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2 July 2008
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## Abstract

(b)(3), (b)(6) has had a normal Signal career.  He was in Saudi Arabia on 9/11 and describes the events.  More personnel immediately created escalating communications demands.  He describes the analog Army he knew in the mid-1980s, just before automation really began, with administrative sections in the companies, and cash payment and checks.   Signals then and now.  Signal in Iraq has evolved tremendously since 2003.  The surge and getting off the FOBs meant we needed more comms out in the COPs.  We commercialized the network by burying fiber optic cable. We now have to expand the microwave architecture.  As we met the surge demands, the focus shifted to helping GoI build up Iraqi communications capacity.  We are working with Central Command on Records Management, which has become a huge issue.  Signal Corps force structure has changed tremendously, with the Corps losing their signal brigade headquarters and the divisions losing their signal battalion headquarters.  The companies have been dispersed to the brigades. 1:17:12.

## Interview

The key issues I've dealt with include FOIA, the commercialization of key architecture, Knowledge Management, general concepts of communications in an asymmetric fight, and Signal Corps structure.

## 1.  What is your professional background?

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## 2. Describe the events of 9/11.

4:30 I was on the CAOC floor assisting a system administrator who was troubleshooting a system on the floor. CNN was up one of our displays on the floor, a 12' x 12' screen. Somebody . . an NCO looking at the screen, and somebody said a plane hit the Twin Towers. In my mind, I figured it was Cesna or something. I looked up in time to see the second plane hit. That dramatically changed what we were doing at that time. There was silence on the CAOC floor, staring at the screen, and listening to the monitors, and that kind of continued for days, with CNN, and it was a constant barrage. Things became very somber for days. And when planning started associated with OEF, then it all became very busy. Prior to that, we could go into Riyadh. It was hard to go there for shopping once we'd gone to Al kaz?, but after that we were locked down.

The immediate impact we saw at 9<sup>th</sup> Air Force, which comes out of Shaw Air Force Base, was a significant increase in personnel. It was apparent that this was going to change operations, and it was clear we would do more than just OSW and monitoring Iraq. The impact on me and my crew, with the increase in personnel, was a vast expansion in communications systems, NIPR, SIPR, TBMCS, computers, UAV coverage, network troubleshooting, expanding, monitoring air space, doubling systems, etc. So there was a fast and dramatic increase in systems, bringing them onto the network, trouble shooting interoperability issues from new programs that hadn't had the time to go through the appropriate joint interoperability testing before being put into the network, expanding instead of just monitoring airspace over Iraq, we were now monitoring airspace over Afghanistan, and almost doubling the communications systems that we had on the floor so that the leadership could execute battle command in two areas of operation.

## 3. Describe the Army and the Signal Corps you joined.

10:00. In 1986, when I was a second lieutenant, we were an analog Army. Our communications systems, we weren't using data systems, very little automation. My company did not have a computer. The system that the Army was using for division and corps communications was an analog system, and it was voice switching system. MSC was being developed, but it hadn't been fielded yet and was probably five years from fielding, so this pre-dates mobile subscriber systems. It was not the computer on every desk that you see today. The first computer my company saw was a TACKs box for personnel data. It was the size of a footlocker, with a 286 processor, and that was when we first started putting in personnel data on it. The C10 report was on it. Then, as a company commander, we began getting the 286 computers, the Zeniths that were starting to populate the force. Prior to that, we didn't use email. The bulk of our information exchange between the company and battalion and brigade was over the telephone or the fax machine, and older type of facsimile machine, and then typed documentation that was sent through distribution systems. So as a lieutenant and company executive officer, we would have stacks of paper correspondence, put in franked envelopes, addressed to who it was going to at battalion with a DA Form 200 on it, so they would sign for it and we would have our acknowledgement of receipt, so when we were sending awards or reports, it was paper and a manual tracking system. Now we've completely

gone to automated tracking systems with electronic signatures for forms.  So over the 22 years there has been this tremendous growth.

### How did being an analog Army impact organizational structure?

13:20. We had a lot more administrative personnel.  As a company XO I was responsible for the orderly room with a staff sergeant, two sergeants, a couple of specialists, and this was at company level, just managing the day-to-day administration at company level for personnel management, awards, records, having to work with the Personnel Services Company in an analog, paper-driven Army that was labor intensive.   Now, when I was a battalion commander in 2003, companies don't have administrative personnel assigned to them.  So if they're going to have . . . they may have a shadow clerk.  If they have an MOS in which they're overstrength, or they have somebody that is particularly good skills administratively, and they'll pull him out of a platoon up to the company to work for the first sergeant, one or two.  Where when I was a company commander, I had an admin section that did all that for me.  There are still some things that people need to do with the management of information, but it is all done from within.

### For Finance, do you remember getting cash payments?

15:10. I only got cash payments when I went to basic training.  When I graduated from high school in 1982, I went into the Army Reserves, into the simultaneous membership program, ROTC commissioning.  So when I went to Basic Training, I got paid in cash.   After that,  I got paid with a check, a paper check.  And by the time I went onto active duty, they were starting direct deposit.  That was 1986.  Today, it is a much more reliable system and user friendly with more user interface.  Initially, you were afraid to make any changes because if it got messed up, it would take months to fix it.  Now we make changes easily in DFAS from any computer.  [More on this I've left out]

Finance is flattening their organizations, with personnel savings, which helps the Army's modernization and freeing billets to make more Brigade Combat Teams.  Signal Corps has been a bill payer, Finance has been a bill payer, but the proliferation of automation has affected all the services  . . but we need more BCTs to meet the requirements today.  My career has been . . . and a lot of the tasks that I have had to perform as a signal officer, relate directly to the evolutions in technology with computing systems and communications systems as they became digitized.

19:00. In communications, we've gone from the VRC 12 series of radio transmitters with KY57s and power amplifiers to SINGARS, a digital system, from analog repair issues to network troubleshooting.  Time between repairs was not as good as it is today, and we couldn't pass data traffic like we can today.  The guys who were building MSC in the '70s could not imagine the digital systems we have today.

### 4.  All this automation is very impressive, and it seems to belie critics who claim the Army has not transformed since the end of the Cold War.

21: 38.  The evolution of communications systems has kept up with the evolution of communications technology in the civilian sector, following Moore's Law.   As we have incorporated all these automation developments, the systems for pushing information have also evolved.  The computers are storing and

routing this information.  We are storing terabytes of data here.  The impact is, in certain realms, is it has allowed us to cut down on the number of people.

As a lieutenant with a strategic signal company, my commander attached me to a maneuver battalion (4th of the 14th out of Bamburg) to work with the battalion CESO for a REFORGER exercise.  We had two Rat Rigs with wire strung everywhere, to higher and to each subordinate company.   We had trucks dedicated to carrying wire and soldiers to string it out and repair it.  We don't do that know because we have digital systems, SINGARs, to handle all that, more automation.  The need for all those signal soldiers went away.  If you looked at all the branches within the Army and the proliferation of information technology, you would see that the soldiers that they have doing some aspects of communications, we've pulled soldiers out . . . young soldiers coming into the Army today have computing skills and understand networking, so we've reduced soldiers doing CS and CSS tasks, and those billets have now gone into CA billets.

Whoever thinks that needs to explain what they mean with specific examples.  That may apply to the Defense Acquisition processes, but it cannot be said of force structure.   The Army has used automation to get rid of administrative positions and finance positions.  [wss: I knew a LT in the '90s who as an enlisted soldier served on a field artillery surveying team, and GPS has enabled the field artillery to get rid of all its surveyors]. Exactly.  And all those savings have gone into war fighter billets, to more brigade combat teams.

## 5. How has the signal situation changed in Iraq since 2003?

31:15. There has been an evolution in the Signal piece.  From 2003 through 2005, there was an extremely large network here built around mobile subscriber equipment.  In the past, signal brigades had three to four battalions.  In Iraq, the mission in Iraq took many more battalions because the networks were far larger.  The Signal corps had never seen networks that big.  Since then, we went through a shift in the communications systems.  As the fight became FOB centric and asymmetric, we've off-ramped signal battalions.  Now, it is predominantly a satellite-based system.  It used to be terrestrial based.  All that means few signal assets.

With the surge in 2007, there was a surge of installation requirements.  The 3rd Signal Brigade needed comms right away, had to get it out on the COPs and FOBs.  It took an effort to commercialize it.  Going from tactical to commercial means digging it in, or burying the fiber-optic network.  When I arrived in July 2007, we were already pouring resources into commercializing it and putting new fiber in around the FOB.

We have done an Operational Needs Statement to expand the microwave architecture.  We've done this because satellites have some delay and microwave is faster.  We are trying to increase capacity and expanding SIMs (?).  We're working with the GoI Ministry of Communications on host nation comms. We want them to build up their capacity.  We provide more of a motivation to build up their systems by leasing capacity from them.  It helps all their comms.  The weakness right now is that every Iraqi ministry is currently developing independent initiatives rather than a coordinated government-wide project. We're trying to help them integrate all their efforts.  If we could convince them to work together, they would gain efficiencies.

42:45. To that end, BG Spano organized the Iraqi Communications Coordination Element (ICCE) in November of 2007. It is a communications fusion cell. CJ6, we stood that organization up. We're using borrowed manpower from CENTAF to work with the Minister of Communications and others to promote these initiatives. In the evolution of what we do, it went from not having the personnel or intellectual capacity needed to meet the COBs and FOBs needs, to reaching their requirements with a mature and reliable architecture thanks to the resources provided to bury the fiber and emplace the communications nodes, to the next step of helping the Iraqis build their communications systems, which will further enhance reconstruction, reconciliation, and helping the Iraqis rebuild.

## 6. Are there ways in which our need for capacity bumps up against Iraqis building their networks?

45:30. This is about spectrum and frequency management. We both use VHS, satellite, and high frequency channels. We are currently using everything we've got. We would have to buy more satellite time to expand further. As the ISF grows, they need more of the spectrum. The civilian cellular telephone systems have expanded, and this creates still more demand for spectrum, and broadcast spectrum as well. We have to be very creative to manage it all.

## 7. What does the FOIA program consist of?

51:20. We have two contractors and 1 Air Force master sergeant doing FOIA. Central Command sends us the requests. Requests come from private citizens, from media organizations, and from companies. They cover myriad topics and seek all kinds of information. The FOIA guys take each request, determine who the subject matter experts are for it, and request the information, whether it comes from BUA charts or where ever. The get the information back and they have rule charts for determining what can be disclosed. They redact information as necessary. They read volumes of information and would make very good interviews.

## 8. What is Records Management?

56:45. The Joint Staff is just beginning to realize we need to make sure we're doing Records Management within MNFI. Records Management is a subset of Knowledge Management. Records Management is the process by which we archiving records and then associate those records with the appropriate metadata so that it can be maintained for historical purposes. We just recently had a team from Central Command visit us. We in CJ6 need to start bringing it to fruition. Central Command has to do likewise. So Joint Staff has basically has said COCOMs have to start Records Management. Central command is working on its Records Management program, and we in MNFI have to do the same. In the old Army, we had the old Modern Army Record Keeping System. I remember as a lieutenant keeping all this stuff filed with file numbers.

Automation has overwhelmed records management. What is a record: a Power Point brief, or a draft Power Point brief, or an email? The concern is about documenting the way . . . Today, we have large data stores.

There is a concern above MNFI of documenting the war for historical purposes.  Where we are right now is we have large data stores of documents on storage servers, but how much of it . . how much was created in 2004 still exists, I don't know.  The closer you get to today, the more there is.

Knowledge Management now is a Share Point System.  Texting and IM fall under KM.  Share Point is it right now.
*I've skipped through a lot of this.*

## 9. What has happened with Signal Corps structure?

The Corps Signal Brigades have gone away. Every Corps used to have its own Signal Brigade.  The divisions have lost their signal battalion HQ.  The companies have been folded into the BCTs.

In the past, communications down to battalion level was push to talk, radio and wire.  It was functional computing.  Now, we have COPs with companies and troops that require NIPR and SIPR at that level.  We are pushing computing down the echelons.  The BCTs lack structure for the command post nodes, so we've had to cover that.  The communications architecture has evolved.  The 11th SIG BDE's signal battalions are pushing teams out.  This effort has extended beyond organic assets.  It is all pushing assets out.
1:11:00. the next war may not be like this, plus we have a limited budget and a limited number of personnel.  We have to deal with that.
After Desert Storm, it was clear to everyone that our terrestrial based MSC network could not keep up with the battle.  We had to have satellite based systems, and have them in the divisions and the brigades so that they could keep up with the battle.  Now, with this new paradigm pushing so many coalition elements off the FOBs, that expands the communications demands even more to more locations.  This is something the Army and the Signal corps have to deal with, but we have pressure to reduce the boots on the ground, the demand for signal soldiers.

## 10. What questions should I ask BG Spano?

1:13.
1) What is the state of communications support to MNF-I, from a Joint perspective?  How well is it meeting the user's requirements?
2)  I would ask him what his areas of focus are for the CJ6? Where does he want the communications community to go for support to MNFI?

## 11. Who else would you recommend I interview?

1:14.  You should talk to _____(b)(3), (b)(6)_____ of the 11th SIG BDE, which is under MNC-I, and (b)(3), (b)(6) ____(b)(6)____ of the 40th Signal Battalion, which is TACON to MNF-I.
We have a strange organizational structure, and a complicated one.  The professionalism of its leaders makes it work.  *There are details on the structure I did not transcribe.*
1:17:12