

# Doctrine: Changing How We Educate Soldiers, Leaders

## Opinion

**Article, photo by 1st Lt. Tyler Litchfield**  
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Over the past several months, the Soldiers, NCOs, and officers of 51st Expeditionary Signal Battalion – Enhanced (ESB-E) have had the distinct privilege to put the Scalable Network Node (SNN) into system in the U.S. Central Command (CENTCOM) Area of Operation, being the first ESB-E to deploy as a battalion under hostile conditions, supporting critical air defense and logistics operations across Southwest Asia.

For many Soldiers, it is their first time in austere environments meeting challenges and overcoming them with skill and gravitas. However, it is not just the Soldiers and leaders of the 51st being tested. This deployment is the first time that the SNNs have faced such a demanding environment, with over 30 nodes actively supporting users across an entire combatant command. The SNNs have been put to the test, facing soaring temperatures and harsh wind and sandstorms. In this process, the Soldiers and leaders of the 51st have learned a truly significant amount about these new systems. They've developed crucial tactics, techniques and procedures (TTPs) and built critical experiences to share with the signal community while providing invaluable feedback to the multiple fielding projects that have fed into the conversion to an ESB-E.

Out of the many lessons learned from the deployment, perhaps the most important lesson learned is the importance of both institutional and unit investments into the education of our junior Soldiers and officers. The signal community must heavily invest in the education of our junior Soldiers, NCOs, and officers; particularly senior NCOs and junior officers at the company level. While it is true that these populations will not necessarily be directly behind the keyboard troubleshooting outages, platoon and company-level leaders, without complete understanding of their equipment, often result in the inability to fully approach the complexities of networking and the ways in which these systems function. An informed, technically adept company-level leader is better able to plan missions and talk to their supported customers, serving as the critical interface point between the teams that they lead and the customers who are often not signal-inclined or technically savvy.

Furthermore, technically adept junior leaders are able to holistically understand the systems that they take responsibility for and make sound decisions on how to best implement them. Understanding their equipment in-depth is particularly important for considerations including when and what to pack during

pre-deployment operations, assigning nodes to locations, or interfacing with battalion enterprise management teams to explain the details of outages or why systems were restored. Currently, company-level leaders learn their equipment during training exercises or by observing their junior Soldiers troubleshooting. However, units should also have their company-level leaders attend dedicated training provided by the fielding teams alongside their Soldiers. This creates additional buy-in as to the importance of these trainings and helps both leaders and Soldiers build their understanding together, giving both parties a baseline of understanding to which Soldiers can add to their ever-developing troubleshooting knowledge. Having junior officers and senior NCOs attend equipment-specific training is just one of the ways that the Signal Corps can use the advent of SNNs to change how we educate Soldiers and leaders.

With the SNNs' pivot towards virtualization, it is more important than ever for the operators to have fundamental knowledge of networking – not just at the lower levels of the Open Systems Interconnection model, but also at the upper levels, such as protocols at the application layer or knowledge of firewalls.

As the Army turns more towards empowering its subordinate commanders acting with disciplined initiative, SNN teams must be independently technically competent when troubleshooting at each step of the signal flow without the aid of a network technician warrant officer. Looking past the Global War on Terror and into preparation for large scale combat operations, it is undeniable that speed and mobility are critical for survival. We will no longer have the luxury of space, time, and uncontested electromagnetic space. Just as our teams must be able to establish communications and jump sites frequently and quickly, they must also be able to troubleshoot holistically and independently.

The most successful SNN teams are those with knowledge of the physical layer to the application layer, to include help-desk functions, and can troubleshoot their systems top-to-bottom without relying on higher echelons. For the SNN team, problems come up fast that need to be solved just as quickly. In the virtualized environment of the SNN, the source of the problem could come from a variety of places without any physical cause. Effective use of SNNs requires a greater understanding of all the steps of networking without relying on physical indicators as was done in the Warfighter Information Network-Tactical (WIN-T) environment. Units should invest in and promote certification courses for their Soldiers

offering incentives for successful completion of certifications such as CompTIA NET+ and SEC+ and building internal training programs using free resources online. As an example, Charlie Company, 51st ESB-E, has leveraged being co-located with battalion headquarters, training late deploying operators and battalion headquarters personnel on the SNN. Alpha Company, 51st ESB-E, also invested in similar training, having technically skilled operators teach classes on SNN operation to their platoon leadership. Building a more informed operator population will help invest in our greatest resource while also building robust, effective teams that can provide voice and data services to the warfighter quickly and independently. While units can and should invest heavily in the education of their Soldiers and leaders, time is always the most valuable and least available asset for leaders across our formations.

Unit commanders face ever-increasing demands with diminishing personnel, requiring units to prioritize seemingly endless amounts of equally critical tasks. One way the Signal Corps can address this issue while also emphasizing the education of the force is to modernize courses of instruction at Advanced Individual Training, Basic Officer Leader Course, Warrant Officer Basic Course, and Signal Captains Career Course, updating the curriculum to include the equipment of the ESB-E, and spending more time with networking and security fundamentals. It is often said to students in these courses that “you’ll learn it when you get to your unit.” Moving away from this mindset frees unit commanders to focus on stress-testing of their systems and operators, rather than bringing their operators and leaders up to baseline on new equipment.

In line with the move towards commercial, off-the-shelf solutions, the curriculum should constantly develop with industry and update annually to provide important training by experts in their fields. The schoolhouse can partner with commercial certification institutions to provide accredited training that functions as college credits,

boosting the Army careers of junior Soldiers and officers. At the unit level, the Signal Corps can also look at partnering fielding teams or civilian subject matter experts (SMEs) to provide regular classes, as new equipment training is generally a singular event that only a small fraction of a unit will experience over the course of the life cycle of a given piece of equipment. Offering these classes in a routine manner will help offset difficulties that units face with losing experienced personnel to permanent change of station (PCS) moves.

Additionally, frequent training given by SMEs at installations across the globe will offset difficulties that Soldiers face as they move units and encounter different types of equipment with different degrees of unit emphasis on lower and upper tactical internet.

Overall, at both the schoolhouse and unit level, institutional investment into the education of Soldiers and leaders allows commanders more time to train while also balancing the numerous priorities of the garrison environment, enabling our operators to become more knowledgeable and offer better services to the warfighter. The advent of the SNNs and the ESB-E provides an opportunity to change how to think about the role of operators and how they interact with their equipment. The Army of 2030 will be more mobile and independent than ever before. As we continue to update our systems to reflect that, the Signal Corps must concurrently update-training pathways to enable people behind those systems to be independent. Both training institutions and U.S. Army Forces Command units can play a role in that process, empowering operators and company-level leaders alike to be more independent and have a more holistic

understanding of the process from a user machine to the Regional Hub Node and beyond.

The 51st ESB-E’s operations in challenging environments across CENTCOM have shown that it is necessary for signal teams and their first-line leaders to be highly motivated, educated, and independent critical thinkers that understand networking from top to bottom.



*Sgt. Aleksandr Taake and Spc. David Ahn, 51st ESB-E, troubleshoot their SNN at an undisclosed location in the CENTCOM AOR.*