



Networking the Small Unit Fight

Colonel James G. Riley, TRADOC Capability Manager Soldier, Training and Doctrine, US Army discusses the transformational effect of situational awareness on small unit operations

"We are right on the cusp of solving some of the limiters that have been haunting us since the end of World War Two," explained Col. James G. Riley, TRADOC Capability Manager Soldier, Training and Doctrine, US Army, discussing the lessons learned from Land Warrior regarding the command and control of small units in combat. Instead of simply adding new digitization tools, Col. Riley believes that the Army now has something that allows leaders to very quickly decide what they want their troops to do and to direct that action.

"Today, with some of the technologies that are out there in terms of communications, we have the capability to solve some of the command and control issues that have plagued our tactical formations, certainly from 1956 when we created our current infantry squad organisation which consists of two fire teams." Critically, it also integrates and co-ordinates dismounted elements with mounted elements - infantry carriers as well as tanks.

WHERE AM I, WHERE ARE MY BUDDIES?

"We are going to give fire team leaders Situational Awareness (SA). Within that, the fire team leaders have a display which shows him maps and imagery to give him an idea of what's going on. Every leader starts by asking some very basic questions. The first is 'Where am I? It is pretty significant to know where you are. However, that didn't come out much in training, in fact we never saw it to be that big a deal in test and evaluation. Nevertheless, once you get into unknown country and its dark out, knowing exactly where you are at any one moment is pretty important."

The next thing the soldier wants to know is where the rest of the soldiers in his organisation are, to ensure that the team is working together. Col. Riley said, "In our infantry organisation, you have two separate, mutually

supporting elements. The whole basis for the Army's design is that we believe that the infantry squad has the capability to simultaneously fire and manoeuvre." The Marine Corps believe that starts at the platoon level and squads either fire or manoeuvre and the platoon level where that integration is. In contrast, Army doctrine places that at the team leader level. "This is why this whole aspect of SA is key. In order to be able to fire and manoeuvre, team leaders have to have a comfort level that when you are firing you are not going to hit your own manoeuvring element."

Army doctrine calls for cover and concealment to reach objectives and to conduct the fight. Col Riley explained, "Unfortunately cover and concealment work both ways. You may also be concealed from the friendlies as well but not necessarily in cover. If your troops don't know where you are, relative to where they are shooting there is a high probability of fratricide. Consequently since 1956, when we designed the squad, our tactics and doctrine reflected the fact that we will not lose visual contact between fire teams and fire team leaders. In the Vietnam era we had guys walking in lines, not a whole lot different from what we did in the Civil War, and World Wars One and Two, but this new kind of situational awareness breaks that linkage. Because we have this display, it gives us a pretty good idea of where these guys are in relation to us on the battlefield. The ability to break that visual linkage makes a huge difference."

PRECISION NAVIGATION

Land Warrior and future systems' precision navigation element, promises significant benefits too. Col. Riley said, "The reality is that we [in the infantry] spend most of our time lost. The one time you really know where you are is when you have your map and GPS out. As soon as you put all that stuff away and start walking,

you are on your way to getting lost again, until you make your next stop. We now believe we have got precision navigation, and consequently, updates become much easier to conduct if you don't have to stop, break out the map and flashlight and cover ourselves in a poncho to check your location."

When combined with the ability to post information using graphics and other symbology, precision navigation become an exponentially more powerful tool.

"We also want to know how we are going to get there. In this [the 4/9Manchus] came back with the idea of the Digital Chem Light themselves and consequently, this 'breadcrumb' method is alive and well in the digital world. We can quickly manoeuvre from point to point to where we want to go."

WHERE ARE THE ENEMY?

Networked fire team leaders have the ability to simply update their situational awareness. Every leader shares the same graphics, the lower in non-Land Warrior formations you go, the less maps are in evidence. Almost invariably no team leaders have access to digital graphics and certainly not to the Land Warrior level of detail. What is even more important, is that everyone also knows that plans typically do not survive contact but when that happens, the plan can be updated rapidly and distributed to all concerned almost as fast, something shown during operations by the Manchus in Iraq.

"When the enemy moves - funny how he does that - we were able to very quickly redirect troops to where the enemy is now, using very simple control methods - point and click - to reorient the force. Changes to plans happen in seconds to minor minutes. Without this technology, what usually happens is that we have to bring all the leaders together and we smooth out a little piece of dirt and draw a picture. Now we can send



Every leader starts by asking some very basic questions. The first is "Where am I?" © DoD

updates almost simultaneously to all leaders on the mission. To have this network enabled capability it is huge. With precise navigation and SA, this is the beginning of Dynamic Battle Command."

Depending on how easy the user interface is, soldiers can also use it in contact. Col. Riley gave an example of a recent operation by the Manchus. "A squad entered the objective and took fire from a sniper location. They quickly marked that point with the Digital Chem. Light which focused the organisation on that location. Their Stryker vehicle knew that, even though they didn't have a field of fire. That C2 piece for small unit leaders allows you to focus combat power very quickly."

The network also allows information to be accessed from higher up the command chain. It has already been used to integrate network enablers to further expand the element's tactical options. These have included the FIDO MARCbot IV UGV as an IED detection sensor, the Boomerang sniper detection system, Dragon Eye thrown wireless cameras, Raven UAVs and the Telescopic Pole Cam.

Col Riley said, "Sometimes there are tactical dilemmas that require additional access. This is what we see these enablers doing - using the base technology that is resident in the networking capability then, when the situation demands, we have these other technologies we are looking for that help us solve those anticipated tactical dilemmas. Being able to integrate that information near simultaneously in seconds to minor minutes, into the understanding of that small unit tactical leader gives him the opportunity to solve that tactical problem very quickly."

Col. Riley used the example of Objective Pasenda, 20th August 2007 in which elements of the 4/9 Manchus were able to rapidly locate and engage an enemy bomb making cell located in a house.

"This was a target of opportunity, there was no big plan, no pre-existing graphics, the objective was marked based on intelligence and identified with a single Chem Light, it allowed the platoon that was in the area with a different mission to reorient, converge and execute their assault." When the unit arrived, this prompted a reaction from the target that was only visible to the higher echelon commander who had access to a Predator video feed. He placed a new Chem light and directed the platoon commander via graphics and voice communications. Col. Riley added, "That was incredibly more precise than trying paint a picture over the radio. The platoon leader changed his plan and prevented the enemy from the escaping."

"After they cleared the building they changed the Chem. Light from red to green, an amazing capability for that organisation. We have had tremendous problems over the years in marking a cleared building. Now, a leader, with a digital capability who knows a building is clear can mark it." ■