National Training Center: Success tips for Battalion Signal Officers

By MAJ Michael S. Ryan

This article provides battalion S-6s throughout the force with 10 simple tips to aid in both the execution of a National Training Center rotation or deployment into an active theater of war. These tips are based off of the observations of the Signal observer coach/trainers over the past year of rotations at the NTC. It is by no means an all inclusive checklist for success. But it does provide a quick set of tips to keep BN S-6s from running into the same frustrations of previous BN S-6s.

Those of us working at the NTC gain interesting insights into the force. We get to see the best that the Army has to offer and execute some of the most realistic and challenging training available to the brigade-sized elements. As units move through their exercise we gain an appreciation for how adaptable, flexible, and motivated our Soldiers and leaders are to accomplish the mission and get it right.

Every unit has its own unique set of challenges as they prepare for and then move through the training area. No one unit is an expert in every facet of operations. Therefore it is possible to assemble a short list of common problems that challenge almost every unit during their rotation at the NTC. These are some of the common trends and frustrations faced by many of the units.

1) Know your unit

One of the most common frustrations that S-6s have upon arriving at the National Training Center is that they do not have a clear picture of all of the communication assets within their units. It can take several painful days working long hours for the S-6 to gain a true picture of all of the assets within the unit. As the Army continues to move towards a fully digital, networked information based force, this task gets even more difficult for the S-6.

It is no longer enough to just know how many radios, antennas, computers, and printers are in the unit. The S-6 has to track the software version, MAC and IP address, LDIF role name, interoperability, compatibility, classification, anti-virus and domain status, and support chain for each asset. This includes the systems that are not traditionally in the S-6s purview such as BCS3, MC4, and DCGS-A. The S-6 must establish and maintain a close working relationship with the unit S-4, S-2 and brigade SASMO in order to maintain situational awareness of the digital enablers.

2) Remember the lower Tactical Internet

Sometimes it is easy to forget about radios and other lower TI assets due to the emphasis placed on our upper TI architecture.

However, combat net radio and the other systems that compose the lower TI are the lifeline for elements at echelon. SINCGARS, FBCB2, HCLOS, TACSAT, and other systems provide critical voice and data links to units on the move or those that do not have access to larger communication networks. Additionally, weather and other events can adversely affect the ability to maintain satellite based communication architectures. If the upper TI must come down due to high winds, or during a tactical move, mission command must be transitioned to the lower TI in accordance with the units PACE plan. Training at the NTC, and real world mission execution, doesn't stop just because the upper TI is not in system. Units must be ready to train and fight on their lower TI systems.

S-6s should be familiar with the operation and capabilities of all lower TI systems in their units. More importantly, the S-6 should have an accurate picture of how many and where these systems are throughout the unit.

Questions that the S-6 should be asking in relation to these systems include:

- Who is talking to whom on each system? What nets are supported?
- How is the unit intending to use these systems during each phase of operations?
- How do these systems interconnect? Are they interoperable?
- Can one system talk to another?
- Can a given system pass data or just voice? If it

(Continued on page 34)

COMMAND AND CONTROL STAFF ESTIMATE - CONPLAN 4567-15

FORCES/SYSTEMS AVAILABLE

CJFLCC
- V Corps, Hqs
- 21 TSC
- 38 HRSC
- 3 EXPSUST CMD

CJFACC
- 3rd Air Force

CJMCC
- 3 CSG Task Forces
- 1 ARG

US Marine Forces Europe
- II MEF
- 2d Marine Div
- 2d Marine Aircraft Wing
- 2d Marine Logistics Group

CJFSOCC
- 10 SFG (-))
- NSWTG
- JSOAC

SUPPORTING COMMANDS AND AGENCIES:
- Department of State
- Department of Justice
- MAAGs & Missions
- US Information Agency (USIA)
- US Agency for International Development (USAID)
- Defense Intelligence Agency (DIA)
- Central Intelligence Agency (CIA)
- National Geospatial-Intelligence Agency (NGA)
- Defense Information Systems Agency (DISA)
- Defense Logistics Agency (DLA)
- National Security Agency (NSA)
- US Information Service (USIS)
- US Special Operations Command
- US Transportation Command
- US Pacific Command
- US Strategic Command

Planning Factors
- Extended LOCs
- NATO standards familiar to US UK & Turkey

FACTS
- USEUCOM forms JTF HQ
- USAREUR forms CJFLCC
- USAFE forms CJFACC
- NAVEUR forms CJFMCC
- SOCEUR forms CJFSOCC
- CJFACC is main effort for phases I, II
- CJFLCC becomes main effort for phases III, IV, V

Specified Tasks
- Azerbiajain will operate as part of the coalition
- Azerbaijani military will be have significant attrition early
- Coalition forces (CF) will be well received by HN
- Iran can observe SPOD/APODs
- Any SPOD/APOD reception of forces will trigger Iranian escalation
- United Kingdom, Turkey, Russia will contribute forces
- US forces will need to provide significant portions of C4I infrastructure to and between CF partners
- Iran requires 10 days from initial arrival of US forces to attack

ASSUMPTIONS
- Conduct FDOs
- OO deploy forces to AO
- Defend AZ territory against IR attacks
- BPT conduct offensive combat operations to restore AZ border
- ICW govt AZ conduct stability ops
- BPT reestablish conditions for a secure and stable region
- BPT transition authority to AZ defense forces or other designated authority

Implied Tasks
- Determine Commander's Critical Information Requirements
- Coordinate Information Assurance (IA) Procedures
- Implement Electromagnetic Spectrum Management, Policy, Plans, Programs, and Direction
- Provide Positive Identification of Friendly Forces Within the JOA
- Establish a Collaborative Environment
- Review Current Situation (Project Branches)
- Formulate Crisis Assessment
- Project Future Campaigns and Major Operations (Sequels)
- Develop MOEs
- Conduct Campaign Assessment
- Develop Effects Assessment Criteria
- Conduct Effects Assessment
- Issue Planning Guidance
- Provide Rules of Engagement
- Integrate Computer Investigations and Operations in Computer Network Defense
- Integrate Joint Force Staff augmentees
- Establish Command Transition Criteria and Procedures
- Develop transition C2 requirements for Phase IV and V if Phase V is not back to host govt
- Provide Joint Force Staff Facilities and Equipment (leverage JECs)
- Coordinate Operational IO
- Ascertain National or Agency Agenda
- Determine National/Agency Capabilities and Limitations
- Develop Multinational Intelligence/Information Sharing Structure
- Coordinate Plans with Non-DOD Organizations
- Establish LNO tms w/Geo and AZ military and govt
- Integrate AZ and CF military into US plans/planning
- BPT conduct NEO
- Identify and designate initial Boards, centers and cells rqmt

Limitations
- No cross border operations until D-Day

Critical Issues for the Commander
- CONPLAN does not include Azerbaijani nor Georgian military, need to coordinate Coalition C2 structure with host nation governments
- Economic and diplomatic FDOs are reliant on other US govt agencies/dept for execution
- Will Interagency deploy ACT and FACTs into theater?

Additional Capabilities Needed
- Deployable Joint Command and Control System
- Joint Communications Support Element
- Joint Deployable Teams
- Joint Interoperability Test Command
- Joint Operational C4I Assessment Team
- Joint Spectrum Center
- JTF Civil Support Joint Planning Augmentation Cell
- JTF Global Network Ops
- Multinational Informantion Sharing
- Joint Systems Integration Center
- Army Space Support Team – from 1st Space Brigade
- Joint Public Affairs Support Element

Figure 1 CGSC Staff Estimate A Way

(Continued from page 33)

is passing data, does it still retain a voice capability?

• Can you leverage the system in a non-traditional way to fill a "gap" somewhere else in the communications architecture?

3) Consider Smart Books

As a generalization, communication teams that maintain and use smart books tend to have smoother rotations than teams that do not. With the breadth and depth of knowledge required by today's S-6 team, it becomes very difficult to remember all of the various configurations, settings, IP addresses, and other information required to install, operate, and maintain a units communications systems. Smart Books help to reduce confusion, configuration errors, and help to maintain unity of effort.

There are many ways to organize smart books. Some excellent examples can be found on the S-6 Community of Purpose at https://S6.army.mil. Teams need to customize their books to best fit their mission and responsibilities. When creating smart books, ensure that teams maintain the proper procedures and safe guards regarding the classification of the information in the book. It is a good practice to maintain separate books for the NIPR and SIPR systems. Never write down passwords in smart books. Properly mark all books and material with the appropriate classification level.

If teams must record passwords for various devices in a smart book (like TACLANEs, routers, switches, and other devices that are not routinely accessed), then create a separate book just for passwords. Maintain it in an appropriate field safe, marked with the appropriate classification markings, and signed in and out on a key control roster (DA Form 5513).

4) Review Battle Drills and SOPs

Every unit should have battle drills and SOPs that cover the basics. A few examples are what to do in case of indirect fire, direct fire, convoy ambush, IED etcetera. But, how many have TOC battle drills and SOPs for the communications fight? The S-6 is responsible for generating the digital battle drills and SOPs for the unit.

Like any other battle drill or SOP, digital battle drills and SOPs must be tailored to the operational needs of each unit and reviewed and rehearsed periodically to ensure that they remain relevant. Digital battle drills and SOPs should cover such issues like:

• What actions must be taken in the event of the spillage of classified information onto a network of a lower classification?

• Actions to take in the event of a possible or confirmed compromise of a secure radio net.

• If power to the TOC is lost for an extended period of time, does the command and control element displace and if so, where? How is the battle handoff handled?

Many of the BN level battle drills and SOPs will be based in no small part on guidance from the BDE and DIV G-6. Digital battle drills and SOPs must be properly nested amongst all echelons of the communications architecture. Each battle drill and SOP must clearly identify at what level of command the decision to execute occurs. This ensures unity of effort and command across the network.

So, the S-6s have now gained a full understanding of all of the assets within their units. They have recorded all of this information and placed it in easily understood tracking matrixes, capturing both the upper and lower TI. The S-6s then place these matrices on the portal where their teams and the brigade S-6 can access it. Copies are printed out and placed in the teams smart books (just in case the portal drops). So, now what do the S-6s do with all of this information?

5) Develop Run Estimates and COMSTAT reporting procedures within the battalion

Running estimates are critical when developing the concept of Signal support for the unit. S-6's base their initial running estimates off of their asset matrices. As assets are committed to support operations the S-6 adjusts his running estimate accordingly. Several examples of horse blankets and running estimates can be found posted on the S-6 COP.

The example on the left in figure 1 is "a way" used to teach officers at the Army's Command and General Staff College. It can be easily adapted for use at the BDE or BN level. It allows the S-6 to clearly list each of the MDMP Mission Analysis products in a consolidated format for quick reference. Using this format, and updating it as conditions change, allows the S-6 to provide the commander with timely, accurate analysis and COAs.

An alternate approach is to use the "horse blanket" approach. Figure 2 below is an example of an S-6 horse blanket that was pulled from the S-6 COP. It uses easily understood graphical representations to keep track of unit assets. As assets are employed, or destroyed, they can be graphically indicated as such on the horse blanket. This approach focuses more on the tactical availability and capability of the assets vice the previous example, which is a more MDMP focused approach.

Either approach is a valid way to maintain a running estimate. The method

(Continued on page 36)

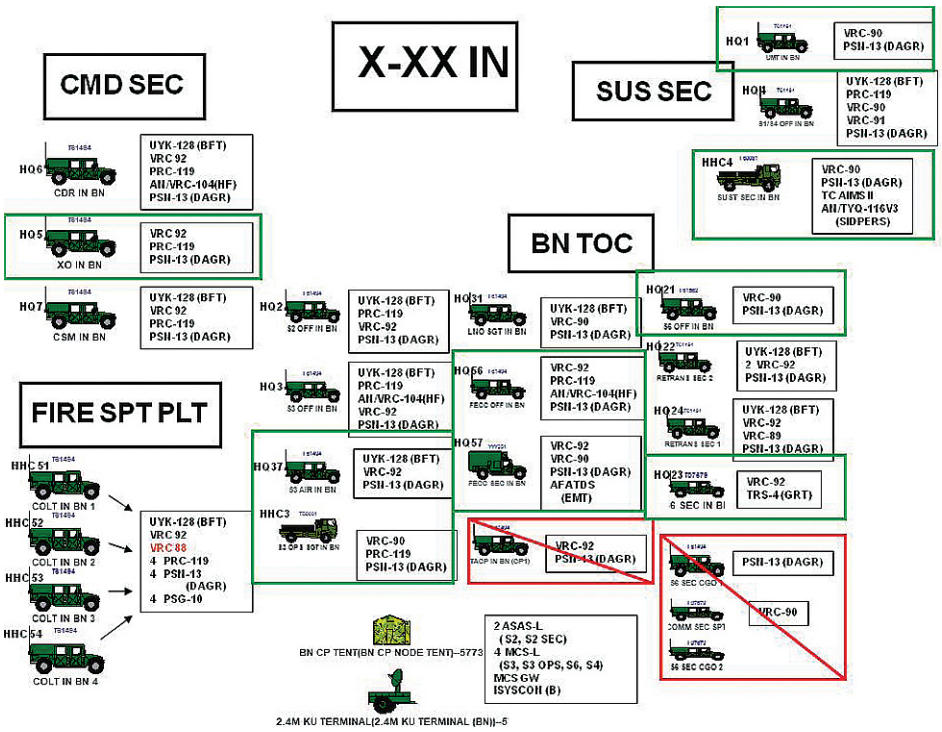

Figure 2 S-6 COP example of a COMMO Horse Blanket

(Continued from page 35)

used by the S-6 should be whichever is most useful for the S-6 and their commander to gain and maintain situational awareness of BN assets and plan for future operations.

Communication Status Reports are the preferred method of maintaining situational awareness of current mission command systems statuses. Again, there are a myriad of ways in which to collect and display this information within the task force; many of which can be found on the S-6 COP website. There are some important factors to consider when developing a COMSTAT:

• Displays the current status of each mission command system within the task force.
• Displays the information in a meaningful way for commanders to understand and gain situational awareness.
• Captures the reporting requirements of the next higher headquarters COMSTAT report.

Remember that the COMSTAT is the commander's tool, managed by the S-6. It must be meaningful for commanders and not bogged down in too much technical detail. Each displayed item must be relevant to the commander's decision making process. Additionally, trying to garner excessive amounts of detail from the reporting units will discourage timely reporting. The COMSTAT must balance the need for clarity and simplicity of reporting, with sufficiency in reported information to gain and maintain accurate situational awareness.

6) Plan for continuous power needs—primary and backups

Don't get caught in the dark. The only way the BN S-6 can deliver timely and accurate communications and network systems to the unit is if there is a steady, reliable source of power. Whether it's a system running in a vehicle, on batteries, or off of a generator set, the electrons must flow from somewhere. Therefore, the S-6 must become intimately familiar with power generation in and around the TOC.

I am not advocating that the S-6 section take possession of all the power generation issues associated with the TOC. The S-3 and other sections should shoulder their share of responsibility for maintaining the generator sets. However, any generator that the S-6 sections ties into for power for their CPN or other primary communication assets should become their concern. The S-6 section needs to regularly check fuel levels, ensure proper PMCS services while in system, and make sure that all of the generator Basic Issued Items are maintained and travel with the generator. If using another section's generator, the S-6 or S-6 NCOIC needs to coordinate with the owning section to ensure that the generator is fully mission capable. Several things to consider when developing a power plan:

• Power balancing and distribution; the S-6 can aid other sections and the S-3 to ensure that the distribution plan doesn't overload one generator while not drawing enough power from another.
• Draw from multiple generation points. If your CPN is running off of generator one, make sure that your BFT TOC kit and radios are running off of generator two. That way if one fails, the TOC can still exercise mission command through the use of their PACE plan.
• Get everyone in your section properly licensed on all of the generator sets your unit utilizes. Even if your section doesn't own any of them. You never know when you might have to tie into a different generator; knowing power generation capabilities is critical.
• Make generator maintenance a part of your daily battle rhythm within the section. Several checks per shift to ensure that the generator never falls below half a tank of fuel, the oil is at the proper level, and the generator is properly maintained. There is never a valid excuse for a generator running out of fuel.

One of the lost arts of the pre-9/11 signal section is battery management. Prior to the Army's focus on COIN and the funds that came with fighting on multiple fronts, the BN S-6 had to manage a unit's battery consumption and ordering. Complex tracking systems, budget sheets, and on-hand stocks enabled the S-6 to provide the unit with sufficient batteries to meet training objectives.

The introduction of rechargeable batteries helped to reduce the number of lithium batteries that needed to be ordered and maintained, but add a new level of complexity. Units now needed to maintain a central battery charging and recharging rotation in order to ensure that radio operators (RTOs) had sufficient batteries for each mission or training event. The S-6 needs to understand how each of the subcomponents in his unit is using batteries, what systems consume what type of battery, and how to balance the need for training with shrinking budgets. Once again, the BN S-6 will have to begin central management and tracking of batteries within the unit in order to ensure that a units training is not adversely impacted.

7) Think of Mission Command as a weapon system

We don't expect the company

armorer to zero and qualify our personal weapon for us. It is the individual Soldiers task to be able to zero and qualify with his rifle. The armorer is responsible for ensuring that the weapon is properly gauged, serviced, and ready for the Soldier to go to war. This is the type of understanding for mission command systems that the Army community must get commanders and fellow Soldiers to understand and embrace.

Rotation after rotation at the National Training Center, the tactical signal OC/T's observe the validation of mission command systems being passed to the S-6 and not the S-3. An S-6 ensures connectivity of systems and that data is capable of flowing between systems. S-6s should not validate the system or competence of the user. Each user needs to be able to effectively fight the battle through their mission command system. Therefore it is important that we educate our leaders on the importance of having individual users validate their mission command systems during communication and mission command validation exercises.

The S-3 must take ownership of these exercises as an operation. They must work closely with the S-6 in order to lay out a plan for validating the unit's mission command systems. It is important that this validation includes both upper and lower TI systems at echelon.

8) Relationships are key

S-6s cannot do everything alone or in isolation, nor should they try. S-6s are a member of a team, and must be willing to reach out to fellow S-6s for help, advice, and support when they need it. Conversely, S-6s must also be willing to lend aid, advice, and support to fellow S-6s when they ask. With the complex interconnectivity of modern military communications S-6s as a community can only shine if they are all pulling together.

Therefore S-6s must make the effort to reach out to fellow S-6s and build positive working relationships and friendships within the signal community. They must also encourage their NCOs to do the same. It is this network of interpersonal relationships that S-6s will find themselves leaning on when things are going badly and they need some help to get back on track. Or, when they find that their last critical part has failed and there is a need to source a replacement faster than supply chains can supply it. S-6s may also find that fellow S-6s have some very useful refined staff products that they are willing to share in exchange for some of your products. It is relationships that make this sort of professional interchange possible, and relationships require work and time to build. If S-6s haven't already started to develop these relationships they need to begin now.

9) Bring everything

It's better to have it and not need it, than to need it and not have it.

Experience has shown that if you don't bring everything, the part you leave behind will be the one you require the most. It's the little things that tend to be forgotten, or inadequately resourced; RJ-45 tips, sufficient CAT-5 cable for multiple jumps, DVD-Rs, USB cables, ASIP re-transmission cables, BFT mission data loaders, SINCGARS hand microphones, etc. It is hard to stress sufficiently to S-6s to conduct detailed inspections of unit communications equipment down to the lowest echelon, and help the companies and subordinate elements to order or replace missing and broken equipment.

Sometimes due to budgets and space requirements, S-6s are forced to make hard calls on what to bring and what to leave behind when coming to NTC for a rotation. These decisions are best made when the S-6 has a solid understanding of the health and status of all of the unit's communication systems. This situational understanding is gained during the pre-rotation training events at home station. Only if the S-6 works with the S-3, companies, and subordinate elements to adequately stress, test, and use all of the organic communication systems during these training events can the S-6 evaluate where he can assume risk when packing for the NTC or deployment. If the S-6 doesn't have this level of awareness, they are assuming greater risk when choosing what to pack out and what to leave behind.

If the S-6 has to choose between critical components and systems due to space, it is up to the S-6 to discuss requirements with the XO and commander and provide a staff estimate of the risk being taken if various items are left in the rear. It is then the commander's decision to either provide the S-6 with more space or assume risk. It is not the S-6s decision to assume mission risk in a vacuum. It must be a logical and thought out decision by the chain of command, based upon the S-6s recommendation founded in facts and experience, not uniformed guess work.

10) Know the architecture

If you don't know how the BDE is communicating within itself, and its links to the larger force, you cannot make informed

(Continued on page 38)

(Continued from page 37)

recommendations to the command about future signal planning. S-6s cannot look for ways to leverage the architecture to aid your unit during mission. S-6s cannot provide their commanders with the best concept of signal support possible unless they understand their missions and communication requirements.

Where are the retransmission and relay sites for FM and what nets are they broadcasting? Is there a CPN or other upper TI node co-located with one of their elements that can be used to provide them digital services? Are there BDE level assets not currently being used that could be requested to support a mission? If S-6s don't know the BDE architecture and concept of signal support, they cannot answer these questions, or discuss intelligently about network conditions and support. S-6s must study and understand the concept of signal support.

If BN S-6s have developed a solid professional relationship with the BDE S-6, they may be able to provide suggestions on their next concept of Signal support prior to publication. Just as BN S-6s must consider subordinate elements mission and requirements, BN S-6s must ensure that the BDE S-6 understands their concept of signal support in order to source any bottom up requirements. S-6s cannot make intelligent suggestions without first understanding the architecture and mission sets within the rest of the BDE.

In conclusion these ten tips will help keep the BN S-6 from making some of the common mistakes that units tend to make when deploying to the NTC. These tips are applicable to units conducting home station training, and real world mission deployments.

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Acronym QuickScan

ASIP – Advanced System Improvement Program (refers to the RT-1523 D and newer models of SINCGARS radio)
BCS3 – Battle Command Sustainment Support System
BDE - Brigade
BFT – Blue force Tracker
BII – Basic Issue Item
BN – Battalion
CAT-5 – Category 5 internet cable
CGSC – Command and General Staff Collage
COA – Course of Action
COIN – Counterinsurgency
COMSTAT – Communication Status Report
CPN – Command Post Node
DA – Department of the Army
DCGS-A – Distributed Common Ground System - Army
DIV – Division
DVD-R – Digital Video Disk - Recordable
ESB – Expeditionary Signal Battalion
FBCB2 – Force XXI Battle Command Brigade and Below
FM – Frequency Modulation
HCLOS – High Capacity Line of Site radio
IED – Improvised Explosive Device
IP – Internet Protocol
LDIF – Lightweight Directory Interchange Format
MAC Address – Media Access Control Address
MC4 – Medical Communications for Combat Casualty Care
MDMP – Military Decision Making Process
NCO – Non-Commissioned Officer
NCOIC – Non-Commissioned Officer In Charge
NIPR – Non-secure Internet Protocol Routing
NTC – National Training Center
OC/T – Observer Coach/ Trainer
PACE Plan – Primary, Alternate, Contingency, Emergency Plan
PMCS – Preventive Maintenance Checks and Services
RTO – Radio Telephone Operator
S-6 COP – S-6 Community of Purpose
SASMO – Sustainment Automation Support Management Officer
SINCGARS – Single Channel Ground and Airborne Radio System
SIPR – Secure Internet Protocol Routing
SOP – Standard Operating Procedure
TACLANE – Tactical Local Area Network Encryptor
TACSAT – Tactical Satellite
TI – Tactical Internet
TOC – Tactical Operations Center
USB – Universal Serial Bus
XO – Executive Officer