and Electronic Warfare Corps, is the senior enlisted leader at the Cyber School. He and his cadre at

have spent the past two years building the curriculum and infrastructure needed to train the Army's cyber warriors at all levels — officers, warrant officers and enlisted personnel.[1]

The ever-changing nature of cyber warfare requires a new type of instruction, Rinehart said. The tasks, conditions and standards style of training that has served the Army so well in dominating physical space since World War II is a recipe for disaster in the cyber environment, Rinehart said.

"Cyberspace and this domain? We cannot train Soldiers that way and expect them to perform in an environment of complexity and uncertainty across the board," he said. "They have to understand that they're going to come across barriers to the objective that they have to solve on their own right then. And I think we're doing that." [2]

The first half of new cyber Soldier Advanced Individual Training takes place in Pensacola, Florida, and focuses on the science and technology of the cyber environment. After six months there, Soldiers move to Fort Gordon "and learn how to apply that theory and that science in real life," Rinehart said.

"And *you* are going to do it," he said. "You alone are going to apply what you learned in those previous six months in situations where you can fail, and that's OK. How many classrooms have you been in where you can use the Internet during your test? Well, you can in some of ours, which was surprising to me even."[3]

Sgt. 1st Class Natasha Orslene is the Phase 2 course manager for the 17C (cyber operations) military occupational specialty and the senior instructor for the Cyber Common Technical Core, which extends across cohorts into much of the Cyber School's coursework.[4]

Orslene, who was deeply involved in developing the curriculum, said classes consist of about 30 minutes of instruction and are focused on a real-world scenario. Students are then asked to work through the problem on their own. Two or three students then explain their methodology and solutions. The instructor also provides one possible answer, but by letting students develop their own approaches, the Cyber School teaches much more than tactics, techniques and procedures.[5]

"Being an outcome-based school, what is it that we're trying to do?" Orslene said cadre asked themselves as they were developing the curriculum. "We're trying to build cyber warriors. What does that mean? How do we get them to that point where they can deal with those kinds of problems? Instead of just focusing on something like we're going to make you great at Windows or we going to make you great at Linux (operating systems), we're actually looking for outcomes — like you need to be good at problem-solving, you need to be good at research, and you need to be able to quickly gain technical situational awareness."[6]

In short, Orslene said, Soldiers need to "know how to take action no matter what the situation is."

"In my experience, operationally, no op plan ever goes as planned," she said. "You have to be able to think very quickly and know that even though this may be the TTP — as long as you're not doing anything illegal, immoral or unethical — there are other ways to do that." [7]

The school first ensures that students meet standards on specific technology, such as programming languages like C+, Python and Powershell. Then the curriculum moves to specific Army operations, such as offensive and defensive cyber training that may require other specialized technology training.

But at every level, flexibility is incorporated into the instruction, Rinehart said.

"When your environment changes every day, because your man-made domain changes literally every day, why would I teach you the one way built on this environment?" he said. "That's the other thing about our environment: Our training environment is scalable, adaptable, expected to change after every class."[8]

"We even change it during class," Orslene added.[9]

Rinehart agreed, saying, "If we ever teach the same class to the next group of people, we've done it wrong. It has to adapt every time."[10]

"All of our curriculum across cohorts is built to the joint standard," he said. "It has to meet U.S. Cyber Command, J7, stringent joint certification standards. And we've done that."[11]

Like all Army schools, the Cyber School's curriculum goes through Army Training and Doctrine Command, but it must ultimately be approved by Cyber Command.

"It does us no good to spend a million dollars and train a Soldier over the course of a year to find out that after all that training and he still can't do his job, because he can't touch the infrastructure because none of the training was done to the joint standard," Rinehart said.[12]

Rinehart and the cadre at the school have incorporated tactical and strategic level training to ensure the school's graduates understand their roles and responsibilities when they reach joint assignments.

"Cyber is inherently joint, so no matter where you find yourself in this branch, you have to understand the jointness and the partners and the relationships that are required to accomplish

your daily duties, …" he said. "I'm not certain how many other Army schoolhouses build all their curriculum to a joint standard, but we don't have a choice, so we're embracing it."[13]

Rinehart said leaders at TRADOC and the Combined Arms Center have worked with the Cyber School to ensure the curriculum stays relevant and graduates can have an immediate impact on the force.

"They've allowed the Cyber School to do what it needs to do, and they say, 'The processes that get in the way, let us know,'" Rinehart said. "They say, 'Let us know what gets in the way. Be adaptive, be innovative. Change the model. Force the change across the Army. Drive the change through your school, through your branch.'"[14]

Regular contact with the operational Army is key to achieving that goal, Rinehart said.

"For both sides to be relevant and growing, we have to work together," he said. "If we don't work with our operational partners in this process, then we'll fall behind, as a school. We will not be able to keep up with them because they're working in the space, in real-time, as technology is changing, and they adapt with it because they have to. If we don't adapt with them, then we're no longer relevant, and the students we produce and provide them, they'll have to retrain, and that is not where we want to be."[15]

The new style of training will be further realized when the new $85.1 million headquarters for Army Cyber Operations and Command and Control and a second building to support the Cyber Protection Team are completed in about three years. Then-Secretary of the Army Eric Fanning visited Fort Gordon for the ground-breaking late last year.[16]

The buildings will have the capacity for more than 1,200 cyber Soldiers and civilians, and will bring together the Army's cutting-edge information technology, centralize its cyberspace

operations capabilities, and encourage an open, collaborative working environment for the Army's cyber warriors.[17]

"It's not the battlefield of the future. It's the battlefield of today. So what we're building here won't be the typical government facility. It will be the U.S. Army's premier world fighting platform for cyberspace operations," Fanning said.[18]

When they are completed, the buildings will house more than half of the Army's cyber missions teams. "We are demonstrating to our adversaries that no matter how warfare may change, we intend to fight, win and dominate," Fanning said.[19]

And Rinehart says the Cyber School is ready: "What we're doing here, the way we built this school, will fit right into tomorrow's campus."[20]

References

1) Rinehart, William M.; interview with the author, December 2016.
2) Ibid.
3) Ibid.
4) Orslene, Natasha; interview with the author, December 2016.
5) Ibid.
6) Ibid.
7) Ibid.
8) Rinehart, William M.; December 2016.
9) Orslene, Natasha; December 2016.
10) Rinehart, William M.; December 2016.
11) Ibid.
12) Ibid.
13) Ibid.
14) Ibid.
15) Ibid.
16) "Army Cyber to break ground on Fort Gordon headquarters," U.S. Army, Nov. 16, 2016; https://www.army.mil/article/178276/army_cyber_to_break_ground_on_fort_gordon_headquarters

17) “Fort Gordon breaks ground on wrld-class Cyber Command headquarters,” WRDW/12, Nov. 29, 2016, http://www.wrdw.com/content/news/Fort-Gordon-breaks-ground-on-world-class-Cyber-Command-headquarters-403658586.html
18) Rinehart, William M.; December 2016.