Three Questions that Defined the US Army Signal Corps

By: Barry Lee Clark, Major, USA, Retired

Several years ago, as a Captain assigned as a Signal Observer/Controller-Trainer (OC/T) at the National Training Center (NTC), I had the opportunity to have a discussion and ask three questions of the then General in command of the Signal Regiment and his Chief Warrant Officer (CWO5) and Command Sergeant Major (CSM). I will not provide the date of this occurrence, as it would identify these three individuals. My words below will not be flattering to them.

The Backstory

I had served as an OC/T at the NTC for several months. In my role, my team and I trained and coached every Signal company that rotated through the Combat Training Center (CTC). Between us and our counterparts at the Joint Readiness Training Center (JRTC) in Louisiana, we essentially trained all the active duty Signal Companies in the Army and several National Guard companies. In my time at Fort Irwin I saw and trained 33 companies.

This was in the heart of the conflicts in Iraq and Afghanistan and the training at the NTC was Counter-Insurgency Operations (COIN) based. This was before the birth of the Cyber branch and Electronic Warfare (EW) was something the Army had essentially forgotten and was just relearning. Of note during this period we Signal Trainers were coaching and mentoring units in the use of the available EW tools and in the collection of the data those tools acquired, we collaborated with the Intelligence community in that collection. There were already systems in place to execute that mission. These were simple devices really, CREWs and DUKES, intended to protect convoys from improvised explosive devices (IEDs), but that was EW in a brigade combat team (BCT) at the time.

A couple months prior to the visit the Intelligence trainer and I had co-written a white paper on our observations of EW and suggestions for the future.

The General and his entourage had come to the NTC ostensibly to get a feel for what tactical unit Signal training looked like. I was excited by this. I had two burning topics and questions I had to ask them. He had lunch with us in the desert, drove around a very little bit and scheduled a dinner with us that evening. He observed very little Signal related training.

What he did make a point to do was tell us all at lunch that the Signal Corps had no role in EW. That was going to the Field Artillery he told us. At this I was confused. This generated an additional question that I had to ask these three.

The Conversations

The General's proclamation at lunch had created a new question and thrust it to a priority spot on my list. At the first opportunity that I was alone with him that afternoon, I launched into my question/plea for a reconsideration and/or explanation.

I do not recall my exact words but that were essentially these:

"Sir, I do not understand why we have no role in EW. We own the spectrum, we have the people trained to understand RF and RF equipment. We are just beginning to make headway in driving collection of threat data from CREWS and DUKEs. Why is the Signal Corps not the logical place to execute this mission".

Reasonable question it seems, the man certainly was not pressed for time, and he had only been at the current site for about five minutes. One might expect some sort of reasonable answer that addressed the question even if in the answer he chastised my boldness for asking.

I recall his retort exactly, "because we have other things to do". With that, he was off.

I was miffed, perhaps not a little bit angry. Yet I still had a passion to see through my other two questions.

I caught the Regimental Chief Warrant officer alone a bit later. In my time at the NTC I saw one BCT after another struggle with FM retransmission sites. To me, the idea that in the late 2000's we still had to send a team of Soldiers to a hilltop to sit with a set of equipment that was little changed in 20 years was absurd. There were and are smarter, more effective and efficient ways to do this and at the very least the Army should field a kit with more capability. I wanted to ask the Chief what the smart people back at Fort Gordon were working on.

His answer to me, and I also recall this with exact detail, "the Army is not concerned with voice communications right now, we are working on WIN-T". He was ready to walk off too.

I was pissed at this point and not willing to let him get away so easily.

I retorted that he may not care about voice communications but that was the backbone upon which brigades and below fought. He walked off.

I was required to attend the dinner that evening. I had almost given up on these three, and I certainly avoided both the general and his warrant officer that night.

While at the bar ordering a beer the Regimental Sergeant Major strolled up beside me to refill. As we waited I decided to ask him my third question.

It went like this:

"Hey, Sergeant Major, are you aware that none of the young 25U (radio operators) nor almost any of the NCOs know how to operate the HF radios or the 117s they have on the books? These are powerful tools that could really help reduce the requirement to send out retrains teams. Is the schoolhouse working to change the courses to fix this?"

He looked down at his newly arrived beer, paused for a moment and replied:

"Sir, the last two Sergeant's Majors in my position marketed their Rolodex for $100K, I am retiring and will do the same."

I responded with "that is fucked up" and walked off.

The Impact

Fast forward a few years and the Army has an entirely new branch, The Cyber Corps, performing a mission that was once a Signal and Intelligence Mission. Within Cyber resides the EW function (after a foolish failed attempt to shove it under the artillery). With this new branch comes an enormous cost in terms of duplication of billets, essentially now we have duplicated every civilian and staff billet at Fort Gordon that existed in the Signal School with a cousin in the Cyber School. Doctrine is a mess as everyone wants to write about Cyber but fails to clarify where defensive cyber operations end, and network security begins (hard to see the real difference if you take the words at face value). EW exists now as a nebulous independent enabler, without the maturity to have a real seat at the table or a mechanism for commanders to really understand how to employ it. Within the EW world exists a tangible disdain for the Signal Corps and this is obvious in the desynchronized way that we defend ourselves from RF detection.

We created more structure, more bureaucracy and more cost to do the exact same thing we could have done before if we had Signal leaders that had a vision.

So who were these three men I talked to? Men who were in a position to influence the future.

The General

I do not know, I cannot know if the general was simply told by higher that EW would be given away to the field artillery or if he lacked the vision and understanding to grasp the impact of the decision. Did he know that the Cyber Corps was coming? Was that his vision?

I assume based upon the timing of our conversation and the timeline of the creation of the branch that he certainly did know Cyber was coming. Was he opposed? I cannot say but he certainly was not taking overt and obvious steps to stop it if he were opposed. He, in fact, seemed to be setting the stage for its existence.

Consider this, in 2016 the commander of Cyber Command, Adm. Michael Rogers stated;

> "You have some advocating, 'is cyber so different, so specialized, so unique, so not well understood that it requires a very centralized, focused, unique construct to how we generate capacity and knowledge?' There are some who make that argument. I am not one of those,"[1]

The admiral was talking about a separate military branch, like creating the Air Force in 1947, but the logic applies equally well to a branch within the Army. Is/was Cyber so very different than functions already done in the Army? Is/was the knowledge so different than functions conducted in other existing branches? The Signal Corps owned the spectrum, the Signal Corps historically had the responsibility to defend the network, the Intelligence Corps has a history of performing signals intelligence and collection, we have doctrine for targeting and effects. It would have been too logical to

dust off the old doctrine -prior to the GWOT – rewrite it and synchronize these functions among existing branches. It is illogical to create additional structure, with the incumbent waste, little personal empires and desynchronization. Yet that is what we did, and this guy was at the head of the ship as we headed toward the iceberg.

The Chief Warrant Officer

His words that the Army was working on WIN-T and voice communications via FM were not important left me perplexed. I saw a slide presentation of what was to become WIN-T in the late 1990's. It was someone's concept of a terrestrial network that did not look a lot different than the old MSE, just updated and digitized. One must remember, this was the best that the big brains could come up with at the time, a clunky system that required a system of cumbersome UHF antennas to function. At the time I saw the slide wide-band satellite technology was becoming more mobile, but the "T" in WIN-T did not include that at first, originally it meant "terrestrial". At the time I thought "why!"

WIN-T was a beast thrust upon the Army by people that did not understand what mobile, agile brigades really needed. What the Chief was referring to is the land yacht pictured below.

This item was/is both the laughing stock and bane of maneuver commanders and after several billion dollars and almost 17 years of development, the Army finally decided to scrap the program.

A quote from Foreign Policy Magazine sums it up,

> *The sudden demise of the system, known as the Warfighter Integrated Network-Tactical (WIN-T), which was until recently the Army's top modernization and development priority, underscores larger institutional problems evident in how the Army buys equipment*.[2]

Perhaps more accurately the failure of WIN-T to both meet the operational needs of commanders and provide defenses against hacking and electronic warfare speaks directly to the sort of people and thinkers that have occupied positions of power and influence within the Signal Corps. The Chief I spoke to in the desert that day was certainly among that group.

What is needed at brigade and below is a way to shoot, move and communicate in a secure and agile fashion. To be certain we need data, but the real problem with WIN-T is that it drove our understanding of Mission Command to mean systems instead of a philosophy. We bought a bad transmission system and network that provided a lot of bandwidth and subsequently developed mission command systems

that some think we cannot fight without that sucked up all that available bandwidth. The cart drove the doctrinal horse.

In a quasi-real war, fighting guys that improvise explosives, use cell phones to communicate, cannot maneuver against us in real formations and have almost no EW capability the deficiencies of WIN-T were not apparent to most.

To the Chief and people that thought like him sitting at a desk looking at slides and talking about future systems, the important aspects of a brigade fight were nonexistent.

The Army still uses an FM radio system developed in the 1980's. Our configuration and kit are little changed. The way we employ these systems and the requirements to send out retransmissions teams is essentially unchanged. Some of the features have improved, the software has been updated but nothing has really improved. Why?

Vendors like Harris and Raytheon have self-developed radios along the periphery of Army requirements that offer promise, some like the AN/PRC 150 we have made programs of record and others like the 117G we have simply bought as a stop gap. Two problems exist here. First, the only real requirement the Army has come up with for new radios included the failed WIN-T capable waveforms. This hampered innovation and took what had the potential to be a powerful radio (the 117G) and made it vulnerable to EW and Cyber threats. Second, all the other real innovation by these companies aligned closely to existing systems that they thought the Army would buy – nobody on the Army side seemed to be looking for a new solution or thinking with innovation, see Chief's own words above.

The Command Sergeant Major

We might excuse this man to some degree, traveling around with twiddle dee and twiddle dumb as an "advisor", yet it is not so simple. He displayed no passion for a very real problem, one that continues to this day.

I recently completed an assignment observing a rotation at the NTC as a contractor. The exact same deficiencies I spoke with this man about so many years ago still exist with the 25U population. Same problems, unchanged!

He knew, and he should have been mad, he should have raised a fuss even if he could not change it all alone.

Instead, what he did was exactly what he said he would do.

I see the man very often, at any charity function, ball, fundraiser or Fort Gordon related event, there he is, grinning and gripping like a used car salesman. Knowing what I know it disgusts me.

The Operational Environment

These three men did not and do not exist in a vacuum. I could list a cast of characters that seemingly did nothing to sense the coming requirements or steer the ship right. There is also the almost undeniable fact that Fort Gordon itself is just a weird animal – some people begin camping out there during their

career, forgetting what the real Army is all about, and then retire and become civilians working and directing projects and initiatives. This is common knowledge if not commonly acknowledged.

Then, of course, there is the fact that perhaps the Signal Corps itself gave birth to these sorts of wrong thinking people. In my 33 years in the Army, I came across all sorts of officers and NCOs from every branch. I assert that the Signal Corps produced some of the worst officers in the Army – bested for that dubious title perhaps only by some Transportation Corps and Aviation officers (medical and legal folks excluded from that evaluation). The three most incompetent senior officers I ever served with were Signal Corps (either narcissistic, incompetent or had broken moral compasses). The Regiment certainly produced many exceptions to that picture over the years, but generally, and I think maneuver guys would agree, these were the exception and not the rule.

Was this fact a factor is the creation of the Cyber Branch? Did the general but unspoken view of the Signal Corps indicate that the Regiment simply could not take on a more dynamic mission? Perhaps. Sadly, and it can never be proven, this is a very likely scenario.

Will the creation of the Cyber Corps avoid what was likely the fear of the ineptitude of the Signal Corps?

Unlikely, the Signal Corps had the advantage of having some real Soldiers within the Regiment to balance it out a bit. What will become of a bunch of super "special" computer geeks over time, mostly locked away is windowless secure facilities? We do not know but we can suspect it will not be a very Soldier-like outcome. We have taken something that was not unique or special or that different and further isolated it from the true warfighter.

The Cyber Branch was a mistake but it provides an opportunity for the Signal Regiment and the Army.

So where is the tactical Signal Corps right now? When I compare my observations of Signal companies and Soldiers from my time at the NTC to the rotation I recently observed I see very little difference.

Our officers fail to:

- Understand their role in MDMP and proper integration with operations.
- Plan agile and redundant networks that keep up with and support the commander's scheme of maneuver.
- Establish Signal common operating pictures (COP) that help them visualize and plan.
- Anticipate failures of a particular plan and develop courses of action (COA) to mitigate.
- Fully understand the needs of the warfighting commander.
- Leverage all the systems available to extend services.
- Fully understand that they are the voice of the command and the chief enabler of mission command systems and all that implies.

Our 25U Soldiers and NCOs

- Lack basic Soldier skills required to operate on hilltops and remote sites. (troop leading procedures (TLP), pre-combat checks (PCC), pre-combat inspections (PCI), field hygiene, range cards, laying sectors of fire, coordinating with elements left and right, call for fire, spot reports, establishing an LZ) – all skills required to establish successful retransmission sites.

- Cannot operate HF radios, do not understand radio propagation principles and cannot build expedient antennas.
- Often have only a basic understanding of the operation of the SINCGARS radio.
- Do not understand the principles of site selection, (terrain making of visual and electromagnetic signatures).

The Future

The Signal Corps has an opportunity at this point to redefine itself and reassert its relevance and contribution to the fight. With the birth of the Cyber Corps, we can free ourselves of those that seek to be computer guys first and Soldiers second. We can rid ourselves of the sorts of people that have created such a negative image of the Signaleer.

In my opinion that the future lies in the lower tactical internet (TI), voice and data.

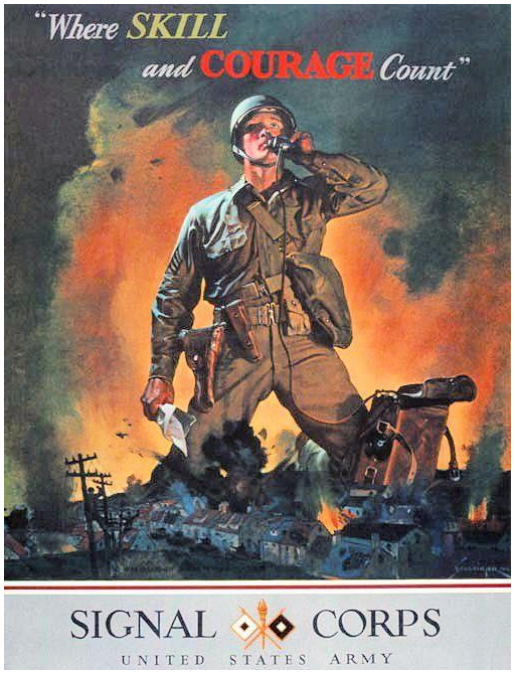
As we transition back to direct action, force-on-force training maneuver commanders are already demonstrating their willingness and desire to untether from large tactical operations centers (TOC) and cumbersome mission command systems and WIN-T. They know they can issue mission orders and execute with voice and data products using lower TI.

Systems development, MOS structure and training within the Signal Corps should focus on that. This is what the Army needs from us in the fight ahead.

Specifically:

- Develop multi-band radios that securely pass the maximum amount of data possible at line of sight (LOS) ranges and beyond line of sight. Avoid the failed attempts at using WIN-T waveforms because they sacrificed range for bandwidth. These systems must operate 40-60km LOS and over 200km BLOS and be hardened to counter EW threats. Ideally, the tactical signal systems of the future are embedded seamlessly into combat and command platforms so that they are mobile and funtion at-the-halt and on-the-move. What we cannot do is fall into the trap of sacrificing range for bandwidth as we have done in recent efforts.
- Divest of transmission military occupational specialties (MOS) at the tactical level, putting up an antenna or aligning a satellite dish is a task easily done by the system operators.
- Re-focus officer training to make them members of the BDE team that are capable of enabling the fight but truly understanding how to emplace, move and manage mobile systems.
- Redesign the 25U (Signal Support Systems Specialist) MOS to make them the premier "universal" Signal Soldier the should be, technically and tactically proficient – yes the course of instruction will have to be extended but this is the right thing to fix the deficiencies with this critical skill-set. Do this right and include enough training and this should be the only MOS at the tactical level.
- Stop allowing strategic Signal Soldiers or those that have camped out at Fort Gordon to determine the destiny and character of the Signal Regiment – reward and promote those that spend more time in the real Army and succeed.

- Divide Signal MOSs and officer AOCs between those that will serve in strategic units and NECs and those that will serve in the division and below – make a path for tactical guys to get promoted. Crossing over from strategic to tactical should be rare.
- Abandon any thought of bringing back the divisional Signal battalion. For all the good it did managing maintenance it did more damage separating Signaleers from the warfighter. We should be developing communications systems that embed in combat and command systems, not separate from them. We need small, agile teams of skilled Soldiers to plan, employ and maintain those systems. Not the cultural abyss and waste of a Signal Battalion.
- Teach the fundamentals, radio propagation, EM defense and masking, maneuver doctrine, some netwoking and basic Soldier skills.



This is the Signal Soldier we want to develop.

An excellent place to begin in the short term would be to rewrite TC 6-02, *The United States Army Signal Corps Signal Training Strategy*, to add a chapter that specifically addresses tactical skills that are so deficient at present in Signal Soldiers assigned to brigades. This volume, published in July of 2018, goes far down the road in many sections toward getting after many problems but it is still too certification and computer-focused – it simply fails to address the elephant in the room. The addition of a chapter on Soldier skills would help begin to shape the culture of what the Signal Corps should become. [3]

Conclusion

Perhaps the events of the last few years, the usurpation of many Signal Corps roles by the new Cyber branch and the failure of our multi-billion dollar WIN-T dinosaur, will serve as a clarion call for real

cultural, organizational and structural change – perhaps we will realign systems development, training and MOS structure to the warfighter – and stop being Signal geeks.

This is not a foregone conclusion, there are those that firmly believe that we simply should make a better WIN-T. Many of these people fail to see how WIN-T and the bandwidth hogging mission command systems developed to utilize it fundamentally changed the philosophy of mission command from *auftragstaktik* to something more laborious, tedious, rigid and controlling – something that some people believe revolves around computers, systems and the ability to control the action from far away. This is not at all what mission command meant when the British first copied it from the premier practitioners, the Germans. We have ruined a great philosophy with a systems approach and WIN-T played a large part in that.[4]

The Army and warfighters need data at the tactical level. I am certainly not advocating against such nor for a return to wig-wags. I suggest that our systems should be smaller, embedded into combat and command systems and that any mission command computer system we plug into these devices should operate within the confines of what we can securely provide, over range, in the RF spectrum (terrestrial LOS, BLOS and satellite). I am suggesting new multiband radios that support commanders with all they need without the need for separate Signal equipment within the brigade. I am suggesting robust, tactically and technically Signal Soldiers to maintain and plan those systems. This is the way ahead that I hope the powers that be forge for the Signal Corps.

About Barry:

Barry spent just over 33 years in the Signal Corps, enlisted and officer, retiring from Active Duty in 2018. For those inclined to dismiss his words because "he was merely a major and probably passed over" the later part in untrue. Retirement came just months before the first LTC board, it was a choice.
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Endnotes

[1] Pomerleau, Mark, Defense Systems, January 21, 2016, https://defensesystems.com/articles/2016/01/21/rogers-cyber-doesnt-need-to-be-separate-branch.aspx
[2] https://foreignpolicy.com/2017/11/21/army-looks-to-replace-6-billion-battlefield-network-after-finding-it-vulnerable/
[3] TC 6-02, The United States Army Signal Corps Training Strategy, https://www.signal-chief.com/wp-content/uploads/2018/07/TC6-02x1.pdf
[4] Muth, Jörg, "An elusive command philosophy and a different command structure", Foreign Policy, September 9, 2011, https://foreignpolicy.com/2011/09/09/an-elusive-command-philosophy-and-a-different-command-culture/