Strong Point Huff: Building the LSCO Fight

By Captain Matthew T. Stanley and First Lieutenant Edward P. Lara

As the U.S. Army shifted from counterinsurgency operations to large-scale combat operations (LSCO), the U.S. Army Forces Command (FORSCOM) asked the command of the Joint Readiness Training Center (JRTC) and the 687th Engineer Construction Company, 46th Engineer Battalion, 20th Engineer Brigade, Fort Polk, Louisiana, to provide training opportunities as the Army moves forward with the new era of combat. JRTC and Fort Polk vetted several options for building a bunker and trench system using troop construction and/or civilian contracted workers. Ultimately, FORSCOM decided to construct a fortified defensive position with the use of troop construction assets, thus conceptualizing Strong Point Huff.

The 46th Engineer Battalion volunteered to take on the project, and the 687th Engineer Construction Company—enabled with support from battalion staff, the Forward Support Company, the Headquarters and Headquarters Company, survey and design staff, and the 573d Clearance Company—took the lead. Strong Point Huff, the largest Army troop construction project in decades, has demonstrated that engineer construction companies are capable of completing large-scale construction projects (which, in recent history, have been awarded to civilian contractors). The use of troop construction for the Strong Point Huff project saved the Army roughly $1.2 million dollars in operational and labor costs.[1] More importantly, the resulting bunker and trench system will provide Soldiers with a heavily fortified position during simulated combat experiences against well-established near-peer enemies. If the training opportunities afforded by Strong Point Huff save even one life during future combat actions, then the 46th Engineer Battalion, JRTC, FORSCOM, and the Army have succeeded.

JRTC and the Fort Polk Operations command group named Strong Point Huff in honor of Command Sergeant Major Paul B. Huff. During World War II, Huff (then a corporal) was serving in the 509th Parachute Infantry Regiment, Fort Benning, Georgia, when the unit earned the nickname "Geronimo." The 509th participated in the Italian Campaign, in which Corporal Huff earned the Medal of Honor when he led a six-man team on a patrol to locate the source of indirect fire sustained by its platoon. Huff and his team received mortar, machine gun, and small-arms fire during the patrol. After determining that it was too dangerous for his team to continue, Huff went on to patrol alone; with little to no cover available, he continued to receive direct and indirect fire. However, Huff went on to destroy an enemy machine gun position and the crew. He then quickly recorded the remaining enemy positions, weapons, and unit disposition before returning to his platoon. The information that Corporal Huff had gathered during the patrol was vital, and it led to an allied patrol (including a group under his leadership) to rout the enemy position. Ultimately, the patrol ousted a 125-man enemy company, killing 27 Germans and capturing 21.[2]

Defilade layer heights being checked with vehicles

Strong Point Huff is composed of a system of five crew-served machine gun concrete bunkers, one concrete command bunker, three vehicle fighting positions, seven 25-meter-long trenches, 183 linear meters of concrete wall, and 23 dragon's teeth (square-pyramidal fortifications of reinforced concrete, which surround the perimeter). The machine gun bunkers along the perimeter are connected by trenches, with a central trench leading to the command

Aerial photograph of the project site after drainage emplacement

bunker. The design called for the trench walls to be constructed in sections and tied in with steel I-beams to ensure structural soundness and ease of maintenance. Together, the machine gun bunkers provide a 360-degree view along the perimeter, with interlocking sectors of fire.

Construction began by clearing and grubbing the site, located at the intersection of Six-Mile Creek and Fullerton Road in the JRTC "box." Using two D7 bulldozers, Soldiers spent 3 days removing trees, debris, and brush from the site. Once the clearing and grubbing were complete, the 687th Engineer Construction Company excavated the site to a depth of 1.7 meters. Upon excavation, Soldiers placed corrugated perforated pipe throughout the footprint of the planned bunker and trench system to allow for proper drainage. The drainage system followed the pattern of the center of the trench system, with two additional pipes running diagonally from the system. To prevent standing water during heavy rain, the pipe was extended from the site to the drainage ditch already present at the intersection. The bunker and trench system design incorporated a 1 percent slope throughout the site to prevent flooding.

Concrete being poured for the I-beams and bunker footers

Vertical-construction engineers place concrete for the trench walls.

The vertical-construction platoon of the 687th concurrently used 2 x 4 and 2 x 6 lumber to construct wooden forms. The forms consisted of wooden boxes that would later be laid on a flat surface for placement of the concrete walls and bunkers. Nine different wall sizes (with a total of 126 wall sections ranging from 4 feet to 10 feet in length) were included in the design. The two horizontal-construction platoons sequentially completed the bunker and trench system in four quadrants. This allowed the vertical-construction platoon to create the wooden forms for one section and then later reuse those forms for the other sections, thereby saving time and materials. Based on its size, each wall required 0.20–0.75 cubic meters of concrete. Concrete-mixing trucks from local vendors placed 23–31 cubic meters of concrete on a weekly basis. The walls were allowed to set for 5 days before the platoons removed the forms; they underwent an additional 10 days of set time before being transported to the project site.

While the vertical-construction platoon constructed forms and placed concrete, the horizontal-construction platoons used skid steer auger attachments to augur holes for I-beam emplacement. The I-beams were placed into 0.6-meter-diameter, 2.1-meter-deep holes. After the I-beams were placed in the holes, Military Operational Specialty (MOS) 12T–Technical Engineers, verified the I-beam grid coordinates, angles,

and depths. The I-beams were blocked and braced with 2 x 4 lumber, creating a "box" around them to ensure that they would not sink or shift. The company placed, blocked, and braced 209 I-beams to meet project requirements. Additionally, the hydraulic jackhammer attachment for the high-mobility engineer excavator was used to dig 0.6-meter-deep footers for each bunker.

I-beam placement was a crucial part of the project, and precision was key during this phase. After blocking and bracing most I-beams, 62 cubic meters of concrete were placed in the holes between the hours of 0300 and 0630 (due to the limitations of the contractor that was supplying the concrete). This required all available personnel, along with an externally procured concrete pump truck. The concrete was allowed to cure for 7 days before wall emplacement officially began.

A Soldier serves as a ground guide for the crane operator while other Soldiers assist in emplacing bunker walls.

The 20-ton 687th Engineer Construction Company crane lifted and emplaced the walls between the I-beams. In the interest of safety, only essential personnel remained onsite during crane operations and safety measures were utilized while sliding the walls into place. Bunker emplacement occurred concurrently with emplacement of the trench walls. While some Soldiers completed Quadrants 1 through 4 of the bunker and trench system, others applied a 15-centimeter layer of gravel to the trench floor to prevent a heavy impact on the system due to rainy weather.

As the bunker and trench system neared completion, the platoons excavated vehicle fighting positions, including hide, hull, and turret defilade leveling. Although the defilade design is optimal for the BMP-1 Infantry Fighting Vehicle (commonly used by the Geronimo Regiment at JRTC), it does account for the future use of the M3 Bradley Cavalry Fighting Vehicle. For the defilade walls, 2.1-meter-wide, 2.1-meter-deep holes were augured for 8 x 8 lumber to be placed and held by concrete footers. The 8 x 8s were blocked and braced in the same manner as the I-beams. Seventeen 8 x 8s were required for each side of each defilade, for a total

A crane emplaces the final walls.

of 102 8 x 8s among the three vehicle fighting positions. The holes were filled with concrete to anchor the 8 x 8s, and the platoons used railroad ties to build the defilade walls. The railroad ties were stacked in a 1/3, 2/3 brick-lay pattern for maximum structural strength. In total, the company stacked 1,200 railroad ties weighing roughly 250 pounds each. Once the walls were complete, concrete deadman anchors were placed, with steel cables tied onto the 8 x 8s, and the holes were backfilled with dirt placed at a 45-degree angle from the wall.

Strong Point Huff will serve as a landmark at the premier Army combat training center for decades to come, and it will forge the next generation of warfighters. The magnitude of the construction at Strong Point Huff demonstrates the scale of work that troop construction assets can complete. Strong Point Huff serves as a key milestone in the Army transition to LSCO and the need to train how we fight.

Endnotes:

[1]Heath Coles and Andrew Flynn, "Strong Point Huff: 46th Engineer Battalion Support to Increased Lethality at the Joint Readiness Training Center," *Army Engineer Association*, 2022, <https://armyengineer.com/army-engineer-association-summer-2022/>, accessed on 6 December 2022.

[2]Katie Lange, "Medal of Honor Monday: Army Command Sgt. Maj. Paul B. Huff," U.S. Department of Defense, 8 February 2021, <https://www.defense.gov/News/Feature-Stories/Story/Article/2492065/medal-of-honor-monday-army-command-sgt-maj-paul-b-huff/>, accessed on 6 December 2022.

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