A generation of Army officers grew up knowing exactly who the enemy was. Clear lines divided the world into enemy and ally, closed and open, communist and free. The United States made a move, and the Soviet Union countered; the Soviets designed one kind of weapon system, and the United States differentiated its systems accordingly, constantly seeking an edge—until the stalemate cracked and the Soviet bloc walls came down, taking with them the assumptions underpinning Army doctrine.

A younger generation knew another, more amorphous enemy, harder to pin down on a map: terrorism. The dividing lines were blurrier, complicated by the leaps-and-bounds evolution of technology to both sides’ benefit. The enemy didn’t necessarily have a state—or even a headquarters—and purposely sought to avoid confronting the United States’ strengths while seeking to exploit its vulnerabilities. Another battle plan emerged: Attack the governments that gave shelter to terrorists who threatened the United States. That pattern has driven the Army’s planning and equipping of its Soldiers for the past 15 years or so.

Changes pile on fast and furiously these days—that much is clear. The technology used by Soldiers five years hence is likely to be unrecognizable to today’s Soldiers. If a chessboard was ever an accurate analogy for the global security environment, the board has been upended. Tomorrow’s Soldiers will play a different game.

Who will the next generation’s enemy be? The new “U.S. Army Operating Concept: Win in a Complex World, 2020-2040” (AOC) doesn’t attempt to predict the future—nor, necessarily, to answer that question directly. It does assess the current threat climate and extrapolates from there to help the Army plan for an unknown future. The AOC is a chance to break free of the constraints that often narrow our vision (budget, bureaucratic inertia and “the way we do things around here”) and think hard about where the Army is and where it needs to go. (See Figure 1.) This overarching concept, developed by the U.S. Army Training and Doctrine Command (TRADOC), will affect the way the entire Army operates, from the Soldier in the field, to the strategic planners at the Pentagon, to the acquisition workforce member working to make a program successful.
The AOC attempts to sketch out what it can about the future, but also accepts unknowables as a core feature of the new landscape and thinks through how to anticipate them. How, for example, do you develop requirements for a system when you don’t know when and where it will be used, and don’t know what it’s opposing?

You keep requirements simple and flexible, and make systems modifiable and multiuse, according to GEN David G. Perkins, commanding general of TRADOC. You focus on innovation, not differentiation—since you don’t know what your enemy will be fighting with. You change the business model, so if a new technology pops up, the Army can pivot quickly to focus on it without having to let a previously authorized program of record run its course first. This requires a new approach “from Congress on down,” Perkins said, from those who develop the Army’s requirements to those in the acquisition community who act on them.

Perkins assumed command of TRADOC in March 2014. A 1980 graduate of the
Over the course of a long career, Perkins has held numerous strategic roles, including the Multi-National Force – Iraq’s deputy chief of staff for strategic effects; deputy assistant chief of staff for operations, U.S. Army Europe; and commander of the U.S. Army Combined Arms Center at Fort Leavenworth, KS, from November 2011 to February 2014. At the Combined Arms Center, Perkins led the development and integration of the doctrine the Army uses to fight and win wars.

We spoke with Perkins Nov. 24 about the development and scope of the new AOC, the current threat climate, and where he sees the biggest future challenges. He pulled no punches, calling out a crippling lack of imagination, contemplating a new definition of success in acquisition, and planning for the unknowable.

ARMS AL&T: Tell us about the new “U.S. Army Operating Concept: Win in a Complex World.” How does it address a future that is unknown and unknowable?

PERKINS: People have to understand the purpose of an operating concept. It’s interesting. … Sometimes there’s a misunderstanding [of what it is]. It does a couple things. It tries to describe the future—not predict the future, but describe it. A lot of people talk to me and want me to predict the future, i.e., “Hey, General, who’s the next person we’re going to go to war with, and where are we going to go to war with them?” That’s not the role of the AOC. First of all, that’s almost impossible. We never get it right, and it’s actually not as useful as people think it is.

What we have to do is describe the future. Regardless of who is the enemy, what is it they are going to do to us, and how are they going to act? And so we outline a number of things about that. Examples are, they will try to avoid our strengths. Regardless of who the enemy is, we know that it is well-known that the U.S. military, the U.S. Army, once we decide to do something, we will be the best in the world at it, so going head-to-head with the U.S. Army with regard to whatever it is we decided we’re going to be good at is not the best way to win. So they will try to avoid our strengths. They will try to emulate whatever capability we have. If we have UAVs [unmanned aerial vehicles], they will try to get that. The reason is, … they realize that we spend a lot of time, [the Army Acquisition, Logistics and Technology Community] in particular, trying to do research, development, trying to get warfighting concepts to figure out … what is the technology that pays off.
Basically, they mirror our thought process in research, to say, well, “If the U.S. Army thinks that unmanned aerial systems are important, then we’ll get unmanned aerial systems. If they think night vision goggles are important, then we’ll get night vision goggles.” They’re really just taking advantage of all the hard work that we’ve done and our thought process—actually, from a macro level, not even, “We’re going to steal their plans for night vision goggles,” but “We’re going to get some, because the United States Army thinks that’s a useful thing.”

Whatever capability we have, they will try to emulate it. I don’t care who the enemy is. So when you start to describe the environment you’re going to operate in, it’s actually much more powerful than trying to predict it. Because then you have to say, “I am going to have to fight somebody who’s probably not going to take me head to head with my strengths, but, again, whatever I’m strong at, it forces them into another area.” That’s not to say not to be strong at something; it’s just to say that if you don’t want them to do something, you probably ought to be very good at it to prevent them from doing it.

The second thing is, if you describe what the future is, now you can start thinking about, well, what does the Army have to do about it? Chapter 2 of the AOC describes the future. Chapter 3 says, OK, now that you’ve described the future, what is it that the Army has to be good at? So we talk about how the Army has to operate, our tenets and core competencies and things like that. And then the last thing that we say is three things: Describe the future, describe what the Army has to do and then how do you get there—how do you take concepts and turn them into capabilities?

In Chapter 4, we go from concept to capabilities. So we really do three things, and Chapters 2, 3 and 4 are laid out that way.

ARMY AL&T: You have said, looking ahead to Force 2025 and Beyond, that “Everybody’s got to change.” What does this mean for the Army AL&T community in the near, mid- and long term? What does it mean for the TRADOC requirements community?

PERKINS: If you look at the previous concept that I grew up in the Army with, AirLand Battle, [it was a] great concept, very intellectually rigorous, and drove a lot of change. AirLand Battle was written specifically to deal with the known: the Soviet Union in the central plains of Europe with NATO. We knew the enemy. We knew the location. We knew the coalition. This AOC, “Win in a Complex World,” is specifically to deal with the unknown. We don’t know who the enemy is. We don’t know where we will fight, and we have no idea who we’ll fight with. [It is] the same intellectual process: Who is the enemy, where do we fight and what’s the coalition? But a very different answer. When you look back at AirLand Battle, … it gets back to innovation. Everybody wants to innovate. Who wants to say, “Hey, I’m a legacy guy. I just wanna keep what we have. Getting new stuff is very expensive and a waste of time. In fact, I just want to go back 10 years.”

Everybody wants to innovate. But there are two ways to innovate. If you’re dealing with the known, like I grew up [with]...
in the Cold War, then you focus on differentiation. I innovate to gain differentiation. In other words, I know that the enemy has the T-55 tank, [and] I'm going to build [an] M1 tank. I'm going to differentiate greatly, because I know Soviet five-year plans. I know how long it takes them to go from a T-55 to a T-80 or T-72 or whatever, and so I'll differentiate and get a huge delta in capability.

Usually when you focus on differentiation exclusively, what happens is it takes a lot of time—a lot of testing involved, a lot of bureaucratic processes and all that, and so it takes you 10 years to build a tank. But, since you have a known enemy and you know what you're going to use it for, even though it took you 10 years to build it, it gives you a level of differentiation for 20 or 30 years. The problem is, in an unknown world, that's not what you have to focus on because you don't know what your enemy has, you don't know what you have to fight against and you don't know what they're going to do. You have to focus on rate of innovation rather than level of differentiation. So what you do in an unknown world is you start measuring the quality of innovation by the rate of innovation, the rate of change.

The biggest challenge we have, both on my side of the equation, which is generating requirements, and your [acquisition] side, which is executing those, is that the whole system that you and I operate in was built during the Cold War, and therefore it was built to deliver a level of differentiation, not rate of innovation. That means we have to develop requirements that focus on rate of innovation, and then we have to hand those requirements off to an institution that focuses on rate of innovation, and that requires a change from Congress all the way down.

**ARMY AL&T:** How are the TRADOC and acquisition communities working together to fulfill this vision and ensure that desired solutions are within the
realm of the possible? For example, how are you looking at capabilities differently than before Force 2025 and Beyond?

PERKINS: We’ve really got to focus a lot more on what I call “first principles.” That is, a lot of times we develop requirements and you build to those requirements with a focus on a level of specificity that is not useful, and, in many ways is sort of self-confining. So one of the things we should understand in the world of the future that we operate in, is that the capability of the United States Army that is most transferable is technology.

In other words, almost anything the United States Army has, our enemy can go out and buy it, if they have enough money, on the black market or the orange market or whatever. So the thing that we have to do is [look at] what is the thing that gives us the edge that is difficult to transfer. Pure technology, all you have to do is get a thumb drive in the right computer, and you can download a bunch of technology very quickly. Where we have the advantage is the way that our technology interfaces with the Soldiers, the Soldier-technology interface, the way that, again, they can innovate with that, adapt and innovate. How quickly can they adapt to the conditions that they’re operating in, and how rapidly can we increase that rate of innovation?

When we take a look at a fighting vehicle, for instance, how does a Soldier interface with that? How adaptive is this vehicle to many different scenarios, many different mission sets, and have we built this thing with the understanding that whatever strength this thing has is going to be very short-lived, [and] therefore we’re going to have to constantly innovate and make this bigger? The things that I think will have the shortest half-life, are they very easily innovated at a reasonable cost?

There are certain things, like the rubber on the tires. The technology in tire rubber probably doesn’t change as quickly as software, for instance. Or it may be even ballistic protection. So we’ve got to figure out, when we build something, what are the pieces of that technology that are going to quickly become outdated. Therefore, those are the things that should be most easily innovated at a reasonable cost, and it has to be something that is doable and is built into the process. I’m not sure that we generate requirements like that right now. We generally bite a whole chunk at once.

ARMY AL&T: We did an issue about a year ago on agile acquisition, but that’s more on how to speed up the process of developing a product. You’re actually talking about agile inserted in the product so that you can easily update it as you need. How do you keep this concept of agile from being just another spiral development or Future Combat Systems … and everyone just rolls their eyes in Congress?

PERKINS: I don’t mean to be poking holes in AirLand Battle, because I think it really transformed the Army. … I constantly have to describe to folks the significant differences in this [new concept], which is unknown world versus known world, [and] rate of innovation. Another part of this is that we do gap analysis: Here’s the requirement that’s out there, here’s the requirement I have and here’s the delta gap. So we’re basically trying to manage shortages: Here’s the bad guy capability, here’s my capability, I have a gap, which means you’re basically letting the current enemy define what you focus on. The other thing we have to get better at is exploiting opportunities, whether it’s from a technology point of view or not. It really is a hybrid, both concepts and technology. There’s a symbiotic relationship there.

I’ll use technology [as an example]; people can best relate to it: Here’s something that just popped up, wherever it popped up out of. It wasn’t in any requirements document. It wasn’t anything we’ve been thinking about, but it’s an opportunity we can exploit. The problem we have now—because our system is built to deliver level of differentiation, which takes a long time [and is] a very long and arduous and lockstep process—is that, when new opportunities arise, if they weren’t part of the original requirements, it’s very difficult to exploit that opportunity because we’re so focused on another gap here.

If I exploit an opportunity over here, which wasn’t apparent two years ago when we built the POM [program objective memorandum] and had a program of record, what I need to do is kill this
program of record, which is focusing on filling this gap, and exploit this opportunity—because if I change my concept and do business this way, I don’t have to worry about the gap.

I come from an armored cavalry background, and at one point we had a lot of blacksmiths in the cavalry back then, and you could say maybe a gap analysis then was that the horseshoes were wearing out too quickly, we need new horseshoe technology. And so we have a program of record on new horseshoes. We’re working on it, we’re training the blacksmiths to be better at putting nails in and shoeing the horses, but then all of a sudden there’s this new technology called the internal combustion engine, and now is the opportunity to exploit it. But I don’t have the internal combustion engine in the POM, I have this gap in horseshoes, and until I fill this gap in horseshoes I don’t have money to put into internal combustion engines. Whereas, when the internal combustion engine comes on the horizon, maybe I say, “The program of record on horseshoes, I just need to kill that program and start focusing on the internal combustion engine.” That is very difficult to do. We don’t have an institutionalized way to look at opportunities, and we definitely don’t have a way to exploit them.

ARMY AL&T: How do the capabilities of the future force translate into reforming, or better managing, the bureaucracy, so that the Army can really innovate and drive change based on the AOC?

PERKINS: The Army is a big bureaucracy. TRADOC is a big bureaucracy, the Acquisition Corps is a big bureaucracy. I tell folks if you want to change things, one of the most important things is, you have to pay attention to what metrics you use. I find metrics
not particularly useful to give you situational awareness about what’s going on, because we usually measure the wrong things and we draw incorrect conclusions. I’ve found that the metrics we use are generally very bad at giving you a good understanding of what’s going on. But they are good for one thing: Metrics drive activity. Once you start measuring something, people will start generating activity. I tell people, everybody wants their bar to be green. In other words, if you put up a PowerPoint chart and you put up a bar …, people will say, “If you’re going to measure that, I want that bar to be green.” Nobody wants to be amber or red, and God forbid you’re ever black. So you say, “You know what? Maybe I need to start measuring things differently, measure different things.”

If you want to measure rate of innovation, what is a good metric? I was talking to [an executive of] a Fortune 50 company recently … about innovation, and I said, “So, how do you all measure innovation?” He goes, “Well, one of the things that we do is that we measure the rate of failure of new startup programs, so, new ideas.” This is kind of a high-tech company. He said, “Once we fall below 70 percent, we know we have a problem, if we fall below 70 percent failure.” I said, “What do you mean?” He said, “If 50 percent of the ideas people come up with actually go into production and work out, then they’re not pushing the envelope enough. In other words, I want people to get out there on the edge, and if they’re really out on the edge thinking through stuff, a lot of this stuff, a lot of it won’t pan out. … We find that if 30 percent succeeds, it really succeeds, beyond our wildest dreams.

“If we get lower than that, people are being too cautious, they’re too comfortable, they’re not taking enough risk.”

This is a company that’s well-known for really pushing the envelope and coming up with game-changing stuff. What you don’t know is that for every three [concepts] that went to market and now change the face of the world, seven are on the cutting-room floor. How about if, in the world that you and I live in, we went to Congress and said our goal is to make sure 70 percent of the good ideas we start fail? I’m not sure that would go over well. But maybe one of the things to start measuring, as an Army, is not how many programs of record did we complete—I know this is almost heresy—but how many programs of record did we cancel because they were becoming obsolete, and then took that money and put it into a new startup that started as a new idea. Where we tend to focus now is on, “Is your program on time, is it within budget, is it near completion?” What we’re measuring is your compliance with the status quo. That’s what we measure.

What we ought to probably start measuring is innovation. … How much stuff did you stop doing because it was a good idea 10 years ago but is no longer a good idea, and we’ve taken those resources and put them into something nobody even thought was possible 10 years ago? Where is that graph? … You have to define success differently. You have to measure different things if you want to change. If you want to change something and you keep measuring things the same way, why do you think anything will change?

**ARMY AL&T:** Do you have current and emerging technologies in mind as potential opportunities?
PERKINS: When you think of opportunities, again, what I try to do is back out and say, what are the problems that we deal with, especially on a strategic and operational level? As a military guy, what I’m always trying to do is reduce tactical risk. … At the strategic level, what our policymakers are trying to do is reduce strategic and political risk. … And sometimes those are diametrically opposed. The example I’ll give you [is this]: If I’m going to go do an operation—and I’m an armor/infantry kind of guy, so I’m a maneuver guy—I’m going to go deep, so I want to make sure I have enough supply, lots of ammo, fuel and water. I want lots of supply convoys on the road, so I have more than enough bullets and more than enough fuel, because that will reduce my tactical risk. I don’t want to run out of fuel, I don’t want to run out of bullets.

The problem with that is, for instance, that while I’m trying to reduce my tactical risk, I am possibly raising strategic risk because now I have a lot of supply convoys on the road and I have a lot of Soldiers there. In fact, if you look at Iraq, one of the areas where we lost the most Soldiers to IEDs [improvised explosive devices] was conducting supply convoys. … We were trying to reduce tactical risk, but in some ways we were raising strategic risk because the chance of someone being taken captive or getting killed was quite high. We’re always balancing one against the other.

So, for instance, taking a look at our capabilities—that’s what an Army operating concept does—I want to simultaneously reduce tactical and strategic risk. One of the areas that I think does that is autonomous operations. What if you could supply tactical troops in contact without incurring additional strategic risk? … What if you could have autonomously operated vehicles, what if you could have unmanned aerial things that could deliver supplies, et cetera? … It’s really a combination between technology and the concept—not just technology for technology’s sake, but what can it do for me at the tactical and operational level? That’s how we have to take a look at it so we’re not just jumping on the latest shiny object, but we take that shiny object and we lay it on top as a way to mitigate risk from the tactical to the strategic level, not just one level. That’s the problem we have when we look at technology. Sometimes technology reduces one level of risk, but it increases another echelon of risk.

ARMY AL&T: What do you see as the biggest challenges, i.e., the possible impediments, to achieving the vision for Force 2025 and Beyond?

PERKINS: Number one, I think, is sort of lack of imagination. Really, I do. Number two is a lack of willingness to take risk, to change the way we do business, everything from the way our leaders think about war to the processes, and then, therefore, a lack of risk in coming up with new and innovative concepts, and a lack of taking risk with regard to forming the process where we take a concept and form it into a capability. [The challenge] really is much more in that area than it is in actual technology itself. As GEN Sullivan [GEN Gordon R. Sullivan (USA, Ret.), 32nd chief of staff of the Army] always reminds us, the intellectual leads the physical. The biggest concern I have is that we will be unwilling to have the courage intellectually to change what we have to change to produce the physical that we need to have.

ARMY AL&T: How does the defense budget, especially the need for (and often lack of) predictability, factor into the development of this new AOC?

PERKINS: The basic answer is, it has no impact whatsoever, and I’ll explain that. I brief the AOC, we’ll have a PowerPoint slide and [people will say], “Oooo, that looks expensive.” If you read the AOC, it’s not about force structure. It doesn’t talk about divisions or brigades or battalions, even though I’ve commanded divisions, brigades, battalions. What the AOC is, really, is a way to think about the future. (In some ways, you could say that’s priceless, right?) We hear a lot of, “It’s a resource-constrained environment. Can you afford this?” We can’t afford not to do it. Because in some ways, if you have tons of money, like we did until the last couple of years, … it’s not as important that you have a well-defined vision and that you set priorities and that you have a way of getting there, because you have so much money that you just throw it all over the place and eventually, hopefully an answer will spring up. But if you are in a resource-constrained environment, it’s even more important that you have a vision. It’s even more important that you have priorities. You know, if all of a sudden you are in a household and one of the breadwinners loses a job, don’t you spend even more time saying, “Gosh, what is the most important thing? What groceries are we going to buy? How much are we going
to put aside for the kids’ college?” But if you just win the lottery, you have $100 million, you know, Ed McMahon shows up with a big check, [you think], “I don’t need to make a priority list. I’m just going to buy whatever I want in the grocery store—I’ll go to Best Buy, whatever I want.” I get that question a lot: Can you afford to do this? My point is, you can’t afford not to.

**ARMY AL&T:** Are there any final comments you would like to add?

**PERKINS:** I would say that TRADOC writes this [AOC]. The official term for this is TRADOC Pamphlet 525-3-1. … So that’s the technical term. But the title is “The U.S. Army Operating Concept.” It’s not called the TRADOC operating concept, it’s the U.S. Army’s operating concept. It was written by TRADOC, but actually we were very collaborative. We talked to all the folks, really, in the whole enterprise: DA staff, folks in acquisition, division and corps commanders, so this is the Army’s operating concept. When people read it, they need to say, “This is not just TRADOC’s good idea, this is the way the Army is going to operate. This is how the Army thinks about the future, and so it affects everybody in the Army.” And so I just encourage people, when they read it, they need to understand that when we talk about what goes on here, it should affect everyone in the Army, and if somebody thinks it does not affect them, that’s where we have the problem.

So I would just encourage people, if they read through it and they say, “What does this mean to me?” just give us a call here at TRADOC. We’re in the book. We’ll explain it. That’s one of my biggest concerns: that people think that this is some pie-in-the-sky stuff that TRADOC does in its free time. Again, the title is the Army operating concept. When we came up with AirLand Battle, which was the Army operating concept, when we came up with AirLand Battle, which was the Army operating concept, written at TRADOC, it affected every part of the Army. This will do the same.

For more information, go to [http://www.tradoc.army.mil/tpubs/pams/TP525-3-1.pdf](http://www.tradoc.army.mil/tpubs/pams/TP525-3-1.pdf); or contact LTC Adrian Bogart at 757-501-6484 or LTC Brandon Smith at 757-501-6490.