



“Thinking About What Could Be”

An Interview with General John M. Murray, Commanding General Army Futures Command

What were the circumstances that led to the creation of Army Futures Command? In other words, what is the problem that the creation of the new command is the solution to?

Army Futures Command is an adaptation to the on-going change in the international order we have seen since the end of World War Two. The rules of the road for international order have changed; Russian destabilization of Ukraine, Chinese assertiveness in the South China Sea, and the inevitable shift from an Atlantic-based global economy to a Pacific-based economy.

Russia and China watched the American way of war, first in Operation *Desert Storm* and then in the opening phases of Operation *Iraqi Freedom*, and fundamentally decided that close combat with the United States and our allies was not a winning proposition. Their concept of layered standoff—which we think is fundamental to their theory of victory—beginning below the threshold of war, sees constant competition below that threshold. We have seen it in Ukraine, the South China Sea, and the Baltics; all attempting to achieve strategic objectives below the threshold of war.

In western society we tend to see long periods of peace interrupted by short periods of war as the norm, while many of our adversaries see the world in constant competition—not necessarily always military, but through all the elements of national power; diplomatic, information, economics, as well as military. That’s a different kind of world perspective; but from a U.S. Army perspective, our almost singular focus on counterinsurgency for the last 18 years—which was exactly what was needed when you are losing soldiers each and every day on those battlefields—cost us an entire generation of modernization. We also suffered some pretty large failures in developmental programs; Crusader, Comanche, and Future Combat Systems, which basically means that we are fighting today with the same platforms we fought with when I was a company commander back in the

Interviewed by PRISM Editor-In-Chief Michael Miklaucic on November 5, 2019

mid-1980s. They have different capabilities now because they have been upgraded over time, but the fact remains that the architecture is the same; the physics that went into building the Abrams and the Bradley are 40 year old technologies.

These were the big things that contributed to the Army's decision to modernize; and the four most senior Army leaders—the Army Chief of Staff, the Secretary of the Army, the Undersecretary, and the Vice Chief of Staff—were in unison in their visions of what the Army needed to do and how we were going to do it. Specifically regarding the Army Futures Command, General Mark Milley at that time looked at the enterprise called the Army and saw there was really nobody focused on modernization; all focused on the short term with nobody looking deep into the future to figure out what the future operational environment might look like. Nobody was anticipating the next operating concepts inside that environment, and nobody was looking at what had to be developed to succeed.

Modernization is a continuous process requiring collaboration across the entire Army. Army Futures Command (AFC) under the direction of Headquarters, Department of the Army, brings unity of effort to the Army's modernization approach by developing and delivering future concepts, requirements, and organizational designs based on its assessment of the future operating environment. Before AFC, the first place modernization was synchronized was at the Chiefs and Secretary of the Army level. That lack of unity of effort and unity of command, that lack of a command focused on the future and what the future challenges might be—beyond material—and the need to orchestrate the effort is really what led to the establishment of the Army Futures Command.

How has the Command been stood up?

It started off as a task force: we uncased the colors here in Austin in August 2018, so we are 14 months old. Across the entire command we have gone from

about 40 to 26,000 personnel; here in Austin we have about 400 on the ground, and a requirement for another 100. We have limited direct hiring authority, but not every position can be a direct hire, so most hires go through the normal hiring process.

How does the Command select and prioritize its initiatives and its research?

One of the things I have learned over the past year is to clearly identify the challenges or problems we are trying to solve. There is a lot of great research that goes on in military laboratories, in the Army, Air Force, Navy, Marine Corps, as well as great research in universities; and lots of great innovation all over this country. But if you are out there searching for great technologies and then trying to find a problem for them, that is actually the reverse of how it should be done. So we have spent the last 6 to 8 months focused carefully on identifying the technological challenges or problems that our cross-functional teams are working on or need solutions to. We will soon bring all the program executive officers together to focus directly on their major problems from a technology standpoint, or a research and development, or science and technology standpoint. We then focus the Army Applications Lab— as well as our internal laboratories—on solving those problems. Identifying the problems first before you go and try and find the solutions, as opposed to vice versa.

How does the Command actually go about identifying those problems?

We sit down with each of the cross-functional teams and ask them to step beyond what they are currently working on and start to figure out what comes next. Some of the coming challenges—take, for example quantum; quantum is not here yet, but it is coming sooner or later. The Artificial Intelligence Task Force, embedded at Carnegie Mellon University and partnered with leading researchers across the country, is defining and developing future capabilities

for AI-enabled Multi-Domain Operations in order to think through the impacts of AI on a future battlefield. Not unique to the military, but pretty much across the military—especially the Army—we tend to think in terms of what is, as opposed to what could be. So we try to shape our thinking about what could be, and how emerging technologies that may not be here yet, but are coming, could fundamentally change the way we fight.

How does the Command interact with academia and the private sector that is different than the way the Army has traditionally interacted with those communities?

We have invested in universities for a long time and invested in university research. We had a small business program for a long time, but it is the laser focus we are able to bring by understanding the problems we are trying to solve upfront. We currently have three strategic university partners: one of them is focused on hypersonic and directed energy; another is focused on robotics and autonomy and precision navigation and timing, so that in a degraded environment you can still ensure navigation and timing; and a third partner is focused on Artificial Intelligence. These are the things we are currently focusing on. It is the focus on specific challenges that distinguishes our approach to academe and the private sector.

The data base of problems we are currently addressing—around 40 at this time, and it will continue expanding—is open to private industry as well. In our public communications we lay out our problems and invite companies from across the country, small, medium, and large, to come hear us, and focus on the problems we are trying to solve.

Does Army Futures Command work closely with the Defense innovation unit?

The Defense Innovation Unit has an office in Austin making Austin a hub. We have the Air Force Innovation Unit, the Defense Innovation Unit,

Army Applications Lab, and National Geospatial Agency all located in the same building, so the hand off of problems, technologies, and solutions happens all the time.

How do the cross-functional teams operate? How are they composed? How are they given their assignments? Do they interact with each other?

They interact with each other constantly. Something we have done poorly in the past is communicate across systems; every system operates as a part of a bigger system. The whole is an integrated system of systems construct. Take for example a cannon I want to develop that shoots 1000 miles; if I can't see 1000 miles, and I can't pass targeting data back to that cannon in near real time, and I can't do battlefield damage assessment of those fires, then that cannon that shoots 1000 miles is interesting, but not very relevant. Looking across the cross-functional teams is a systems approach to how all the systems interact together and about how they all have to communicate together. That drives integration across the cross-functional teams almost from inception.

Cross-functional teams include operators, scientists, engineers, testers, costers, requirements experts, acquisitions experts. The theory behind them is if you get the team together in the beginning with a better set of products that drive the development of a capability, you end up with better early prototypes to drive the requirements; you end up with better prototyping so you don't have to go through a constant changing of requirements through the lifecycle of a program. The most powerful thing about the cross-functional teams is the partnership between the program manager, and the cross-functional team director, all sitting around the same table focused on the same problems every day, focused on the same outcomes, without VTCs, phone calls, and TDYs. This is one of the most powerful lessons we learned during the first year.

How do you anticipate our peer competitors' intentions and capabilities?

This is not easy, and it is not perfect. We start with the attitude that we are not going to be exactly right, and that's okay. I fundamentally believe there has to be some goal or objective you are after in the future, or else any road will get you there. We have a directorate of Intelligence that is different than any other intelligence directorate I have ever been associated with that has a distinctly Army Futures Command perspective. We are not at all interested in what is happening today, or next year, or the year after that. We have a very small group of people trying to harness the power of the entire Intelligence Community, to make predictions well into the future. First of all is understanding. It does not matter who our adversary is; we must understand where they currently are, understand from a lot of open source inputs about what their intentions appear to be, and then ground that with the technology forecasting expertise we have to anticipate what path they are on. Then we can establish what they say they want to do, where they currently are, and what path we think they will take to get there. There will be some key points over time that either prove or disprove that those technologies are imminent; and we focus on getting there ahead of our adversaries to establish overmatch. We do not want to get to 2035 to find we have fallen behind. We want to aim ahead of the competition and not behind it. Understanding the technology paths, understanding the feasibility of what they are trying to do, the technological hurdles they will have to overcome to get there, and from an intelligence standpoint, we must establish information requirements so we can begin to track them

What in your view is a possible, a credible scenario in which the Army would confront peer competitor armed forces?

I believe the greatest vindication of Army Futures Command would be that that day never comes.

This is, and has always been, about deterrence; it will always be about deterrence. The goal is not to win the future conflict, but to never get into a future conflict. It is hard to predict what might lead us into a major conflict. I don't think anybody predicted the assassination that led to World War I. When the Allies were negotiating with Hitler, very few predicted World War II, or Pearl Harbor. It could be any one of a thousand events that could get us there. But the primary goal has always and remains deterring war.

Isn't that what we believe the Chinese and Russians are thinking as well? They are trying to out maneuver us—to defeat us—without having to confront us militarily?

In a different way, they are achieving many of their strategic objectives below the threshold of war. You can call that grey zone conflict with little green men, you can call that whatever you want to call that. As I said earlier we embrace a very western concept of long periods of peace as the norm, punctuated by short periods of war, whereas most of our adversaries see constant competition, not just from a military stand point; diplomatic, the information space, and as long as they can continue to achieve objectives below the threshold of outright war, what is needed is a whole of government effort to counter it.

Does that lead you to believe the United States should adopt or embrace that kind of world view of persistent competition?

The first step is recognizing that we are in a state of competition, and there are events happening that are making people slowly realize what is happening, primarily through the information space, the diplomatic space, and the economic space. Economics has always been a great power tool.

Based on your experience here with the Army Future Command, what recommendations can

you make for joint professional military education? What insights do you have from this Command that we should be taking into consideration in developing the next generation of JPME?

As I reflect on my professional military education experiences and recall how much time we actually spent thinking about the future, the answer is not very much, if any. We don't spend any time in JPME, thinking about things like quantum; but quantum is coming. A lot of things out there are coming; it's not a question of if. People are scared to death of Artificial Intelligence on the battlefield, imagining The Terminator; but there are so many applications of Artificial Intelligence well short of killing machines, that would be very effective. Despite our fears, our ethical considerations, and the debates that go on, Artificial Intelligence and quantum will come to the battlefield. I didn't spend any time at all in my professional military education thinking not about what is, but about what could be. Yet, thinking about what could be is important if we are trying to reverse engineer things back to what we need to focus our research and development, our science and technology on. Innovation for innovation's sake is interesting, but focused innovation is more important than just innovating for the sake of innovation.

Do you consider that important for the next generation of national security leaders? To be learning to think like that?

The Army undervalues that type of strategic thinking; we undervalue some of the forward looking skill sets. Yet, General McConville—the Chief of Staff of the Army—has said on numerous occasions that you cannot be an analog army in a digital age. But if we are truly going to move into the digital age, it is skill sets like the emerging field of Artificial Intelligence engineering, computer science, and data science that we must develop. Not that we need thousands and thousands of data scientists, but we are going to need some people to

help us move into the information age. The Army is trying. We went through this with the cyber workforce 10 years ago; how do you recruit and then retain a very talented cyber work force? And we will have to do the same with some other non-traditional skill sets.

What kind of insights from your experience here at Army Futures Command would you share with the next generation of national security leaders, the graduates of National Defense University?

I had the advantage of coming into the Army post-Vietnam in the all-volunteer Army and was shaped very early in my career by Airland Battle Doctrine. I went to the captain career course at Fort Benning and it was focused on the emerging doctrine. I spent some time at the National Training Center focused on decisive action training and then returned to Fort Benning and taught Airland Battle. For good reasons, over the last eighteen years, we lost that focus on theory and doctrine and concepts as we have focused almost singularly on a counterinsurgency fight. We cannot lose what we have learned over the last eighteen years. That is one of the lessons of Vietnam; we wished away that problem when we came out of Vietnam.

We cannot afford to wish away low intensity counterinsurgency; it will have to be accounted for in the next iteration of doctrine. We tend to want to focus on that high end fight, and educationally we are going back to that. At the combat training centers we are getting back where we were at the beginning of my career; focused on a near peer fight. We must account for the most dangerous scenarios, and this is happening. For the company commanders education really matters; not just education in a formal setting, but constant self-education, studying some of the things I've talked about, and thinking about some of the things I've talked about. We have been on auto pilot for the last eighteen years. That certainty is gone and we

must prepare ourselves mentally and physically for a wide variety of what could be.

You mentioned the fact that we have been focused on counterinsurgency for the last eighteen years and it's a little bit of a rerun of Vietnam; it seems we are pulling back from those kinds of operations and already a lot of the complex operations centers are closing down replaced by new cyber and AI centers. How do we avoid that same process of forgetting.

I am convinced personally and professionally that we will be involved in counterinsurgency for decades, because many of the root causes of insurgency have not been addressed over the last eighteen years. The Army is standing up Security Force Assistance Brigades that have a counterinsurgency mission. They focus on advising and assisting our partners, and working by, with, and through partners and allies, which will help us retain some of those lessons. The Security Force Assistance Academy at Fort Benning will be the center where most of that knowledge is going to be retained. When multi-domain operations—which is still a concept—becomes doctrine, it will have to account for that modality of warfare. I think world events are going to keep us current on counterinsurgency for the foreseeable future. [PRISM](#)