Team Truscott White Paper: An Army Engineer's Perspective on the Modernization Program at Fort Stewart, Georgia

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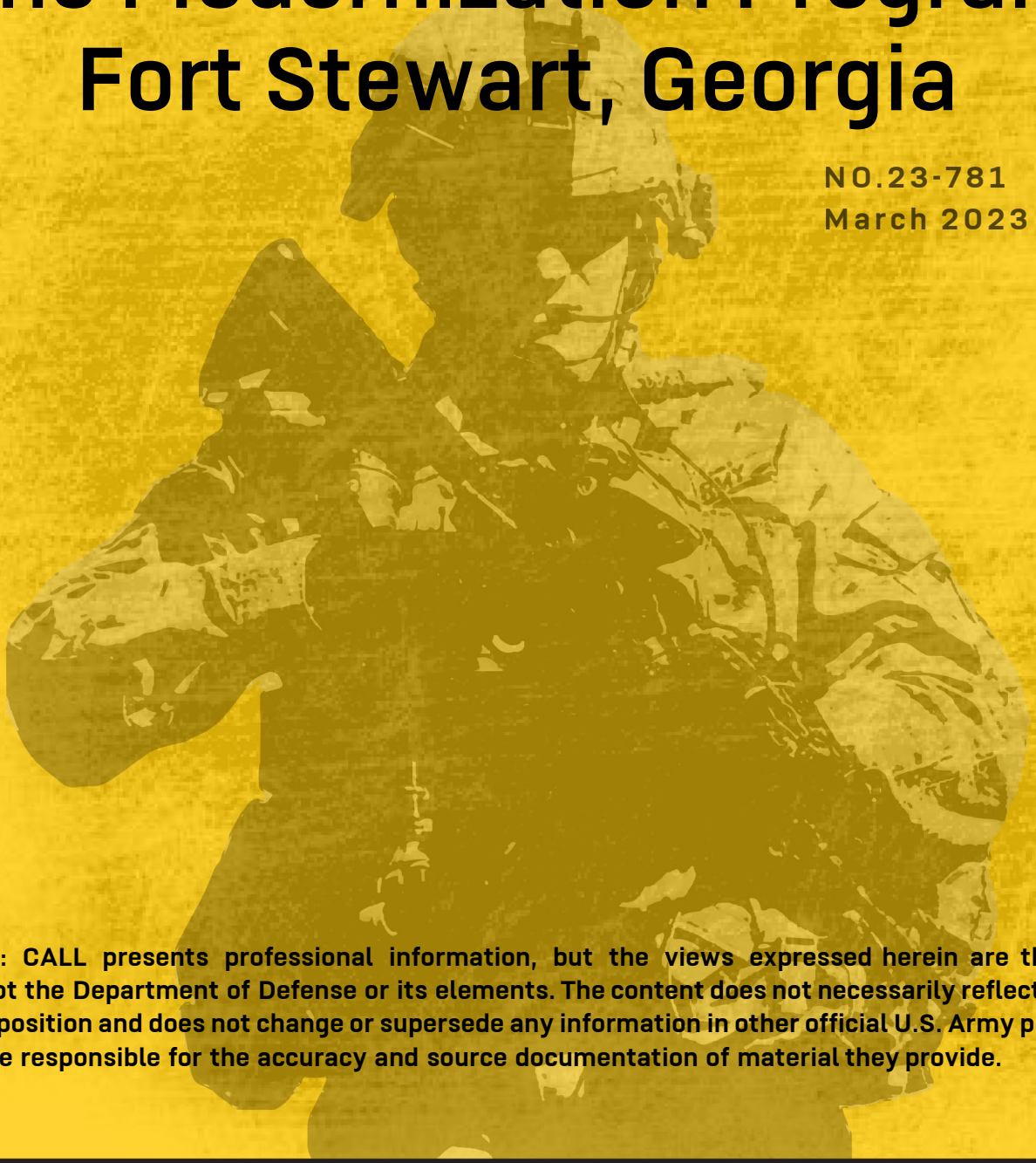

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Introduction

The 3rd Infantry Division's (3ID) Spartan Brigade modernized prior to the Army's implementation of the Regionally Aligned Readiness and Modernization Model (ReARMM). As a result, there was minimal guidance on what support modernization of the brigade would require. Concurrent force structure changes, such as unit activations and restationing actions compounded the division's modernization challenges. Division leaders devoted additional staff resources to the modernization effort and created Team Truscott to cover this blind spot.

Team Truscott was an installation level, cross functional team that would operationalize the division's approach to modernization, identify and solve problems, and share lessons learned with the rest of the Army. It included stakeholders from all the warfighting functions, personnel form the Directorate of Plans, Training, Mobilization, and Security (DPTMS), and representatives from the affected units on the installation.

The 3ID Division Engineer (DIVENG) section was a critical member of Team Truscott. While other warfighting functions focused on force structure and equipment, DIVENG focused on the impacts of modernization on existing facilities. DIVENG exercised their direct line to the installation's Directorate of Public Works (DPW) and utilized the U.S. Army Engineer Research and Development Center (ERDC) to collect and collate data needed by Team Truscott to inform senior leader decisions.

Team Truscott mitigated some of the immediate modernization challenges through synchronization of installation resources in support of equipment fielding and divestiture actions. However, shortfalls in installation facilities required action from stakeholders outside of Team Truscott, and solutions that measured in years rather than weeks or months.

3ID's integration between planners, sustainers, and Fort Stewart, Georgia's (FSGA) garrison provided advanced notice of barracks, operations, maintenance, and training deficiencies that would occur during modernization so that leaders could properly realign priorities and mitigate the risks to Soldiers, their families, and unit readiness. 3ID was able to partially mitigate these issues through local actions, but there is still a need for long-term Army wide solutions to modernization-based increases in installation requirements.

Section I: Barracks Facilities

Soldiers are at the heart of every Army program, and the conditions in which they live are critical to their well-being and performance. As part of its analysis of modernization and force structure actions, Team Truscott developed a predictive model for barracks capacity requirements on the installation by overlaying programmed construction, activation and deactivation data, force structure changes, regulatory changes that increased the authorized square footage per Soldier, and occupancy trends. This analysis identified FSGA's projected barracks requirement shortfall over time to commanders. See figure 1, FSGA barracks analysis.

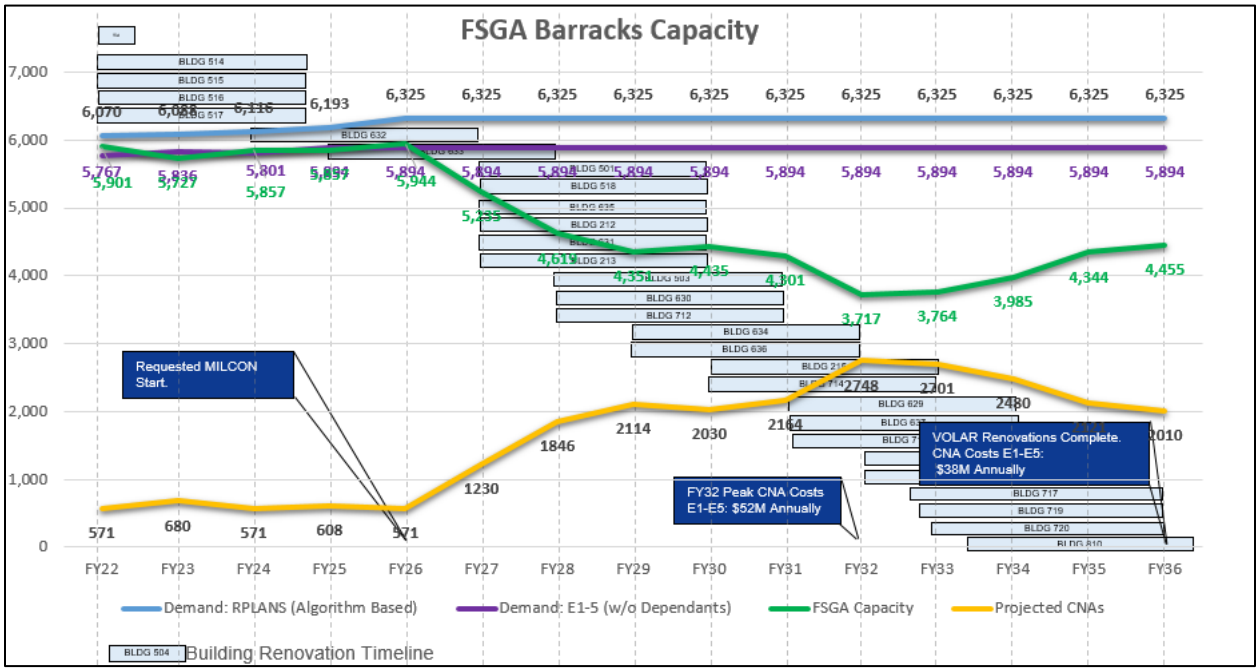

Figure 1. Fort Stewart barracks capacity

Figure 1 compares the planning factors (Demand: Real Property Planning and Analysis System [RPLANS]), projected demand provided by G1 data (Demand: E1-E5), the barracks capacity as it changes due to the Project Volunteer Army (VOLAR) Renovation Project (FSGA capacity), and the expected quantities of Certificate of Non-Availability (CNA) data. This information is used to analyze the need for military construction and CNAs for the installation and is updated quarterly by the 3rd Infantry Division's engineer cell.

To address the projected shortfall in barracks spaces, Team Truscott began generating options for commanders. Assessment of older buildings determined the floorplans to be difficult to maintain, remodel, and were vulnerable to mold growth. Additional research indicated that demographic changes within the E1 to E5 population will continue to drive increased requirements in barracks quality. As of 2020 the percentage of active duty enlisted Service members with post-high school education has risen to nearly 20% of new

recruits,[i] which means the number of personnel with specialized or easily marketable skills within the population of recruits has also increased. These factors have increased the importance of sufficient quality housing. In order to retain quality talent, housing should be comparable to that of young professionals in the civilian workforce.

Ultimately, Team Truscott recommended placing excess barracks personnel on CNA until housing could be made available based on the ability of the local economy to support a higher population of off-post Soldiers, transportation infrastructure in the local area, the installation's capacity to build new facilities, and other factors.

The cost to house the excess Soldiers off-post from fiscal year (FY) 2022 through FY36 is projected to cost the Army 509 million dollars, or the equivalent cost of constructing five 372-space barracks facilities. The average barracks facility on FSGA can house 70 Soldiers for $21,350 in annual operations and maintenance. Housing that same number of Soldiers off post for one year would cost $1,320,000.[ii] To reduce these higher expenses over the long term, FSGA has requested funding to build an additional barracks facility every other year for the next decade.

Section II: Stationing Actions and Facility Integration

The need for specialized facilities increased with modernization, but investment in those facilities lags due to shortfalls in forecasting emerging requirements. The activation of the 103rd Intelligence and Electronic Warfare (IEW) Battalion (BN) highlighted this disconnect between installation construction plans and Army capability and force structure managers.

The 103rd IEW BN is a new organization that conducts multi-discipline intelligence analysis, multi-domain intelligence analysis, targeting support, and collection in support of division multi-domain (air, land, sea, and cyberspace) effects. Facility requirements for this unit include a sensitive compartmented information facility (SCIF) and a tactical sensitive compartmented information vehicle area (TSVA). The unit's stationing packet, which provides an analysis that informs stakeholders of necessary actions and associated costs as part of unit stationing, did not program resources for construction of the required facilities.

3ID is currently providing 103rd IEW BN's SCIF and TSVA requirements through a co-use arrangement with the division's G2 facilities as an interim solution. 3ID also placed a submission into its facility investment plan (FIP) for construction of the required facilities. Even if the senior mission commander places these facilities as the number one priority on the FIP, it would take two to three years to modify an existing facility, and five to seven years to build a new facility.

To mitigate these issues, Team Truscott recommends that stationing packets be required to include an integrated facility assessment. This assessment should analyze unit facility requirements and installation capacity, then align military construction funds as part of the stationing action. This would eliminate the issues faced by the 103rd IEW BN and other enabler units.

In 2016, the United States Government Accountability Office (GAO) released a report detailing the need for better risk assessments regarding planned changes to the Army's force structure, especially enabler units.[iii] By not programming military construction projects during stationing, installations must potentially choose between installation needs and ReARMM requirements, leading to outdated facilities.

Section III: Maintenance Facilities

In addition to specialized facility requirements, modernization and stationing actions place pressure on the installation's sustainment infrastructure. Some of this pressure is temporary. The mass turn-in and issue of equipment requires additional support elements such as fielding teams and modernization displacement and repair sites (MDRS), whose maintenance facility requirements place additional pressure on the installation. These temporary requirements require the equivalent of a battalion headquarters, and half of a battalion motor pool to support. With no forecasted end date to either temporary facility, this requirement will continue to weigh on the installation's capacity.

A second issue facing installation maintenance facilities is one of solvency. Existing maintenance facilities were constructed to meet the requirements of older or different equipment. These facilities are now housing new systems without being refurbished to meet the new operational requirements.

As an example, the 3rd Combat Aviation Brigade (3CAB) possesses the most modern aircraft in the Army, but utilizes hangars built as early as 1936 to perform maintenance and conduct daily operations. Hangar closures due to significant health risks posed by high levels of hexavalent-chromium paint and asbestos have further reduced capacity. To continue operations, 3CAB consolidated a battalion's worth of personnel and equipment within the footprint of a typical aviation company. Additionally, limitations to hangar survivability routinely requires 3CAB to evacuate aircraft to Fort Benning because the aging structures do not meet hurricane survivability requirements, consuming unit operational time and energy.

Hangar replacement is scheduled to take place over the next fifteen years, but this timeline is too late while Soldiers continue to work in sub-standard conditions. As part of a doctrine, organization, training, materiel, leadership and education, personnel, facilities, and policy (DOTMLPF-P) analysis, a temporary stationing action for some of 3CAB to Wright Army Airfield was considered. This plan was thought to be unfeasible due to time and construction constraints.

Team Truscott's engineer has proposed the "crashing" of the replacement program during 3CAB's next several deployments. Project crashing is a process that accelerates a project's timeline by assigning additional resources to it. For construction projects, this is generally; additional crews, incentive money to increase performance, and overtime funding. Project crashing is generally limited by the contract and needs to be a deliberate process to prevent needless overspending.

The planning and massing of refurbishment projects in synchronization with deployment timelines mirrors the principles of ReARMM and could serve the Army at large, preparing installations to receive modernized equipment upon return to their home station.

As another example, 2/3ID (Spartan Brigade) possesses the most advanced main battle tank in the world but is unable to maintain it within the unit's assigned footprint. Approximately one half of 3ID's armored brigade combat team (ABCT) motor pools are inadequate to properly service and store the unit's equipment. Spartan Brigade's facilities were designed to support an infantry brigade combat team (IBCT). When the brigade converted to an ABCT, shortfalls in tactical vehicle parking and maintenance bays were inevitable. Current maintenance facilities meet just 70% of unit requirements, with a parking shortfall of approximately 50%. As a result, 2/3ID must send vehicles to the installation main cantonment area to meet service schedule requirements.

Team Truscott recommends that the Army consider modular maintenance facilities as a way ahead for stationing new units. As the Army continues to change force structures, our installations must be able to support units of various compositions. Over the past decade, the quantity and compositions of active-duty brigade combat teams has changed multiple times and it will likely continue to do so to achieve overmatch against threats.[iv]

Installations have the challenge of balancing space utilization, budgets, and variability in space and facility management. Cost reduction is one of the main priorities of design, but modularity and flexibility may need to be a higher priority for motor pools. A modular maintenance facility plan based on the largest formation (an ABCT), could provide the Army with a solution that would accommodate all units, and provide a high degree of flexibility for future force structure changes.

Section IV: Training Support to Modernized Units

The final consideration to modernization was an analysis of existing infrastructure to support training for the modernized ABCTs. When modernization began, Team Truscott identified and began mitigating problems with the training infrastructure at FSGA as they were identified.

The Abrams M1A2 System Enhancement Program Version 3 (SEPv3) is the heaviest tank in the U.S. Army inventory, weighing over 74 tons. An assessment of FSGA infrastructure revealed that timber bridges in the training areas were marked with a military load classification (MLC) of 70. This created concern that the bridges were inadequate to support the newest M1. This gap necessitated studies on the weight capacity of all the bridges throughout the FSGA training areas. FSGA DPW conducted surveys of all the bridges and determined that their true MLC was 150 making them capable of like vehicle recovery, M88A2 recovery, and heavy equipment transporter (HET) recovery.

After the study, U.S. Army Forces Command (FORSCOM) guidance for M1A2 SEPv3 transport and recovery which requires two like vehicles to recover a disabled vehicle. An

additional study through the Engineer Research and Development Center was commissioned to study the feasibility of recovering a single M1A2 SEPv3 with two others while crossing the timber bridges. In short, the study examined the most extreme stress-strain examples and found that the bridges could support the three-vehicle recovery method.

While the only infrastructure change required was changing the MLC signs on the bridges, significant risk to the force was mitigated by reviewing all the bridges on the installation.

In addition to reviewing the infrastructure leading to the training areas, Team Truscott determined that the training areas themselves do not fully support the requirements of modernized units at FSGA without modification.

For example, the Booker Range is a multi-purpose range complex designed to support table XII platoon qualification up to 120mm systems. The downrange data and power infrastructure, which was installed in 1987, are incompatible with the new stationary (digital) targets currently required.

FSGA is mitigating this issue through non-standard means by using radio frequency (RF) target adaptors, which limits 3ID to executing a degraded table XII qualification. The degraded capacity of Booker Range increases the overall shortage of mechanized equipment ranges at FSGA. If the RF target solution fails, Booker Range becomes inoperable as a viable training facility for the installation, further degrading our ability to train 3ID units, non-tenant, and COMPO 2/3 units.

To correct these issues, 3ID submitted a request through the range control master plan for the replacement of the data and power lines at Booker Range. Approval of these funds would restore our table XII capabilities on that range for the next several decades.

As the Army continues to modernize, division engineer sections need to stay tied into the master plans and engineering division within their installation DPWs. Installations need to conduct an inventory of bridge MLCs to ensure that signs match the bridge capability, and that the true MLC meets operational requirements. If they do not match, individual job orders need to be submitted to fund the sign replacement which can take over a year from submission. Additionally, we recommend that installations request additional funding for range renovations to ensure that their training facilities meet the requirements for the Army's most modernized equipment.

Conclusion

During 3ID's first modernization cycle, pre-existing facility challenges were compounded by modernization and stationing actions at FSGA. The complexity of these issues required a diverse team to assess the challenges and to provide innovative solutions and risk mitigation measures. Team Truscott's integration between planners, sustainers, and FSGA's garrison provided advanced notice of barracks, operations, maintenance, and training deficiencies resulting from modernization requirements. This integration enabled

leaders to properly realign priorities and mitigate risks to Soldiers, their families, and unit readiness. As other installations plan for their modernization cycles, they must evaluate the status of their facilities through a multi-functional organization that can provide solutions that are synchronized with emerging requirements.

Moving forward, 3ID plans to include members from U.S. Army Installation Management Command and U.S. Army Materiel Command (USAMC) in regular meetings to increase visibility for external stakeholders and the opportunity to request resources in the annual facility investment plan. The cyclic process of ReARMM will continue to change equipment, structure, and capabilities requirements as new equipment is procured and fielded. Programming facility requirements now could potentially meet the modernization needs for the Army of 2030.

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Endnotes

[i] Department of Defense (DOD). (2020). *2020 Demographics: Profile of the Military Community.*

[ii] Data received from FSGA's budget branch within DPW. Operation and maintenance (O&M) costs as well as occupancy capacity for three different types of building structures were averaged to determine the average O&M and occupancy for barracks at FSGA.

[iii] United States Government Accountability Office. (April 2016). *Comprehensive Risk Assessment Needed for Planned Changes to the Army's Force Structure.* Page 20.

[iv] ibid. Page 3.