

Improving Mobility, Survivability and Modularity in a Brigade Support Medical Company

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Capability Gap

The Brigade Medical Support Company (BSMC) provides Role 2 Health Service Support (HSS) and Force Health Protection (FHP) to a Brigade Combat Team (BCT), including capabilities for treatment, evacuation, medical logistics, dental, laboratory, radiology, behavioral health, preventive medicine, and physical therapy. This wide array of functions and associated equipment requirements translates to the BSMC being a relatively cumbersome element that is slow to both establish itself and displace. This dynamic is at odds with both the imperative to rapidly follow a fast-moving Infantry Brigade Combat Team, as well as the enemy threats inherent to Large Scale Combat Operation (LCSO).

C Company, 426th Brigade Support Battalion (C/426) is a BSMC within the 1st Brigade Combat Team, 101st Airborne Division (Air Assault), and therefore is manned and equipped under the BSMC, Infantry BCT (IBCT) Modified Table of Organization and Equipment (MTOE). In this MTOE, the BSMC is authorized more than forty Medical Equipment Sets (MES) and Dental Equipment Sets (DES) that comprise its ability to perform Role 2 HSS and FHP.¹

The company is organically capable of transporting these MES/DES and its remaining MTOE equipment using Joint Light Tactical Vehicles (JLTV), Field Litter Ambulances (FLA), Chemical Biological Protection Systems (CBPS), Family of Medium Tactical Vehicles (FMTV) and assorted trailers for each platform.² The standard infiltration of the BSMC is a ground convoy within the Brigade Support Battalion (BSB)'s occupation of the Brigade Support Area (BSA). The Role 2 facility typically takes up to four hours to establish and a similar amount of time to displace, along with associated time delay while integrated into the overall BSB's ground movement tables.

The BSMC's MTOE-based method of transporting organic medical and dental equipment sets is via FMTVs and associated trailer systems, which are approximately four feet above ground level, or shoulder height for the average Soldier. A preponderance of the BSMC's equipment is contained in cases that can weigh between 50 and 200 pounds. The combination of these two elements renders equipment upload or download both slow and dangerous, particularly in low visibility or poor weather.

Confronted with the 1/101 IBCT's dynamic employment in air assault operations or aggressive ground combat, C/426 BSB identified a gap in its standard configuration and employment. The BSMC's large equipment package resulted in a sluggish ability to establish and displace. Further, the company's reliance on FMTV platforms to transport MES/DES resulted in an inability to effectively reallocate platforms for Casualty Evacuation (CASEVAC). Consequently, C Company, 426 BSB was unable to adequately maintain the HSS principles of conformity,

mobility, and proximity to the supported unit nor maintain agile survivability against rival enemies.³

Solution Lines of Effort

C Company, 426th BSB began efforts to rectify its mobility and survivability capability gaps in August 2019, with decisions to focus on two lines of effort: scalable capabilities and equipment mobility. Specifically, leaders addressed scalable capabilities by deliberately defining and training on three distinct packages to scale the Role 2, consisting of an air assault-capable Role 1, an Initial Operational Capability (IOC) Role 2 and Full Operational Capability (FOC) Role 2. The company addressed equipment portability by implementing a Load Handling System (LHS) with a Twenty-Foot-Equivalent (TEU) containerized secondary load.



C Company, 426th Brigade Support Battalion transitioning to Full Operational Capacity (FOC) at the intermediate staging base (ISB) during a brigade-level Field Training Exercise at Fort Campbell, KY (Photo by the Author, July 2020).

Line of Effort 1: Capability Scaling

The company's Role 1, IOC and FOC packages were developed to incrementally scale the Role 2's establishment as well as allow for deliberate use of either concurrent or sequential employment of smaller packages to increase mobility and survivability based on operational variables.

The air-assault-capable Role 1 was developed as both a complementary element to the Role 2, and an identifiable capability in line with the BSMC's MTOE responsibility to provide a treatment squad to establish an area support Role 1.

The Role 1 consists of approximately eight personnel, one M997 FLA and one M1101 trailer with an MES Ground Ambulance and a portion of an MES Tactical Combat Medical Care (TCMC), with outward capabilities of two Advanced Trauma Life Support (ATLS) beds and

minimal evacuation capability, intended for litter patient movement on the landing zone. The equipment and personnel of this element can be inserted via sling load and helicopter insertion, respectively.

The Role 1 is capable of weighting the main effort during an Air Assault during Joint Forcible Entry (JFE) to build capacity on the Landing Zone (LZ) and allow the supported Battalion Task Force the flexibility to move their Forward Aid Station off of the LZ to support follow-on objective(s) while maintaining a Role 1 on the LZ. This element can also be inserted by ground to perform up to 24 hours of area support responsibilities, based on the Brigade's maneuver plan.

The IOC Role 2 is both a modular Role 2 capable of rapid establishment and displacement, as well as an intermediate capability marker during build-up of the FOC Role 2. The IOC Role 2 consists of approximately 18 personnel, seven vehicles and five trailers with medical capabilities that may include two ATLS beds, six patient hold beds, as well as minimal laboratory, radiology, dental, behavioral health, preventive medicine, and medical logistics functions. This element is led by the Company Executive Officer (XO) and Treatment Platoon Sergeant.

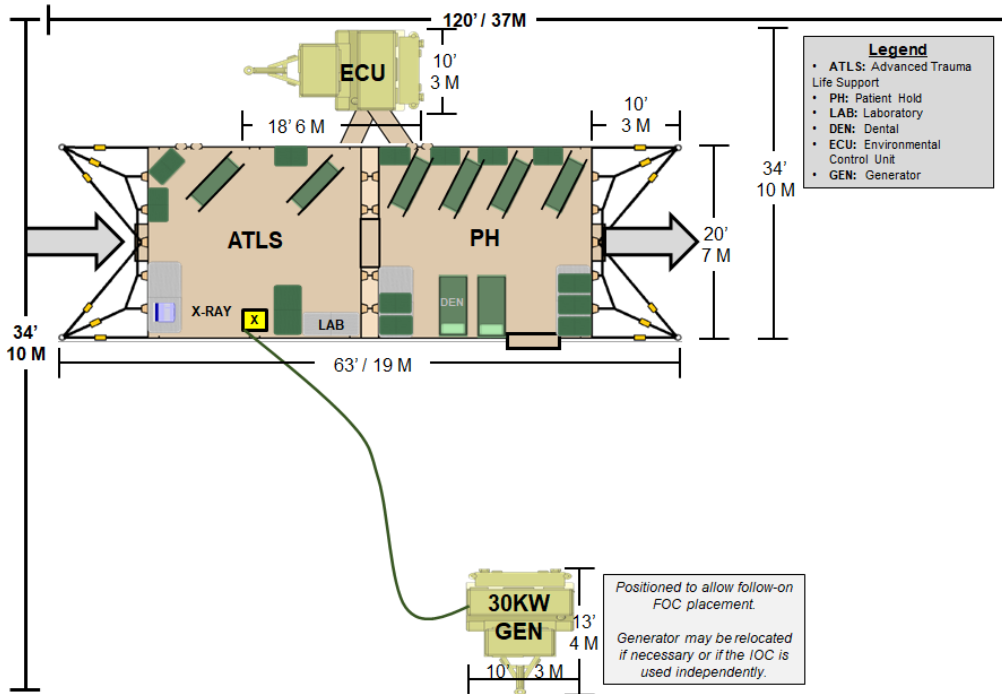
The IOC package has redundant capabilities with the personnel and equipment associated with FOC, with three exceptions. The Dentist, Nurse and portable X-Ray are unique assets assigned to the IOC package and inherently not reciprocated in the FOC. Therefore, the IOC package renders the remaining FOC element under the threshold for remaining a Role 2 once the IOC departs or displaces.

While limited, the IOC is a doctrinal Role 2 that can be employed independently and is contained within the BSB's Forward Logistics Element (FLE). If used independently rather than as an incremental step towards FOC, the Commander will assume mission command of the IOC and the XO will remain with the FOC element.

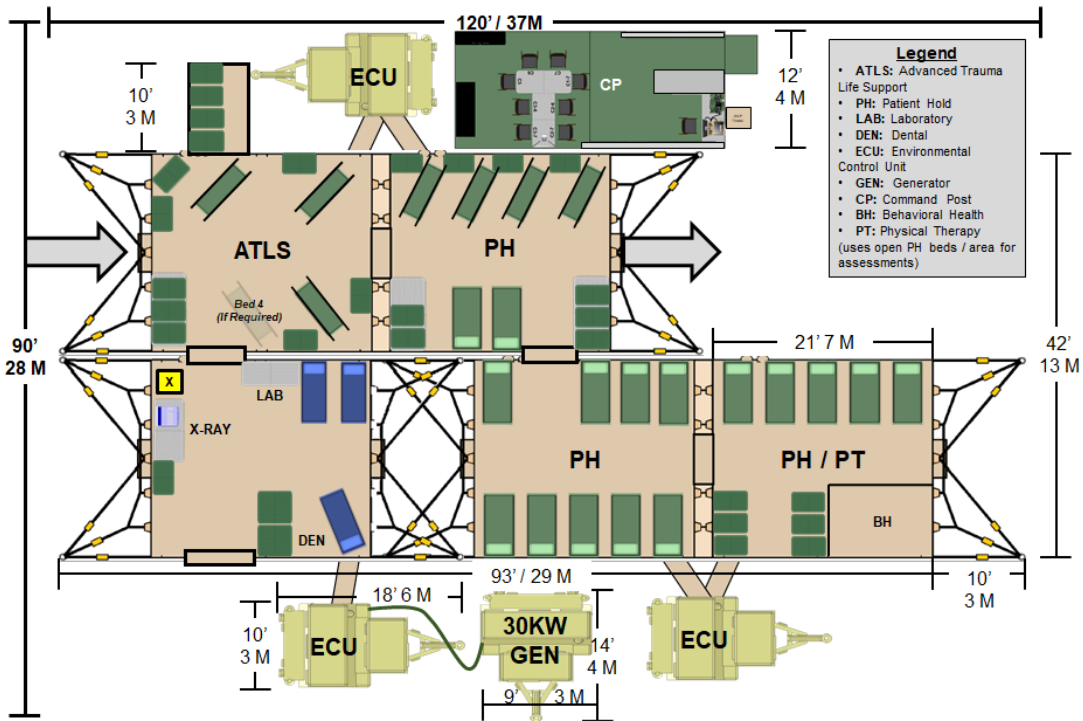
If the BSB will occupy an area of operations for less than 24 hours, the company may only establish the Role 2 at the IOC level. The IOC criteria also prioritizes and focuses the company's priorities of work towards build-up across all functional areas rather than traditional sequential efforts. By establishing the IOC Role 2 in approximately an hour, the company opens the brigade's relief valve as quickly as possible, while continuing to establish the FOC Role 2.

The FOC package is simply the categorization of the company reaching its MTOE-described capabilities, with all key equipment and personnel on-site and put into service.

C Company, 426th BSB's use of both sequential and independent capability scaling served to focus and bring efficiency to the unit's existing priorities of work, improve its mobility and survivability, as well as provide the commanders at echelon – Company, BSB and BCT – with decision-making ability to apply the BSMC's capabilities towards situational requirements.



Initial Operational Capability (IOC) setup with two trauma beds, six patient holding beds as well as baseline radiology, dental, laboratory, behavioral health, preventive medicine and physical therapy functions (Graphic by the Author, March 2020).



Full Operational Capability (FOC) Layout (Graphic by the Author, March 2020).

Line of Effort 2: Equipment Mobility

The company address the problems of equipment portability and ease of access by integrating an M1120 Load Handling System (LHS), an M1077 flat-rack and three TRICON containers to store and transport a portion of the Role 2's organic MES/DES and associated equipment. This solution garnered three benefits: ease of unload/upload, rapid deployment outload and reallocation of FMTV platforms to CASEVAC and troop transport.

The initiative's foundational efforts included advanced driver training to qualify eight LHS drivers, loan of both an M1120 and M1077 from the BSB's Distribution Company, as well as knuckling and securing the TRICON TEU to the M1077 flat-rack. A TRICON-based Twenty-Foot Equivalent (TEU) on M1077 flat-rack provides 1,038 cubic feet of available storage space and approximately 12 short tons of payload.⁴

Company leaders concurrently worked to design the TRICON's payload, which focused on equipment that provided an increase in capacity rather than consolidation of the Role 2's equipment. Leaders acknowledged the targeting vulnerability of the LHS's use, and therefore focused on avoiding assignment of unique or critical equipment to the load. Also, while the M1120 assigned to the initiative is unique, the Distribution Company is capable of picking up the flat-rack in the event of a deadline or battle loss of the BSMC's M1120 LHS.

The payload included non-IOC elements of the laboratory and dental equipment sets, additional bed capacity equipment for patient hold, resupply cases for the TCMC MES and approximately two-thirds of the company's Chemical, Biological, Radiological and Nuclear (CBRN) decontamination and treatment MES.

None of the equipment in the TEU is required to establish a Role 2 and the IOC package is independently transported. Therefore, the unit only lowers the flat-rack TEU to the ground when committing to an FOC Role 2 establishment.

The flat-rack-based TEU, once lowered to the ground by the LHS, places equipment at approximately six inches off the ground for significantly easier and safer access, keeps the equipment protected from the elements and also proves helpful in storing empty cases and loose equipment once the Role 2 is established.

Furthermore, the TEU allowed the unit to reduce its FMTV reliance by three platforms (two trucks and one trailer), allowing reallocation to CASEVAC use and troop transport. Finally, the containerized loads served to significantly reduce outload requirements by reducing equipment transfer from containers to FMTVs before training events. The TEU load remained operationally configured in garrison, except for maintenance-significant items that were loaded during the unit's N-Hour sequence.



C Company, 426th Brigade Support Battalion employs a Load-Handling System (LHS) with TRICON-based secondary load to displace the Role 2 treatment facility (Photo by the Author, March 2020).

Conclusions

C Company, 426th BSB's effectively improved its survivability, conformity and mobility through capability scaling and equipment portability. The unit standardized its leaders on both initiatives' tenets and repeatedly trained-on and tested them through deliberate field training events and leader development sessions, with consistent follow-through in documenting efforts in its Tactical Standard Operating Procedure (TACSOP).

The unit is now better prepared to employ modular assets and efficiently establish a Role 2 that is capable of rapidly establishing, displacing while providing comprehensive HSS and FHP to 1/101 IBCT in Large Scale Ground Combat Operations.

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¹ Sustainment Force Structure (Fort Lee, VA: U.S. GPO, September 2019), 579-593, accessed 03 June 2020, https://www.milsuite.mil/book/servlet/JiveServlet/downloadBody/668224-102-1-1095497/Sustainment%20Force%20Structure%20Handbook_September_2019.pdf.

² Ibid, 579.

³ ATP 4-02.55, *Health Service Support Planning* (Washington, DC: U.S. GPO, 30 March 2020), 14, accessed 03 June 2020, https://armypubs.army.mil/epubs/DR_pubs/DR_a/pdf/web/ARN21532_ATP_4-02x55_FINAL_WEB.pdf.

⁴ TM 55-8145-203-13&P, *Operator's Unit and Direct Support Maintenance Manual Including Repair Parts and Special Tools List for TRICON Container Model ESETC-01* (Washington, DC: U.S. GPO, 30 December 1996), 15, accessed 06 June 2020, <https://www.logsa.army.mil>