# Maintenance in the Brigade Special Troops Battalion

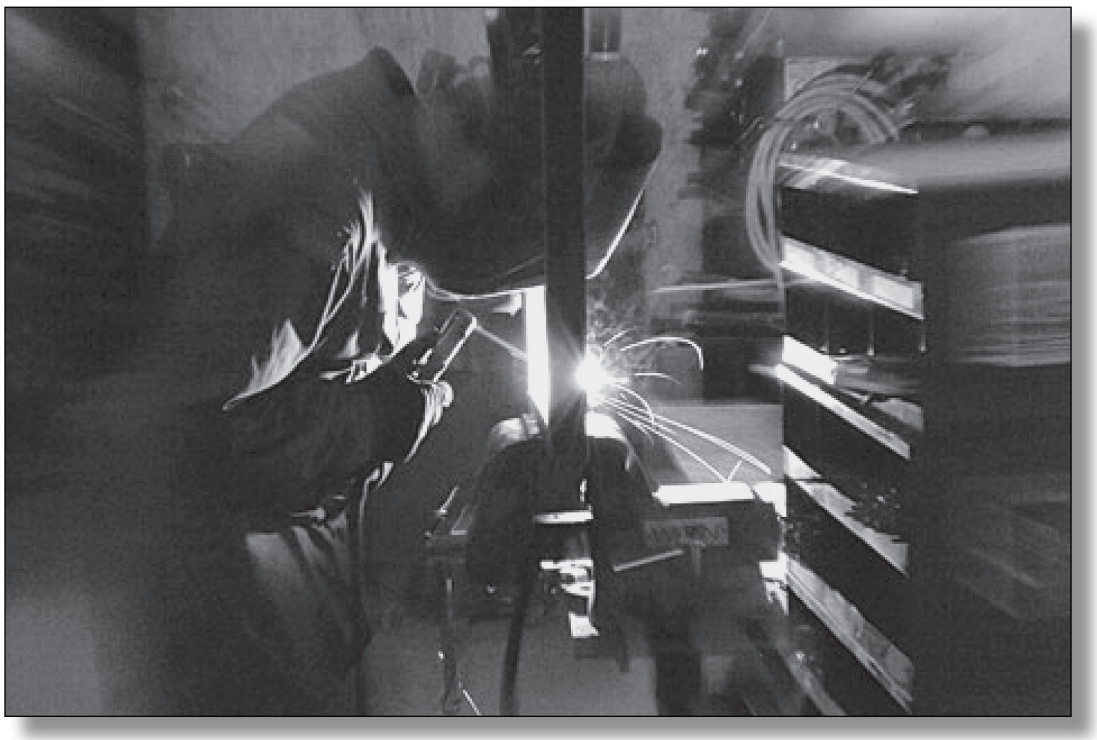
*By Lieutenant Colonel James W. Craft III and Chief Warrant Officer Three Louis Watkins, Sr.*

The brigade special troops battalion (BSTB) is designed to provide command and control and logistics support to combat support elements, namely the military intelligence and signal companies that were once attached to brigades from division-level assets. Doctrinally, the BSTB also provides logistics support to the brigade headquarters and command and control and sustainment for all of the nonorganic units operating in the brigade combat team's (BCT's) area of operations. Each of these nonorganic units can have a different command relationship with the BCT, making the support role a bit complicated. The BSTB concept is a success on many levels and provides the brigade commander with flexibility but, with a few modifications, the BSTB can become an even more valuable asset and a true combat multiplier for the brigade commander.

The BSTB can adequately support its organic companies, but it struggles to sustain all of the nonorganic units in the BCT's area of operations. Formed in late 2004, the 2d BSTB of the 2d BCT, 4th Infantry Division, was a blend of Soldiers with 54 different military occupational specialties (MOSs). The unit deployed to Iraq in November 2005 and was located on a remote forward operating base (FOB). The BSTB was responsible for supporting itself, a military transition team, and 16 additional company-sized elements that directly supported the brigade but lacked their own organic support elements.

The BSTB, operating as it was doctrinally designed, faced several logistic and maintenance challenges. As a result of adding attached units, the battalion had to maintain too many generators, air conditioners, and vehicles to support without increasing our personnel authorizations. Additionally, the increase in maintenance support tasks created high demands on our authorized spares and stock levels. The BSTB's intelligence and electronic warfare (IEW) repair section and the signal maintenance section—despite being ill-equipped and short on manpower—performed heroically, maintaining numerous newly fielded intelligence and signal systems. The United States Army Logistics Support Activity (LOGSA) Maintenance Master Data File (MMDF) and Standard Army Maintenance System (SAMS-1) did not support reporting the mission-capable status of commercial off-the-shelf (COTS) items, which ultimately impacted the flow of repair parts. The intense heat, operational tempo, and overall effectiveness and popularity of the tactical unmanned aerial vehicle (TUAV) created maintenance dilemmas for their assigned maintainers. This article will explore three areas—mechanical maintenance, IEW and signal maintenance, and TUAV maintenance—and provide suggestions on how to realize the full potential of the BSTB.

Photo by Specialist Alexis Harrison



**Welding is a critical skill for maintenance. To meet the need for welding on regular repairs and on up-armored HMMWVs, the 2d Brigade Special Troops Battalion had to cross-train two Soldiers who had some welding experience in civilian life.**

## Mechanical Maintenance

Maintenance capability in the BSTB resided primarily within the headquarters company and was made up of a unit maintenance technician warrant officer, 6 noncommissioned officers, and 18 mechanics. This was too few mechanics to maintain the fleet of more than 150 vehicles, 100 generators, and 60 environmental control units (ECUs) owned by the BSTB, the brigade headquarters, and the additional units directly supporting the BCT.

The BSTB overcame the shortages and succeeded for several reasons. First, one particular maneuver battalion's forward support company (FSC) was able to assist with vehicle maintenance. The battalion also was extremely aggressive with its power generation and air conditioner cross-training, and they enjoyed access to forward repair activities near Baghdad. Finally, the battalion was able to avoid tasking mechanics for guard detail since our brigade did not operate a tactical command post.

The Army relies on the manpower requirements criteria (MARC) system to develop unit authorizations. Either the formulas for determining manning authorizations are incorrect or someone decided that our current manning levels are acceptable and ignored the criteria. The MARC takes into account equipment density and time needed to perform repairs. When equipment is added to a unit, adding people is justified. The MARC system cannot predict which units will be attached to any given unit, and the BSTB is not designed as a tailorable organization. Units directly supporting the brigade should have arrived with their own support slice; however, only one unit—a military police company—arrived with its own logistics support. Commands must develop a way to enforce the responsibilities associated with each type of command relationship, or units like the BSTB should be manned so that they can properly support attached and assigned units.

Organizational problems (probably related to the stovepipe systems previously found in the military intelligence and signal battalions) surfaced once the BSTB deployed. The signal company owned the SAMS–1, but was not authorized any automated logistical specialists (MOS 92A) to operate the system. The military intelligence company, on the other hand, was authorized one 92A but not any automated maintenance systems. Since the headquarters and headquarters company also did not have a SAMS–1 box, we merged the motor pool, the IEW repair section, and the signal maintenance section to form a mini-FSC, with the battalion maintenance technician acting as the shop officer. This reorganization, which was later submitted as a recommended change to the unit's modified table of organization and equipment (MTOE), greatly improved the unit's ability to track and report statuses and order repair parts.

The BSTB struggled with connectivity and had to scrounge a very small aperture terminal (VSAT) for dedicated logistics communications. The VSAT was eventually used to link all maintenance activities to the LOGSA using SAMS–2 (the command-level version of SAMS) and also to link the brigade logistics staff officer (S–4) and company supply rooms using the Standard Army Retail Supply System (SARSS) and Property Book Unit Supply–Enhanced (PBUS–E).

The BSTB needs an authorized welder with appropriate equipment. We cross-trained two Soldiers who deployed with limited civilian welding experience, but we were barely able to maintain our systems. It was a constant challenge to balance the welders' time between regular repairs and the upgrades that we were required to install on the up-armored high-mobility, multipurpose wheeled vehicles (HMMWVs). Additional mechanics and welders would have made it much easier to keep pace with repairs and upgrades and ultimately would have kept our Soldiers safer while they conducted missions.

The biggest maintenance concern in the BSTB was the operational readiness of our ECUs and generators—items that were critical to the accomplishment of the battalion's primary mission. The number of power generation equipment repairers (MOS 52D) and utilities equipment repairers (MOS 52C) was not sufficient. The BSTB is authorized two 52Ds and one 52C to maintain the brigade headquarters' two command posts, the signal company's Joint Network Node (JNN) system, and the plethora of heat-sensitive equipment owned by the military intelligence company. The BSTB used an extremely aggressive cross-training program to train additional Soldiers to help with these two critical areas. Through a combination of cross-training, a heavy reliance on contractors and spares located more than an hour away, and much luck, the BSTB was able to maintain the ECUs and generators that sustained the communications network. Had we experienced failures and been unable to travel the main supply routes, the brigade might have experienced blackout periods and degraded operations across the board.

Automotive maintenance was less of a problem, but that activity succeeded only through long hours, great leaders, and outstanding repair parts supply efforts from the support battalion. The additional company-sized units did not experience an exceptionally high operational tempo, so we were able to keep the units at a fairly high state of readiness. But without assistance from the nearby maneuver battalion's FSC, we would not have been able to sustain them for much longer than 60 days.

## IEW and Signal Maintenance

The IEW repair section was led by an IEW equipment technician. We were lucky to have an experienced and knowledgeable officer who coordinated the cooperation of the IEW repair section and the signal company's special electronic devices repairer (MOS 94F). This collaboration, made possible through the Combat Service Support Automated Information System Interface (CAISI) and SAMS–1, was invaluable. The section completed more than 1,200 work orders on equipment ranging from intelligence systems to radios and night vision devices.


Photo by SGT Brandon Aird

**Repair of TUAVs was a major challenge for the 2d Brigade Special Troops Battalion in Iraq.**

Many of the military intelligence and signal companies' systems were COTS items and were under contracted maintenance programs. Unfortunately, because of the centralization of the contractors at the forward repair area, the dangerous roads in Iraq, and the limited number of seats on helicopters, the contractors' response time was often inadequate. Instead of waiting for those contractors, we chose to use assigned Soldiers who were trained and certified to repair more common intelligence platforms. Our IEW maintainer/integrators—who were capable of reading wire diagrams and schematics and troubleshooting systems—completed needed repairs in just hours. Surprisingly, repair parts were obtained fairly easily through normal supply channels.

The IEW repair section obtained certification to repair Dell computers and became the "go to" unit when computers and printers malfunctioned. They coordinated directly with Dell for repair parts that were still under warranty and saved countless hours that would have been spent sending the equipment to the centralized repair facility.

The section's work with counter remote-control improvised explosive device (IED) electronic warfare systems was one of the unit's most important accomplishments. The brigade received invaluable support from naval electronic warfare officers and field service representatives as these systems were installed and maintained. The IEW repair section worked hand in hand with these personnel and was quite capable of augmenting this effort. Unfortunately, established procedures prevented us from fully assisting with this mission, which degraded systems installation and repair. In keeping with Coalition Forces Land Component Command (CFLCC) policies for road worthiness of vehicles, commanders made tactical adjustments to missions and shared resources to overcome slowed installation and repair productivity.

One additional issue that must be addressed is the need to report the maintenance issues of systems unique to the military intelligence and signal companies. Many military intelligence and signal systems are COTS systems that are not in the Army's MMDF and cannot be reported through normal maintenance channels. The BSTB conducted an internal 4-week study of readiness reporting patterns and discovered that maintenance reporting for military intelligence systems Armywide was quite irregular and sometimes nonexistent. Since the Army does not appear to track certain military intelligence and signal systems using a current Standard Army Management Information System (STAMIS), brigade- and division-level maintenance managers must record maintenance issues on spreadsheets, which—unlike the STAMISs—do not provide any visibility to commanders on the battlefield.

Within the brigade, we were able to change parameters on our STAMISs either to load pacing items into the MMDF or to tag the equipment as maintenance significant. By changing the system parameters, we could view these systems on the brigade's deadline report from the SAMS–2 box. Unfortunately, that vision did not extend any higher than our brigade, so neither the division nor the contractors could assist without an e-mail or telephone notification. The second effect of not having the right items loaded into the MMDF was the inability to capture historical data on these systems. Repair part histories are needed to develop shop stocks, and manhour records are critical to force design. That data from our unit would be beneficial for designing and improving organizations, but it is not available.

## TUAV Maintenance

The TUAV platoon was truly the eyes of the brigade; we tasked our Shadows with flying more than 1,900 hours during approximately 600 missions. The platoon's maintenance section is authorized four unmanned aerial vehicle (UAV) repairers, but we had three UAV repairers and three 52Ds with the additional skill identifier U2, which qualified them as short-range UAV repair technicians. These Soldiers, all with limited experience and below the rank of sergeant, were responsible for all preflight, postflight, scheduled, and unscheduled maintenance on the aerial vehicles. Each preflight and postflight sequence consumed a majority of their available time. This required help from the motor pool to maintain the platoon's generators, further adding to their burden and sometimes causing the commander to have to choose which piece of equipment was going to be repaired first—a TUAV, a signal generator, or the tactical operations center's generator.

Further adding to the stress was the fact that these repairers lacked the knowledge and experience—through no fault of their own—to properly manage TUAV maintenance and repair parts. Assistance from the battalion maintenance technician and IEW technicians helped, but only after we experienced several setbacks. The platoon's embedded field service representative was a conduit to the forward repair area located 2 hours away and made great contributions to the unit's operational readiness.

TUAVs were supported by Aviation, Avionics and Instrument Corporation. Maintenance and readiness were tracked using the Enhanced Logbook Automation System (ELAS), which—like the spreadsheets used to track other unique equipment—did not link with the Army's STAMISs. Again, the BSTB was able to establish visibility using our organic STAMISs by creating a TUAV repair shop in SAMS–1 and putting the system into the MMDF. Using the Unit Level Logistics System-Air (ULLS-A) was one possible solution, but that entailed configuring the SAMS–1 box to accept data from both air and ground systems. SAMS–1 has since been replaced by SAMS–Enhanced (SAMS–E), but there would be no significant difference between configuring SAMS–E and SAMS–1 for this purpose.

## Summary

The BSTB is a unique and adaptable organization that can provide great flexibility and help a maneuver commander get the most out of the military intelligence company, the signal company, and all of the attached and assigned slices that arrive once a BCT is deployed. To fully capitalize on this asset, we believe that the United States Army Training and Doctrine Command's force designers should complete a thorough review of the BSTB's requirements versus their capabilities and should reorganize maintenance personnel to form a mini-FSC. This idea grows even more important as the Army is moving the brigade's two engineer companies from the combined arms battalions to the BSTB in the near future.

The 2d BSTB successfully provided signal and military intelligence support to the 2d BCT during its deployment to Operation Iraqi Freedom 05–07 by adapting and changing its organizational structure to meet the demands of the battlefield. The 2d BSTB supported 20 different elements, thanks to a laudable performance from the Soldiers and junior leaders of the battalion. The maintainers of the BSTB were primarily aided by aggressive contractors and a sister battalion's FSC, but many other people, units, and factors played a role in their success. Had the battalion experienced a higher intensity conflict or been required to relocate regularly, it would not have enjoyed such success because the lines of communication and the readily available spares would probably not have been as accessible.

The Army's logistics leaders, along with the intelligence and signal communities' leaders, must make sure that the vital COTS systems that provide commanders with the information and ability to shape the operational environment are properly loaded into the MMDF. The increased visibility of the operational readiness of these systems will allow logisticians at tactical, operational, and strategic levels to resupply, repair, or replace these important systems so that we can continue to push the enemy and keep our Soldiers safe. A few minor tweaks to this dynamic organization will greatly increase the BSTB's value as a combat multiplier and will provide commanders with the necessary information to continue to fight the enemy on our terms, using the technological advantages that help make our Army the best in the world.

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