

Q&A: Lieutenant General Robert L. Van Antwerp Jr.

Written by Harrison Donnelly



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GEOINT ENGINEER: Providing the Soldier with the Best Situational Awareness



Lieutenant General Robert L. Van Antwerp Jr. Chief of Engineers, U.S. Army Commanding General, Army Corps of Engineers

On May 18, 2007, Lieutenant General Robert L. "Van" Van Antwerp became the U.S. Army chief of engineers and commanding general of the U.S Army Corps of Engineers (USACE). He serves as the senior military officer overseeing most of the nation's civil works infrastructure and military construction.

As the USACE commanding general, Van Antwerp is responsible for approximately 36,000 civilian and 600 military employees, who provide project management and construction support to 250 Army and Air Force installations in nearly 100 countries around the world. USACE has a key role in support to overseas contingency operations, with thousands of civilians and soldiers deployed to support reconstruction in Iraq and Afghanistan.

Van Antwerp took command of USACE after serving, most recently, as commanding general, U.S. Army Accessions Command, responsible for recruiting and training thousands of young patriots who represent the epitome of "Army Strong."

A 1972 graduate of the U.S. Military Academy, Van Antwerp holds a Master of Science degree in mechanical engineering from the University of Michigan and a Master of Business Administration degree from Long Island University in New York.

Van Antwerp was interviewed by GIF Editor Harrison Donnelly.

Q: What is "geospatial information," and how important is it to the Army Corps of Engineers?

A: I'll answer the second part first: It is very important to the Army Corps of Engineers, and I'll give a couple of examples. The basic definition, in layman's terms, is that it is any information or data associated with a geographic location, and it also has a time reference. It's got a point in time when it is updated information, or it could be outdated information. That's an important factor. In our world, this could include intelligence information about enemy and terrain, but also, in engineer parlance, it has to do with construction materials, perhaps, or information about buried utilities. A lot of people still think GIS is maps, but it's a lot more than maps. To me, it includes everything that is overlaid information, all kinds of data, and is put in the context of location and time. What this can do in essence is provide a very comprehensive, one-stop-shopping common operating picture. It gives a commander and a leader like myself enhanced awareness of the situation. To have all that information in your head would be very difficult, but if you can click on it, bore down into it and see everything that is there, that's good, actionable information. In the end, that's what we're trying to do—give people actionable information to help them make the right decisions and do the right planning.

We have about 110,000 miles of levees in this country, of which about 10,000-12,000 miles are operated and maintained by the Corps of Engineers. We use geospatial data very extensively to enable effective flood risk assessment of all of those levees and the communities whose risk is reduced because they are behind the levees. Also, we do an amazing amount of dredging in our 12,000 miles of inland waterways. In that case, we use an electronic navigation chart, which is mapping that has bathymetric or depth data. That helps us maintain the waterways for navigation. At any given time, once our survey boats have gone out, you can tell the navigation community what kind of water they have underneath their keel.

A third example has to do with our permitting process. We have a regulatory arm in the Corps of Engineers, and we use this information to give accurate location of a permitted activity. It also helps when we determine the proximity to sensitive areas. If we have done a lot of permits in an area, and it's a sensitive ecosystem, that is very valuable data. Those are just a few of the hundreds of examples of how we use geospatial data and information in the Corps of Engineers.

Q: There is a plethora of programs, platforms and other geospatial technology available to the Department of Defense today. How have they helped, or hindered, the Corps' ability to accomplish its mission?

A: This is kind of a two-edged sword, because there are so many programs that are able to carry geospatial information. It's essential to integrate them so that all the information about a particular place in time is accessible. Given the complexity of that, it will be our ability to exploit that and get the right resolution. If you want line of sight, for example, you have to have very detailed resolution. We have to have something that a battalion commander can say, I've got all the pertinent data that I need right now. When you have so many systems, there is always the question of whether you could get more data—do I have all the information I need? We need to meld these and bring them in, so that we've got one common operating platform for the decision-makers.

Our engineers do a great job. We've got geospatial engineers out there, and they take all of this information to create decision aids. What that means in a lot of cases is that they have to tailor these products to support the unit's needs. It is complicated. Part of what the Geospatial Governance Board, where I am a co-chair, is doing is to get standardization and procedures embedded in our battle command business. We take this plethora of programs and platforms and boil the information down for our leaders.

Q: How is the Army Corps of Engineers working to integrate battle command and geospatial technologies for the commander?

A: We've got our eyes on the commander. If we do this right for the commander, it will help everyone. We really want to get that part right. We have the Geospatial-Enterprise Governance Board, where all services are represented. We have NGA and all the big players in the geospatial world. What we're trying to do is establish policies, standards and coordinating requirements that will ensure the synchronization needed by battle commanders. We have the product developers who are developing the systems and vehicles that people ride in, which have battle command networks, working to make sure we get this right. One area I'd like to highlight is the fact that we're operating a lot in complex urban terrain. We find that there are some products that soldiers and leaders really need which require a very high fidelity look at the situation. For example, if you're planning a helicopter landing zone, you need to know the height of nearby building and walls, and where the rotors are going to go. If you're trying to do line of sight for sniper activities, both offensive and defensive, you need to be able to have the right kind of resolution to see that very clearly. USACE has the Buckeye program, which is providing very high resolution, geometrically precise, high fidelity elevation data to commanders. It has been very helpful in Iraq and Afghanistan. It is being targeted at battle command, and we're trying to make sure we have the right fidelity so that it's really useful information—not just if you have rolling terrain or mountains, but you can really see in complex urban terrain.

Q: Soldiers returning from Iraq and Afghanistan say that commercial off-the-shelf programs like GoogleEarth represent some of the most valuable geospatial technologies available to them. If

this is true, then why does the Army need to develop and deploy comparable systems and geospatial engineers?

A: At the Army Geospatial Center, they're partnering with NGA to come up with the Geospatial Visualization and Enterprise Service, which is Google-like. But we depart from Google in that we have to have much more mission-specific maps and other products. We've taken the best of Google, and then gone to another level, where it becomes really useful to military decision-makers. It includes such things as line of sight, artillery slope determination, helicopter landing zones and transportation safety route overlays. What we're trying to do is to aid commanders in making tough decisions. The geospatial engineers play a very important role in managing this mountain of information, and also to translate that into products that will be useful to the commander and can be overlaid on a geospatial product. We want the Google-like capability, but we want to go much deeper and meet the needs of the commanders out there.

Q: What can geospatial intelligence do to improve military battle planning systems?

A: Geospatial information is a great tool for that, and I wouldn't even begin to go into the planning mode without it. But we've got to help them by getting this plethora of information systems so that they can really be used. So we are engaging the people who are helping us make these products so that we have data sharing on a level we have never had before. We're working hard on the merger of two key areas—operations and intelligence. Actually, there is also a third area, which is the data. For example, if engineers have to build a road in Afghanistan, we need to know where there is "borrow" material— where is the gravel, and where is the source of water? You have to bring that all together. We're working hard on the foundational level. In the old days, we said that was your map, but today the foundation has to have a lot more detail than that to really be useful. It has to be one that you can point and shoot, and get the data you need from an area, and then move on. We have it in our mind: How do we help the planners and decision-makers?

Q: Please explain the Corps' campaign plan and how it incorporates geospatial assets into its services to the warfighter.

A: We developed our campaign plan a couple of years ago. It really is our visioning document, which I talk about in terms of a jigsaw puzzle. It paints the picture of where the Corps wants to go. It's a pretty simple plan, because the best plans are simple. If you can't get it on one page, you probably have too much detail. Our campaign basically has four goals. The first has to do with supporting overseas contingency operations, and also with responding to disasters. We've been fortunate that we haven't had a big hurricane in a couple of years. We're building the New Orleans risk reduction system as a result of Hurricane Katrina, and we want to get through that before we have another major storm.

Goal two is about enduring water resource solutions. We're looking at watersheds like the Mississippi, which you have to look at from Canada to New Orleans. Because there is cost sharing, a lot of that is in conjunction with our partners and stakeholders. The third goal has to do with sustainable and resilient structures. How do we build what we build? Will they be energy efficient? It's all those things I call "build

to last.” The fourth goal is about people—building a bench and building a Corps that will last, which has the people who will set the standard for their profession.

Where does geospatial fit in? It fits well into all of those. If you’re talking about the location of a building, it would be great in the master plan to know where every single building or location is. But the main place where we put geospatial today is under goal one. The goal states, “to deliver USACE support to combat, stability and disaster operations through forward-deployed and reachback capabilities.” That goal incorporates all of the things involved in the Army Geospatial Enterprise. It has to do with enabling expeditionary capabilities, and the ability to reach back to the big organization back here, so you don’t have to have a lot of people deployed, but the right people deployed who can reach back. Then we put all of that on geospatial platforms. For example, we’ve had numerous bridges in Iraq and Afghanistan that have been damaged. So on a geospatial platform, we know the exact location of those bridges. If you click on those bridges, you get pictures that were sent back, the designs of the bridge and then the “as built.” That’s amazing, and that’s where the geospatial fits in. A lot of it is in response to the warfighter, which is in goal one.

Q: Is there anything else you’d like to add?

A: We live in exciting times. I recently spent a couple of days at the AUSA conference, and when you walk the floor of the show and talk to the big vendors and contractors, you see a lot of geospatial activity development. I left there thinking that most of the solutions of what we want to get at are here today. But what we have to do is match the resources up with the solutions, so we can accelerate their acquisition and deployment to the field. The other part is that we have to continually work toward the goal of providing the soldier with the absolute best situational awareness that we can. I’m very confident that the developmental community is getting at this, and the solutions are out there. Now we have to take advantage of them. ♦

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