

*Spring 2023*

# Army Engineer

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*Magazine*



**ENFIT Training, 412th Theater Engineer Command  
August 27, 2022**





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## MG Bryan G. Watson, USA, Retired President, AEA



To the Members of the Engineer Regiment,

There is no doubt in my mind, that we – as Army Engineers -- belong to the greatest, most exciting, and fulfilling professions in the world. We are a team of immensely diverse experts that is equally unified in our determination to solve our Army and our Nation’s toughest problems whether at the tactical edge of operations, on our military installations, or across the communities of our homeland...and beyond. We are an incredible profession!

But like any profession, we have to have a professional dialog to exchange solutions to current challenges and share perspectives on the future. We must connect with one another in a healthy professional discourse that involves all ranks, all engineer disciplines, and all components. It is vital to

maintaining our professional edge and relevancy. The Chief of Engineers, LTG Scott Spellmon, asked AEA to revitalize the Army Engineer Magazine and make it our professional journal of choice. Connecting the members of this Regiment with ourselves and with our industry partners is part of AEA core missions. We are well on our way to answering the Chief’s call.

We dramatically increased our circulation of Army Engineer Magazine! Today, we send 10 printed copies of Army Engineer Magazine to every Engineer Battalion/District/Brigade/TEC across all components...at no cost to the unit. This puts our professional journal where the profession lives and sharing ideas is mission critical...among our Soldiers and Civilians at the tactical edge. My thanks to the Corporate Sponsors that enabled this vision to become reality. We have also restored circulation of hard copies of Army Engineer Magazine to our members albeit through a paid subscription for now at only \$25 per year; that’s less than 4 Starbucks coffees per year!

We have also brought the “Essayons Club” writing program back with monetary awards to incentivize young leaders to drive our professional discourse with their own experiences. Essayons Club Outstanding Award goes to CPT Nathan Hall from the USASOC Engineer Office and 1LT Hannah Gillan from the 618th ESC (ABN). The Essayons Club Superior Award goes to SPC Kristofer Smith from the 59th CEC-A. As the first winners of the Essayons Club Award, each Soldier will receive a \$250 award. These are junior leaders that are making a difference, sharing what they learn, making the profession better...leading up! Read their articles in this quarter’s magazine. But more importantly, FOLLOW THEIR EXAMPLE!

Cross-talk is a hallmark of a great outfit; professional discussions about present-day challenges and the future are hallmarks of great professions and passionate professionals. Help your Army Engineer Association make the Army Engineer Magazine your professional journal of choice. Write an article, help others learn from your experiences, and make your Regiment better. To Subscribe to get your own copy or buy one for another member of the Regiment, use the QR code below.

See you at Regimental Week at Fort Leonard Wood!

Lead to Serve,

Major General Bryan G. Watson, USA, Retired President, Army Engineer Association



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**LINDA S. MITCHELL, EDITOR  
ARMY ENGINEER MAGAZINE**



Hello! We are so excited to welcome the Spring issue of the Army Engineer Magazine. Congrats to our Essayons Club Award Winners and well done!

The articles in this issue offer insight into the nuances of an engineering career in the Army, examination of policy, current projects, and training. We also have articles that honor a hero and points out programs that support the Soldier and their families.

As always, I hope our magazine offers to you a range of articles to inspire, educate, and enlighten.

“Those who touch our lives, they stay in our hearts forever. Greatly loved, deeply missed. Their life was a blessing, their memory a treasure. There are no goodbyes for us.....”

Best,

Linda

Cover Photo: The U.S. Army Corps of Engineers Army Geospatial Center's Engagements Branch hosted an Engineer-Focused Intelligence Training for members of the 412th Theater Engineer Command on Aug. 27, 2022. Photo courtesy of the Army Geospatial Center.

Photo: SFC Paul R. Smith Middle School dedicated in his hometown of Tampa, FL on April 27, 2009.

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# WHAT STANDS IN THE WAY, BECOMES THE WAY

**“I recommend against that” they said.**

**“You’ll get more out of coming to my Brigade” he said.**

**“I have friends that went to Group and it crushed their career” they said.**

**“Going to Group is a waste of time” they said.**

**“Being a Special Operations Group Engineer is a career killer” they said.**

**“Like a magnetized needle floating on a surface of oil, resistance will unfailingly point to true north, meaning that calling or action it most wants to stop us from doing.”**

**“Thank you for the input” we said, and set our azimuth for true north. The journey since has been amazing!**



BY MAJ JES BARRON, 1LT ETHAN PRESS, MR. RICKEY WHITFIELD, CW2 ALEXIS FORCHINEY, SFC ZACHARY MAXWELL, SFC PAUL HERNANDEZ, SSG LANCE BURKHEIMER, & SSG SHALIYAH JONES

Counter to general understanding, Special Operations Engineer positions are incredible opportunities for the individual, the Engineer Regiment, and the SOF community. Serving as an Engineer in Special Operations is an incredible opportunity for the individual, the Engineer Regiment, and the Special Operations community. The individual experiences an exciting, rewarding, and developmental assignment; the Engineer Regiment showcases its best talent, contributes to an important mission, and makes a human capital investment with a high return; and the Special Operations community benefits from the Engineer expertise and mindset.

## What is the Group Engineer?

The U.S. Army Special Operations Command (USASOC) has around 270 Engineers assigned to it from nearly every Engineer Military Occupation Specialty (MOS) and rank. Most of these Engineers fall under 1st Special Forces Command and are distributed among the five active-duty

Special Forces Groups. Each Group has an Engineer section and Geospatial team on the Group staff, and an Engineer Support Section in the Group Support Battalion.

The Group Engineer section on the Group staff advises the Group Commander (O6) on engineering, develops, advocates, manages, and quality assures all construction activities to include Military Construction (MILCON), Facilities Sustainment, Restoration, & Modernization (FSRM), and troop construction, both at home-station and overseas, and provides value to operations and intelligence through the application of the Engineer mindset.

The Engineer geospatial team works within the Intelligence Section on the Group staff and provides geospatial capabilities and analysis for Special Operation intelligence and operations.

The Engineer Support Section provides the troop construction to support Special Operations training and missions. It is also an outstanding vehicle for building relationships with partner nations.

## Benefits of being a member of the Group Engineers

In the past six months, the authors of this article, who are in 7th Special Forces Group (Airborne), advocated for a Child Development Center MILCON up through the highest levels of the Department of Defense, managed sixty-three FSRM projects that are at various stages of development and construction, completed troop construction projects to support Special Operations training and facility improvements at both home-station and overseas, and conducted multiple site assessments in Central and South America to support future construction missions. There is arguably no other Engineer job in the Army with the breadth and depth of engineering being executed on a daily basis as is experienced as a Group Engineer, and arguably none with more freedom of maneuver to run with the Commander's intent and make impactful engineering contributions to an important mission.

Our electricians, carpenters, plumbers, and geospatial engineers gain invaluable experience putting their trades to use, get to work with partner nation engineers and learn new skills, and are constantly deploying to new countries and experiencing the world. Our Non-commissioned Officers repetitively punch well above their weight-class; it is not uncommon for an E6 to be the senior Engineers in a foreign country leading a construction project, obtaining materials from local vendors, and working with partner forces. Our Warrant Officer is the linchpin of overseas Engineer operations, translating mission requirements into technically executable plans and lining up all the overseas construction logistical requirements. Our ENSOF-DP Officer has a steep learning curve upon arrival, but with his/her hands in everything as the Deputy Engineer, he/she gets to experience at least one full fiscal year project cycle, apply technical knowledge, earn a Project Management Professional credential or Professional Engineer license, and make a difference to an important mission.

Finally, the Group Engineer leads all Engineer operations within the Group, advises the Group Commander on engineering, develops, advocates, manages, and quality assures all construction activities, and provides value to operations and intelligence through the application of the Engineer mindset. Working with the tip of the spear as a Group Engineer is exciting, rewarding, and incredibly developmental – quite the opposite from a career killer.

## Benefits to the Engineer Regiment

By sending Engineers to Special Operations, the Engineer Regiment contributes to an important mission, showcases its talent, and makes a human capital investment with a high return. While the majority of the Department of Defense focuses on preparing to win large-scale combat operations (LSCO), the Special

Operations Community is actively making sure we do not reach this point. The competition and crisis tail behind armed conflict in the competition continuum described in Field Manual (FM) 3-0 - Operations is quite long and the National Defense Strategy identifies that “competitors now commonly seek adverse changes in the status quo using gray zone methods.” This is where Special Operations make a difference, and by extension, the Group Engineers.

The Special Operations Community is truly an elite organization, the Tip of the Spear, but as the last Special Operations Forces (SOF) Truth states – “most Special Operations require non-SOF assistance.” By sending the best Engineers to Special Operations, the Engineer Regiment provides technical expertise and the critical Engineer mindset to the competition our elite units constantly engage in. In return, the Engineer Regiment receives back a wealth of tacit knowledge and experience due to the fast paced and enabled opportunities Group Engineers are exposed to.

## Benefits to the Special Operations Community

When he first arrived at 7SFG(A), our Construction Engineer Technician Warrant Officer was given the following advice from Group's Operations Warrant Officer – “We aren't thinking facilities and infrastructure. If you can do this for us you'll make a significant impact.” The premise of this wisdom is that infrastructure influences everything. We Engineers are uniquely qualified to have that influence, and it is this domain expertise that the Special Operations Community benefits from. We Engineers provide the “F” in the DOTMLPF-P framework. Additionally, while the Special Operations Community are elite problem solvers themselves, we Engineers approach problems differently, providing the community diversity of thought. Finally, like nearly every MOS on the Group staff and in

the Group Support Battalion, we will return to the operational Army, but we do so with an understanding of the quiet professionals, how they fit into the conflict continuum, and how they can shape and impact large scale combat operations.

Counter to general understanding, Special Operations Engineer positions are incredible opportunities for the individual, the Engineer Regiment, and the Special Operations community. It is hoped that this article dispels the myths about the Group Engineer positions, but if not, at least encourages the next generation to use the resistance as a guide – the impediment to action advances action. “What stands in the way becomes the way.”

*This tables depicts the composition per the MTOE.*

Title	Grade	MOS
Senior Geospatial Engineer	E6	12Y
Sergeant		
Geospatial Engineer Sergeant	E5	12Y
Geospatial Engineer	E4	12Y

Title	Grade	MOS
Construction Engineer Technician	CW2	120A
Platoon Sergeant	E7	12H
Construction Squad Leader	E6	12H
Team Leader	E5	12B
Interior Electrician	E5	12R
Interior Electrician	E5	12R
Carpentry/Masonry Sergeant	E5	12W
Plumber/Pipfitter	E4	12K
Interior Electrician	E4	12R
Plumber/Pipfitter	E3	12K
Interior Electrician	E3	12R

*Composition per the Mission Table of Organization and Equipment (MTOE), plus the addition (ENSOF-DP).*

Title	Grade	MOS
Group Engineer	O4	12A
Engineer Operations Sergeant	E8	18Z
Senior Engineer Sergeant	E7	18C
Construction Operations Sergeant	E6	12H
ENSOF-DP	O2-O3	12A

*Competition Continuum-While the majority of the DoD focuses on preparing to win LSCO, the SO Community is actively making sure we do not reach this point.*



**MAJ Jes Barron, PE, PMP is the 7SFG(A) Engineer and leads all Engineer operations within the Group.**

**1LT Ethan J Press is the 7SFG(A) Deputy Engineer filling the ENSOF-DP position. He develops, manages, and quality assures both CONUS and OCONUS sustainment, restoration, and modernization projects. He is currently studying for the Principles and Practice of Engineering (PE) Exam.**

**SSG Lance W Burkheimer is the 7SFG(A) Construction Operations Sergeant and he is responsible for routine maintenance, facility sustainment, and space management.**

**CW2 Alexis A Forchiney is the 7SFG(A) Construction Engineer Technician and leads the Engineer Support Section. He develops and coordinates OCONUS projects and leads his Soldiers in these construction operations.**

**SFC Paul M Hernandez is the 7SFG(A) Senior Construction Operations Sergeant and develops, manages, and quality assures both CONUS and OCONUS sustainment, restoration, and modernization projects.**

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**SFC Zachary A Maxwell is the 7SFG(A) Engineer Support Section Platoon Sergeant. He leads the Engineer Support Section in their construction operations and provides quality control of their projects.**

**Mr. Rickey D Whitfield is the 7SFG(A) Civilian Deputy Engineer. He served 20 years as an Engineer in the USAF prior to transitioning to civilian service. He provides continuity within the 7SFG(A) Engineer team, translates Army terminology into Air Force, and provides quality assurance for the entire 7SFG(A) Engineer program.**

**COUNTER TO GENERAL UNDERSTANDING, SPECIAL OPERATIONS ENGINEER POSITIONS ARE INCREDIBLE OPPORTUNITIES FOR THE INDIVIDUAL, THE ENGINEER REGIMENT, AND THE SOF COMMUNITY**



The Army Engineer Association appreciates the generosity of industry that supported the 2022 Army Engineer Regimental Awards. These rewards are given by the Engineer School at FLW to the many outstanding members of the Engineer Regiment in the Active, Reserve, and National Guard Components of the Engineers.

<p>1LT William D. Munson Award</p>  	<p>SILVER de Fleury Veteran Recognition &amp;</p> 
<p>LTG (Ret) John W. Morris Best Civilian Award</p> 	<p>VAN AUTREVE Engineer Soldier of the Year</p> 
<p>Best Warrant Officer Award</p> 	<p>Super Sapper -Best Engineer Soldier Award</p> 
<p>Army Combat Engineer Sergeants (ACES) Award</p> 	



## Utilization of GIS in Engineer Operations in Defense Support of Civil Authorities

*CPT Andrew L. Hutchinson*

Geospatial Information Systems, or GIS, is a powerful tool that can aid Engineers in supporting State agency leaders within the respective Emergency Management Agencies. It can allow Engineers supporting States to monitor, plan, and anticipate for various emergency operations during disasters impacting our communities. Gathering information from drones, satellite imagery, sensors and other mediums can be critical in making quick decisions in response to potentially catastrophic natural disasters. As the times keep passing us by, States are no stranger to natural disasters, from eruptions of volcanoes to large scale power outages caused by historical winter storms, and everything in between. At times, Army Engineers can be called upon to support the State governments to aid in rescue efforts, traffic control, or debris cleanup with utilization of Army Engineer equipment.

Similar to how GIS can be utilized during tactical operations, GIS can also be used in Defense Support of Civil Authorities during times of disaster that could affect areas that our families and friends call home. Engineers can use the information collected from sources to plan and recommend as they would in tactical operations. Engineers can utilize and apply similar concepts that is normally employed when thinking about response to enemy forces, such as planning the defense, to that of natural disasters. Instead of providing support and enabling allied forces, we shift that focus to the citizens and communities that are impacted by disasters.

The application and use of GIS is more than simple maps or satellite imagery. As storms develop or volcanoes erupt, we can use the information from available resources to track trends or paths that a storm may be traveling. Due to the inherent chaotic nature of natural disasters, we are unable to make absolute predictions what will occur. However, through continuous monitoring using active and passive sensors, we can provide State leaders on recommended actions that may be available. Recommendations can range from simple evacuation routes, to alternate site selections for mobile communications towers, or when to close main roads.

Dangers or pitfalls of using GIS during disaster responses is the amount of data that is available. What may initially on the surface sound like a good problem to exist, can be a double edged sword. Though preferable over no data at all when responding to disasters, the sheer amount of data available to collect can easily lead to paralysis by analysis. A reason this can occur with disaster response is because disasters rarely go as we might expect, let alone want it too. It is part of an individual responsibility of the Engineer participating in DSCA to not succumb to going down multiple rabbit holes and wondering "What if?" all the time because time is critical.

Interpreting the data quickly using GIS is critical, which could potentially lead to citizens evacuating an area in time or becoming stuck requiring extraction. Though not enemy forces, Engineers can and should apply the operational variables, PMESSII-PT, to disaster response to aid and focus directions of plans. An easier starting point may be to focus initially on infrastructure or physical environment when looking at available data within GIS software. Such examples would be locating and determining trigger points when back up power generators should be started in the event power plants or transmission lines are taken down. Engineers analyzing further can support State Emergency Management Agencies determining other impacts to the state such as economic or even political impacts.

Other limitations of using GIS during disaster response are the reception of data and information where sensors, and ultimately the location of the disaster. States can anticipate where certain disasters might occur, but if there is not an ability to collect data for a particular need, such as air quality monitoring during a volcano eruption, it can dramatically change the decision on response time and evacuation. States could plan and assume a worst case scenario when data is absent, however, the impact on time could very well be the difference between someone successfully evacuating and area or requiring rescue.

Further education and training for our Engineers utilizing GIS can not only impact tactical operations supporting maneuver commanders, but it can also impact recommendations for our leaders. Natural disasters are never going away, but that won't stop Engineers from answering the call to aid and support our citizens and communities from the disasters that impact them. GIS has allowed for analysis of impacts caused by disasters and appropriate responses to those disasters to mitigate as much severe impact we as people can control. Destruction of infrastructure might be inevitable from the hurricanes, storms, and volcanoes that affect the country, but doing what we can to aid rescue and evacuation of our communities can provide lasting impacts for generations to come.

*CPT Andrew L. Hutchinson is the Company Commander, HHC 227 BEB, HIARNG. Duty positions have included Sapper Platoon Leader, A Co, 776 BEB, INARNG; S4, 65th BEB, 2 IBCT, 25th ID; Executive Officer, C Co, 65th BEB, 2 IBCT, 25th ID; AS3, 65th BEB, 2 IBCT, 25th ID; Platoon Trainer, OCS Detachment, 298th RTI, HIARNG. He is currently a graduate Student of Geospatial Engineer at Missouri Science & Technology, Class Geo Eng 5146 – Remote Sensing.*

# DSCA



# Remembering Medal of Honor Recipient

Milestone anniversaries are a time for reflection and so I'm honored the Army Engineer Association has asked me to share my thoughts on the twentieth anniversary of the heroism of SFC Paul R Smith at the Baghdad Airport on April 4, 2003. Actions which resulted in the posthumous award of the first Medal of Honor in the War on Terror, earned national recognition for bravery, and resonated through the depth and breadth of the Engineer Regiment and the US Army.

While Paul's heroism remains a source of pride to the nation, to the Army, and to the Engineer Regiment, Paul was also a son, brother, husband and father. The recognition of his valor could never fill the hole created by his loss. I recently learned of the unexpected passing of Paul's wife, Birgit, in February 2023. Birgit and I became friends over the past 20 years and I know her journey was not an easy one. I am left thinking about the burden of being a Gold Star spouse and the wife of a national hero. It is a lot to ask.

The ensuing article appears as published in The Engineer Magazine in May 2005, shortly after President George W. Bush posthumously awarded the Medal of Honor to Paul Smith's family (wife Birgit, son David, and daughter Jessica). Re-reading this article brings a whirlwind of emotions stretching back to 9/11. Memories of hard training, anxious families, intense combat operations, and extraordinary achievement. In a message to the Engineer Regiment that accompanied the article, LTG Carl Strock, Chief of Engineers, quoted Paul's unsent letter to home that foreshadowed the depth of his commitment. "It doesn't matter how I come home because I am prepared to give all I am to ensure that all my boys make it home." These words are as powerful today as when I first read them many years ago.



Over the past twenty years I've been asked many times about Paul Smith. What kind of person was he? What kind of soldier? Birgit said it best in remarks made at the Pentagon's Hall of Heroes, a room dedicated exclusively to those who have earned the Medal of Honor. Birgit stated with poise and emotion: "Paul loved his country, he loved the Army, and he loved his soldiers. He loved being a sapper ... He was dedicated to duty and unwilling to accept anything less than the best." And that's what I remember. Love of country, love of the Army, love of his Soldiers. Love for being a combat engineer. Commitment to excellence. And by the emotion in Birgit's voice, love of his family.

For me, reminders of Paul have come often and sometimes unexpectedly. During a visit to Iraq in 2006, three years after the attack to Baghdad, I was asked if I ever heard of Paul Smith and would I be interested in seeing the location of his heroism. It was surreal. Paul's legacy had spread well past the boundaries of the Engineer Regiment. At another time, I was with my family visiting the National Museum of the US Army outside of Ft Belvoir VA and came across an interactive display of Paul's actions at the Baghdad Airport using a series of "what would you do" questions. Again, catching me off guard. There is a display about Paul at the President George W. Bush

Library in Dallas TX, a place I had the opportunity to visit last year. I could go on. Paul is an American hero. A combat engineer. And someone I knew. It is surreal at times.

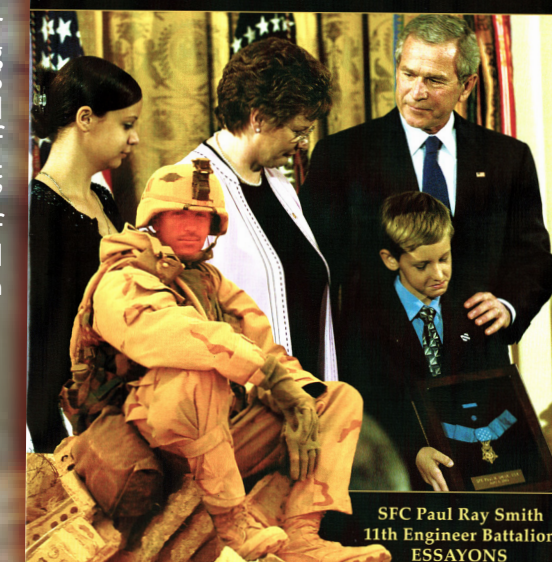
And yet, Paul is not an icon to be studied. The public recognition of Paul's heroism must be both exhilarating and painful to Paul's family. Time does not fill the gap caused by his loss or heal the pain of a life cut short. In the periodic exchanges I had with Birgit before her passing, I would tell Birgit that we have not forgotten Paul and will not forget her. And as Paul would demand, we will not forget the other soldiers who have sacrificed their lives and did not return home to family and friends. Soldiers like SSG Lincoln Hollin said (Paul's good friend who replaced him as Platoon Sergeant and was killed later that week). Or PFC Jason Meyer, also from B Company, 11th Engineer Battalion, who also did not come home.

I am confident other names and faces come to mind from those who are reading this article. So on the 20th anniversary of Operation Iraqi Freedom, I speak for all of us when I say we have not and will not forget SFC Paul Ray Smith and his family; nor have we forgotten and will not forget those who, like Paul, sacrificed their lives for the nation. Essayons.

*By COL (Ret) Tom Smith*

## Army Engineer

May-June 2005



SFC Paul Ray Smith  
11th Engineer Battalion  
ESSAYONS

COL (Ret) Tom Smith was the Commander, 11th Engineer Battalion, 3rd Infantry Division from 2002-2004. He currently works for the U.S. Army Corps of Engineers.

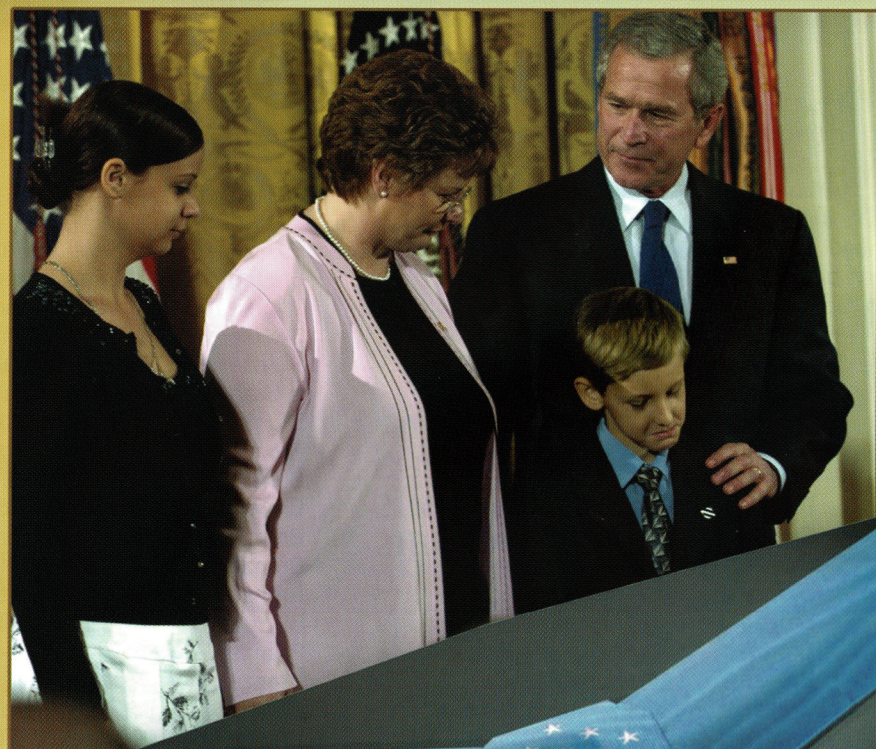
# SFC PAUL RAY SMITH

SFC Paul R. Smith, USA  
April 4, 2005



"On this day two years ago, Sergeant Smith gave his all for his men. Five days later, Baghdad fell, and the Iraqi people were liberated. And today, we bestow upon Sergeant Smith the first Medal of Honor in the war on terror. He's also the first to be awarded this new Medal of Honor flag, authorized by the United States Congress. We count ourselves blessed to have soldiers like Sergeant Smith, who put their lives on the line to advance the cause of freedom and protect the American people."

George W. Bush



SFC Paul Ray Smith

"The Medal of Honor helps to ensure SFC Smith's service will not be forgotten. His actions and his bravery remind me of another Medal of Honor recipient, General Douglas MacArthur, whose "Duty, Honor, Country" speech in 1962 could have been written about SFC Smith."

LTG Carl Strock



**The Medal of Honor is the nation's highest medal for valor in combat that can be awarded to members of the armed forces. It sometimes is referred to as the "Congressional Medal of Honor" because the President awards it on behalf of the Congress.**

On April 4, 2003, the 1st Brigade Combat Team, 3rd Infantry Division, attacked to seize Objective Lions, the Baghdad International Airport. As part of the Brigade scheme of maneuver, Task Force 2-7 Infantry was tasked to establish a blocking position against a brigade-sized counterattack on the main entrance to the airfield. Task Force 2-7 had been fighting for three consecutive days and had moved through the night before reaching the blocking position. Morale was high, but Soldiers were experiencing fatigue. B Company, 3rd Battalion, 69th Armored Regiment (Knight) was in the east-most position oriented along the main avenue of approach ready for the main enemy counterattack. A Company, 2nd Battalion, 7th Infantry Regiment (Rage) was attacking to the southeast of the Highway.

The main entrance to the airfield was a four-lane highway with a median to separate incoming and outgoing traffic. Large masonry walls with towers approximately 100 meters apart bound the highway. On the morning of April 4, 2003, more than 100 soldiers from the Task Force 2-7 Forward Aid Station, mortars, scouts and portions of B Company, 11th Engineer Battalion were in the median behind the forward most blocking positions. The B Company, 11th Engineer Battalion 2nd Platoon Leader was on a reconnaissance mission with the B Company, Task Force 2-7 Infantry Commander. During his absence, 2nd Platoon received the mission to construct an Enemy Prisoner of War holding area. Sgt. 1st Class Smith was in charge of 2nd Platoon.

Sgt. 1st Class Smith assessed the best location to be behind the masonry wall bounding the highway. Two guard towers along the wall were ideally situated to provide overwatch to the holding area. An M9 armored combat earthmover (ACE) knocked a hole in the wall to create an opening to a large courtyard with a louvered metal gate on the north side. With the help of a squad leader and team leader, Sgt. 1st Class Smith checked the far side of the courtyard for enemy, found none, and posted two guards. From the guard post at the gate small groupings of buildings were 100-200 meters to the northeast. To the northwest, a large white building with a white dome was visible. The location seemed perfect as the courtyard was along the northern flank of the blocking position and enemy actions to this point were mostly from the east.

While an engineer squad began to clear debris in the courtyard, one of the guards saw 10-15 enemy soldiers with small arms, 60mm mortars, and rocket-propelled grenades (RPG). These were the lead elements of an organized company-sized force making a deliberate attack on the flank of Task Force 2-7. Sgt. 1st Class Smith came to the position and identified 25-50 more soldiers moving into prepared fighting positions. Sgt. 1st Class Smith instructed a squad leader to get a nearby Bradley Fighting Vehicle for support. While waiting for the Bradley, Sgt. 1st Class Smith had members of 2nd platoon retrieve AT-4 weapons and form a skirmish line outside the gate. By this time, the number of enemy identified rose to 100 soldiers, now a confirmed company-sized attack. Three of B Company's M113A3 armored personnel carriers (APC) oriented .50-cal. machineguns toward the opening in the wall and the surrounding guard towers, now occupied by enemy soldiers.

Sgt. 1st Class Smith's actions to organize a defense against the deliberate attack were not only effective, but inspired the B Company, 11th Engineer Battalion Soldiers. He then began to lead by example. As the Bradley arrived on site and moved through the hole in the wall toward the gate, Sgt. 1st Class Smith ran to the gate wall and threw a fragmentation grenade at the enemy. He then took two Soldiers forward to join the guards and directed their engagement of the enemy with small arms. The enemy continued to fire rifles, RPGs, and 60mm mortars at the Soldiers on the street and within the courtyard. Enemy soldiers began moving along the buildings on the north side of the clearing to get into position to climb into the towers. Sgt. 1st Class Smith called for an APC to move forward to provide additional fire support. Sgt. 1st Class Smith then fired an AT-4 at the enemy while directing his fire team assembled near the front line of the engagement area.

Running low on ammunition and having taken RPG hits, the Bradley withdrew to reload. The lead APC in the area received a direct hit from a mortar, wounding the three occupants. The enemy attack was at its strongest point and every action counted. Not only were the wounded Soldiers threatened but also more than 100 Soldiers from B Company, the Task Force Aid Station, and the Mortar Platoon were at risk.

Sgt. 1st Class Smith ordered one of his Soldiers to back the damaged APC back into the courtyard after the wounded men had been evacuated. Knowing the APC's .50-Cal. machinegun was the largest weapon between the enemy and the friendly position, Sgt. 1st Class Smith immediately assumed the track commander's position behind the weapon, and told a soldier who accompanied him to "feed me ammunition whenever you hear the gun get quiet." Sgt. 1st Class Smith fired on the advancing enemy from the unprotected position atop the APC and expended at least three boxes of ammunition before being mortally wounded by enemy fire. The enemy attack was defeated. Sgt. 1st Class Smith's actions saved the lives of at least 100 Soldiers, caused the failure of a deliberate enemy attack hours after 1st Brigade seized the Baghdad Airport, and resulted in an estimated 20-50 enemy soldiers killed. His actions inspired his platoon, his Company, the 11th Engineer Battalion and Task Force 2-7 Infantry.

Sgt. 1st Class Smith's actions to lead Soldiers in direct contact with a numerically superior enemy—to personally engage the enemy with a fragmentation grenade, AT-4, and individual weapon, to ultimately assume the track commander's position to fire the .50-Cal. machinegun through at least three boxes of ammunition before being mortally wounded—demonstrates conspicuous gallantry above and beyond the call of duty. His actions prevented a penetration in the Task Force 2-7 sector, defended the aid station, mortars, and scouts, and allowed the evacuation of Soldiers wounded by indirect enemy fire.

*The above is the Citation pertaining to the Medal of Honor, as presented to the Family of Sgt. 1st Class Smith on April 4, 2005 by President George W. Bush*



## Message to the Engineer Regiment

As you know, SFC Paul Smith, a combat engineer with B Company, 11th Engineer Battalion, was posthumously awarded the Medal of Honor on April 4th, 2005, the second anniversary of his death in support of Operation Iraqi Freedom. It is an honor to share the title *engineer* with this great Soldier who exhibited extraordinary courage and selflessness.

I was privileged to meet SFC Paul Smith's family and I expressed my deep pride in him and them. They were deeply appreciative of all the Army has done to honor them, as we have honored SFC Smith.

In an unsent letter to his parents, he wrote "it doesn't matter how I come home because I am prepared to give all that I am to ensure that all my boys make it home." On April 4, 2003, he did exactly that.

At the Baghdad International Airport, he engaged the enemy in a withering firefight from an unprotected position atop an Armored Personnel Carrier. He fired hundreds of ammunition rounds before being killed by enemy fire. His remarkable bravery saved many lives that day.

All Americans can take pride in the heroism of this great Soldier and leader, and the Engineer Regiment can be especially proud.

SFC Smith is the 14th engineer to receive the Medal of Honor. The last engineer to receive the honor was CPL Terry Kawamura, 173d Engineer Company, for his bravery in Vietnam in March 1969.

The Medal of Honor helps to ensure SFC Smith's service will not be forgotten. His actions and his bravery remind me of another Medal of Honor recipient, General Douglas MacArthur, whose "Duty, Honor, Country" speech in 1962 could have been written about SFC Smith. "In his youth and strength, his love and loyalty he gave, all that mortality can give...he belongs to history."

I am enormously grateful that our regiment was blessed with SFC Smith. I am equally grateful for you. Today's regiment embodies courage, loyalty and heart. I could not be prouder of you. Keep up the great work.

LTG Carl A. Strock, Chief of Engineers



WE ARE TEXTRON SYSTEMS

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MODERNIZING TODAY'S FIGHT

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- ▶ SIGHT, EMLACE AND ENABLE WITHIN MINUTES
- ▶ REDUNDANT SELF-DESTRUCT AND SAFETY SYSTEMS
- ▶ HIGH WEATHER AND ENVIRONMENTAL RESISTANCE



*How could Engineers be better utilized in the Army?  
And was the Army can support itself*

By CPT Kathy Reis

Most of the time when someone mentions an engineer they think, 12B, Combat Engineer, Explosives expert; but the 12 series is comprised of a much larger skill set. With the combination of the National Guard and the Reserve there are enough skilled Soldiers to complete any task varying from road remediation, erecting a building, rewiring an infrastructure, planning water transportation, creating imagery on top of the obstacle construction. It lends one to think that the engineer branch is self sufficient and capable of daunting mission sets. So why are these Soldiers not utilized when it comes to the long list of updating and reconstruction needs for every post location in the Army?

Most Division locations need a large overhaul of updates. Updates that fell to the wayside during the last 20 years of COIN operations. Now that most Divisions are in a peacetime modernization stance, there is time to prioritize fixing and correcting years of neglect. There are way too many social media posts attacking the degraded living areas that the junior enlisted are forced to live in, ICE complaints about roadways, and tragic stories of Soldiers injured or killed on dilapidated training areas. The Army as a whole has begun taking the first steps forward by hiring civilian contractors to update the barracks and bring deadlined equipment to a usable standard, the issue lies with the fact that the contracts are expensive and they take a lot of time and are unreliable. Why not use the Soldiers who are trained to rewire electrical, lay concrete, fix roadways and be the multi-tool they were trained to be?

Junior enlisted Soldiers are promoted on a points based requirement, continued certification of METS is a key way to remain trained. The needs of the Army could be filled by the engineer units that occupy their division areas, it would involve a lot of planning and resourcing to get the program off the ground but it could be a win-win situation for both the individual Soldier, as well as the posts that need problems solved. Involving units in correcting the deviation of standards not only gives training opportunities to the junior enlisted, it provides officers with the opportunity to run a low risk/high reward project. Battalions can own the accomplishments of the success of their Soldiers.

On the other hand, civilian contracts allow a company to be held responsible for an outcome and a standard of expectation on timeline management and cost. If there is an issue, then someone is held accountable and its not the Army's bill to foot. This brings to mind how missions are given to units, there is an orders process that includes the who, what, when, where, why and how. There is a clear intent expressed, a timeline given and the basic plans for how to complete said tasking, its how units know what to do and when to do it. To save the Army millions of dollars on civilian contracts that take years to complete, units could be combining training and mission execution in the same turn.

Can the Army solve some of its locational blemishes internally? Yes, but it a large overhaul of how the last 2 decades have gone. It's not easy for the Army to make such a drastic change, but it's a way to integrate an opportunity to become more self-sufficient.





# Something Has to Give

## Issues for Airborne Engineer Within The Joint Forcible Entry

By CPT Jacob Reynolds

The Engineer Battalion's responsibility within the Airborne Infantry Brigade Combat Team is to solve every issue regarding mobility, countermobility, and survivability that the Brigade will face. This task is not unique to Airborne Engineers. In fact, it is the same exact responsibility that every other Brigade Engineer Battalion in the Army is tasked to conduct. The question arises, what is the issue that the Airborne Engineer Battalion faces that no other Engineer Battalion faces?

The issue lies in the unique methodology that the Airborne uses to meet the enemy in battle: an airfield seizure by way of the Joint Forcible Entry. The Joint Forcible Entry is designed to take the Brigade combat team with all requisite equipment, and place them behind enemy lines via an Airborne Assault. This is usually combined with the complexity of nighttime, fighting a numerically superior force, and facing a wheeled or armored enemy. The challenge for the Airborne Brigade is the "requisite equipment" portion; this is due to the extremely limited space allotted.

Traditionally, a Brigade will be allotted a certain number of airdrop platforms and parachute rigged "bundles." These platforms and bundles are how the Airborne Brigade delivers vehicles and heavy equipment to the fight. These airdrop platforms are for vehicles like the Brigade's Scout's gun trucks or 105MM Howitzers for the Field Artillery to conduct counterbattery and fire missions. The door bundles are designated for items like 81MM mortars, food, and water. All of what was just listed are invaluable items for a Brigade Commander to have at their disposal. Further, Paratroopers need to have these items to defeat the enemy. The issue is that there is invaluable engineer equipment that the Brigade Commander requires on the battlefield in the first echelon of the Joint Forcible Entry so that the whole Brigade Combat Team is not trapped and defeated.

Aptly put in GTA 90-01-045, "The critical mission during an airfield seizure is airfield damage repair (ADR) and clearing a Minimum Operating Strip (MOS) on a Flight Landing Strip (FLS) so additional personnel and supplies can arrive into the theater, normally by C-130/C-17. Airfield seizure from an engineer perspective involves three basic tasks: assessment, clearance, and repair."

In order to accomplish the above listed tasks, the Airborne Engineers require a drop zone survey equipment to assess, mine detectors to clear, and the Light Airfield Repair Package (LARP) to repair. Survey equipment is traditionally jumped on person or placed in a door bundle. The LARP equipment can only be placed on airdrop platforms. Finally, mine detectors should be placed in bundles. The standard loadout for the ADR package is a Loader, a D6 Dozer, a High Mobility Engineer Excavator (HMEE), 5 Ton Dump truck, a forward aerial resupply (FAS) box, and ADR kit. A skid steer and tamping equipment is also commonly used in an airfield seizure. Every piece of equipment removed from this package costs the Brigade time and manpower. This equipment is necessary in order for the airborne brigade to conduct the key operation of connecting the air bridge.

Connecting the air bridge means that the maneuver elements have secured the airfield, the Engineers have cleared the FLS of all hazards and have repaired the FLS to the requisite MOS, and Air Force aircraft can begin to land and offload equipment behind enemy lines. The offloaded equipment is considered the second echelon and the equipment is designated as air lands rather than air dropped in the first echelon. The equipment traditionally consists of gun trucks from the Infantry Battalions Delta companies and supplies to sustain the Brigade. In short, connecting the air bridge is the goal for the Airborne Brigade. It signals that the airfield seizure is a success and follow on operations may begin. However, the limited air drop platforms and bundles strains the Engineer's ability to conduct their mission.

During the planning phase of a Joint Forcible Entry is traditionally where the allotment of the airdrop platforms and door bundles goes awry. The Brigade staff in conjunction with the three infantry battalions, cavalry squadron, and field artillery battalion dominate the conversation. They all have the common goal of the Brigade in mind: to project forward off the drop zone and impose its will on the enemy. In the first three steps of the Military Decision-Making

Process (MDMP), the Brigade staff is focused on this need. It also coincides with the first hours and days of receiving the mission. In that time, the first two Warning Orders have been passed that the air platforms will be reserved for the cavalry and fires units, and the bundles will be reserved for the mortar systems and water. Like clockwork, the Engineer Battalion Commander and staff will come back with the fact the LARP package and detectors were forgotten or lost in planning. It is understandable due to the fact there is generally only two Engineer Officers on a staff filled with maneuver and fires personnel. Therefore, it is inevitable that their voices will get drowned out. Following this bottom-up refinement, the Brigade staff reengages with the allotment of the airdrop platforms and bundles. In my humble experience, the engineer battalion will not receive the requisite platforms or bundles. There is a direct cost to this decision and it is generally paid by the Paratroopers.

A lack of platforms and bundles does the following to an Engineer Battalion. Without bundles for surveyors, the paratroopers carrying this equipment will be at risk of paratrooper fatigue and injury. The amount of surveyors in a Brigade is limited and therefore this becomes a risk to force. Without the requisite platforms for the LARP, the Brigade is at risk of failing to complete their mission. A loader may be left off because a HMEE can fill in the gap, but that risks overuse of operators, and if it breaks, the Brigade is at a standstill. Without bundles for mine detectors, the Paratroopers carrying them must give up precious space for other equipment such as food, water, ammunition, clothes, etc. This also dramatically lowers the morale of those Paratroopers.

The solution lies in closing the knowledge gap of the members of the Brigade Staff and fellow maneuver battalion staffs. It is a logical expectation that if an Engineer Staff member can know what a 105MM Howitzer or an 81MM Mortar is, and know why it's important, then a maneuver staff member can know what a HMEE or a D6 Dozer is, and why it is important on the battlefield. This gap can be closed by Leader Professional Development (LPD) briefs and more deliberate cross-talk between sister battalions. This knowledge gap closure will coincide with a better MDMP and a better allotment of airdrop platforms and bundles. In the end, it is incumbent upon the Engineer Officers of the Brigade Combat Team to close this gap so that when the time comes, Engineers may reign on the battlefield.

*CPT Jacob Reynolds spent 39 months in the 37th BEB in the 82nd Airborne Division as Platoon Leader, Company Executive Officer, and Staff Officer. He is currently a student at Missouri S&T participating in the Professional Development Program with the Engineer Captain Career Course.*



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In July 2022, the 1223rd Engineer Company located in Walterboro, SC and the 679th Engineer Detachment located in Chester, SC traveled to Guatemala to build the Paxcaman Schoolhouse in Flores for Resolute Sentinel '22. The mission was to build a 2,300 SF concrete masonry block building that included hoisting 6 steel roof trusses into place. The 1223rd EN CO traveled to Guatemala in two rotations starting on 26 June 2022 and returned to South Carolina on 23 July 2022. The 1223rd was tasked with installing the roof trusses, metal roofing and gutters, running the electrical conduit, priming the interior and exterior, installing the windows and doors, installing the landscaping, and conducting the punch list. The 679th Engineer Detachment left South Carolina on 23 July 2022 and returned to South Carolina on 05 August 2022, and was tasked with completing the remaining electrical work, finishing the painting, and plumbing, and conducting the final punch list and handover to the school officials in Flores. Due to the hard work of the 679th Engineer Detachment and the 1223rd Engineer Company, the

project was completed ahead of schedule and under budget. Through this training, the Soldiers from both units were able to apply their construction skills to helping a community and providing the children of Flores with a brand-new school. For some Soldiers, the mission was their first time leaving the United States and it provided them with a memorable experience. This mission also enabled the units to acquire valuable training in moving equipment and Soldiers overseas and then back to home station. The mission was a huge success and will have a lasting effect on the residents of Flores.

**Companies From the 178th EN BN  
Build Schoolhouse in Guatemala**



These are incinerators at Camp Al Taqaddum, Iraq where eco-friendlier solution to disposing of waste were implemented. This shows how this is being applied world wide, not just state side. Photo courtesy of DoD.

# FORTUNATELY, MOVEMENT TO MINIMIZE CURRENT UNCONTROLLED HARMFUL BURNING PRACTICES FOR THE HEALTH OF OUR SOLDIERS AND THE ENVIRONMENT IS ONGOING.

Disposing of Waste in The Army - The Need to  
Become Environmentally Friendly

By CPT Clara Reynolds

CPT Clara Reynolds spent 39 months at TF 1-28 IN, FT. Benning, GA, now known as 1-28IN BN, as a Sapper Platoon Leader, Executive Officer, and Medical Officer and Medical Platoon Leader. Currently, she is a student at Missouri Science and Technology in Rolla, MO.

With the advancement in technological abilities, incineration of large amounts of trash is becoming more feasible within the Military. Military engineering must embrace this challenge in a linear fashion by providing primary, alternative, contingency, and emergency solutions. Due to the amount of waste that the military produces both within garrison and in the field, the probability that incineration can be taken out of the equation is improbable. Fortunately, movement to minimize current uncontrolled harmful burning practices for the health of our Soldiers and the environment is ongoing.

The problem with growing waste is compounded as landfill space becomes more scarce and the costs of both landfilling and energy rise, the Army has begun to consider heat recovery incineration as a possible alternative for solid waste disposal according. Griggs continues that military engineers have been given the task as well as other supporting companies and contracts to create incineration practices that will be operated in a manner that prevents or minimizes risks to human health and safety of DoD personnel and, where possible, harm to the environment. Achieving this through thermal treatments means the Military must analyze any "hazardous waste, PCBs, bulk liquid waste, and non-containerized liquid and costs associated with burning waste" as well.

The basic chemistry of incineration is a chemical reaction of combustion by which waste products react with oxygen; energy and heat are released as byproducts during the process. Forward thinking would capture and recover this energy for re-use and is or should be the goal for the advancement of the incineration process. As "the U.S. Army Construction Engineering Research Laboratories [have] been tasked to research Army solid waste management issues there is a drive to evaluate" the use of heat recovery incineration (HRI) "in installation solid waste management, including landfill expansion and construction costs, and projected HRI life-cycle costs". This extensive research is meant to assist the U.S. Army Corps of Engineers (USACE) and Major Army Commands develop policies on waste management and HRI project development Griggs further explains.

Across the United States multiple efforts to dispose of large amounts of debris. The U.S. Army Corps of Engineers in the Louisville District of Mayfield and Graves County are tasked with cleaning and removing waste from natural disasters as a result of natural disasters. According to the Louisville District, in this cleanup process more than 130,000 cubic yards of debris has been collected and removed with an additional 70,000 cubic yards of vegetative debris have been hauled to an adjacent site at the West Kentucky Landfill where it will be reduced by incineration.

The Louisville District is only one of many that is tasked with managing the disposal of wastes in a safe and efficient manner. The goal to be minimally disruptive to the environment while addressing and providing solutions for waste management. To reduce and reverse the devastating environmental impacts of decades old practices, it is paramount that new technologies be implemented. New high temperature incinerators operate

to assist by burning off more hazardous materials and particulates to promote safer environmental practices. The government is actively sourcing and contracting with companies that can help meet these objectives. The Parsons Corporation, located in Centreville, VA was awarded a four-year, \$145 million contract by the Department of the Army, USACE Norfolk District. The operation will yield a healthier future through a new Energetic Waste Incinerator/Contaminated Waste Processor.

The investment in this project "will provide technical design and engineering, permitting, and delivery of the environmental compliant thermal treatment facility which will significantly reduce/eliminate Open Burning Ground related environmental concerns and provide a dependable facility to treat hazardous energetic waste streams." Furthermore, Parsons has more than 77 years of engineering experience, its ultimate focus is to continually strive for cleaner and greener operations. This is aligned with the Army, as the Army wishes to analyze and upgrade their installations; "of the 124 U.S. Army installations available for study, detailed analysis was limited to the 48 considered to be the highest priority in terms of solid waste management needs" Griggs revealed.

Overall, prioritization of installations' needs is the focus. When reflecting upon TRADOC installations Griggs expressed that the "files on landfill life expectancy were factored into the prioritization because short life expectancy would aggravate any solid waste disposal problems" or build up. As for non-TRADOC installations "landfill life expectancy data had to be obtained by contacting each installation separately". There were even some installations that were dropped from the study entirely if their principal fuel was coal because the potential energy savings from a HRI plant in such settings are greatly reduced compared to where more costly fuels are used" instead.

An assumption from using HRI is that it could be an attributing solution to better and cleaner incineration processes. Griggs believes that, even with this though "the factor that seems to have the greatest impact on whether to build an HRI plant is whether new landfill construction", and therefore incineration, "could be avoided is an HRI plant is built". There would need to be a proper procedure set up in order to determine the potential beneficial position of an HRI on any Army installation. Even though there is not a large amount of quantitative evidence from a variety of Army installations, the data that has been collected has value for the Army to determine which installations should be examined more closely. He supports the recommendation that the bases which report generating an unusually large amount of waste, more than 5 lb. per person daily or 0.9 tons per person annually, should be studied specifically to determine whether they produce that quantity of waste and whether recycling and waste generation reduction measures are being applied accordingly. Military Engineering is actively working towards negating poor environmental impacts of antiquated waste disposal by recognizing the need to evolve and use new systems and technologies.



# BEHAVIORAL HEALTH SERVICES INTEGRATED INTO PRIMARY CARE AT MILITARY TREATMENT FACILITY

By Dr. Corrin Elmore

Long before civilian healthcare systems, the military health system (MHS) integrated behavioral health services into adult primary care clinics. In this model of care, behavioral health consultants (BHCs) are located directly in primary care clinics and serve as members of the primary care team to contribute expertise on the behavioral health aspects of a person's treatment plan.

More recently, the need for similar services for pediatric populations became apparent as service members and pediatricians reported increased behavioral health concerns for children. In fact, during 50 % - 80% of child healthcare visits, parents or physicians raise concerns of behavioral or psychosocial issues. Unfortunately, pediatricians are not adequately trained to treat behavioral health conditions and are limited by short appointment times where they must also address medical concerns.

Further, there are several barriers to children receiving behavioral health treatment including a shortage of pediatric behavioral health providers, stigma in receiving behavioral health services, and lack of civilian providers accepting Tricare insurance. Having behavioral health services integrated into the medical home makes the services more accessible by providing services in a setting patients already attend regularly and can reduce stigma by being treated as part of their overall healthcare. In 2016, I was hired as a civilian by Walter Reed National Military Medical Center to develop one of the first integrated behavioral services in pediatric primary care.

Referrals are generated in three ways: a patient mentioning behavioral health concerns during their medical visits, elevated scores on behavioral health screeners, or self-referral. Once patients are referred, they can generally be seen the same day for a "walk-in" appointment. Initial visits include a brief assessment of family history, current concerns, and plan for care. Behavioral Health Consultants (BHCs) provide short-term interventions (i.e., 1-4 problem-focused sessions) that last 20-30 minutes. For patients for

whom long-term, ongoing treatment is indicated, the BHC will coordinate transfer to traditional therapy at the hospital or provide gap treatment until they can access services.

Behavioral health consultation differs from traditional therapy in that the services focus on low acuity concerns to prevent future significant behavioral health conditions. Treatment is solution focused rather than concentrating on causes of symptoms and building a therapeutic relationship. BHCs treat a variety of both medical and behavioral health concerns with the most common referral problems being anxiety, sleep, parent training, school accommodations for learning differences, ADHD, and depression.

As highlighted in the above having case examples behavioral health services integrated into primary care can be an invaluable resource to service members and their families. One of the benefits of being treated at a military treatment facility (MTF) is that both the BHC service and traditional therapy are located in the same hospital and there are no concerns about reimbursement or billing. Since the development of this program at Walter Reed, several other military treatment facilities have developed similar services. Please check if your MTF offers this service.

*Corinn A Elmore, PhD is a psychologist and a pediatric behavioral health consultant at Walter Reed National Military Hospital where she pioneered the first integrated behavioral health service in the pediatric primary care medical home. In this role, Dr. Elmore provides consultation to pediatricians and patients in managing behavior with children in military families. Dr. Elmore serves Assistant Professor in the Pediatrics Department of the F. Edward Herbert School of Medicine, Uniformed Services University of Health Sciences (USUHS) in Bethesda, MD. She is certified in several evidenced based practices including Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) and Parent-Child Interaction Therapy (PCIT). Dr. Elmore holds a master's degree in family therapy from the Family Institute at Northwestern University and doctorate in clinical psychology from Loyola University Chicago. She has published several articles and books chapters on parenting, culturally relevant practices, and integrated care.*



## CAST STUDY 1

Tasha is a 4-year-old female who attended a medical visit due to abdominal pain and headaches in mornings and evenings. She also reported trouble sleeping and feeling fatigued during the day. She has missed several days of school due to her pain. The pediatrician found no medical cause for these symptoms and referred the family to the BHC. The BHC comes into the medical visit, describes the service, and schedules the family to be seen right after their medical visit. During the initial consultation, the BHC learns that Tasha only experiences these symptoms on school days and that they disappear after-school until bedtime. Tasha also reported that she had been struggling with learning to read and has not been moved to the next level for reading class. The BHC explains how stress activates the body's stress response system and commonly causes physical symptoms like abdominal pain, headaches, and sleep disruptions. She explains how stress/anxiety treatment includes body relaxation strategies like deep breathing as well as thought challenging techniques when someone has anxious thoughts about their success. Finally, she provides a psychoeducation handout on anxiety to the parent and some book recommendations for the child. After 2 more visits practicing these techniques and learning more about anxiety, Tasha is attending school regularly, has a reading tutor, is sleeping well and is no longer complaining of pain. Her symptoms have resolved, and both Tasha and her mother expressed confidence in being able to manage her symptoms moving forward.

## CAST STUDY 2

Keith is a 9-year-old male referred by his pediatrician for concern of Attention Deficit Hyperactivity Disorder (ADHD). Keith had several missing assignments and was reportedly disruptive in class. The pediatrician provided assessment forms to the family which were significant for ADHD. The family was concerned about this diagnosis and were anxious about how ADHD may affect Keith's future success. During the visit with the BHC, Keith stated that he often feels sad and thinks he is "stupid." In the first visit, the BHC provided a thorough explanation of how ADHD is diagnosed, what to expect over the child's life span, and treatment options. Keith and his parents were able to ask the BHC questions about the diagnosis and Keith learned that ADHD has no impact on his intelligence. The BHC communicated to the pediatrician that the family would like to begin behavioral treatment for ADHD before seeking medication. During the course of treatment the BHC created home and school behavioral plans for Keith and aided the family in seeking school accommodations. By the end of the semester Keith was completing his school work on-time and he reported a greater level of confidence in being able to "control his body." The family returned to the BHC when Keith began middle school to consider stimulant medication.





## Regaining the Initiative: Geospatial Engineering and the Engineer Officer

By MAJ(P) James E. Jones

As masters of the terrain, Army Engineers play a multifaceted role in today's warfighting machine. In both Army and Joint doctrine, their functions are divided into three codified disciplines—general, combat, and geospatial engineering. Geospatial engineers provide the regiment's ability to visualize, analyze, and understand the terrain. While much of the regiment's focus for officer development is placed on creating experts in general and combat engineering, developing engineer officers in geospatial engineering has long been seen as a lower priority by leaders because of its low density but highly technical, and often hard to understand, discipline. Fortunately, the regiment has continued to make headway in professional military education and talent management. Still, additional steps are needed from the regiment, leaders, and officers to regain the initiative in geospatial engineering and ensure it is correctly supported as the third pillar of military engineering.

Multiple factors lead to engineer officers being unfamiliar with geospatial engineering. Normally the company grade formative years of officers are spent in highly standardized career paths, serving at battalion level and below as Platoon Leader, Company Executive Officer, on battalion staff, or as Company Commander. Because geospatial engineer teams operate at brigade and higher, officers across the force are not regularly exposed to the discipline. Additionally, senior engineer officers often also had limited geospatial experience in their formative years, making mentoring and coaching junior officers more challenging regarding geospatial opportunities, capabilities, and expectations. On top of this, as recently as 2021, Engineer Basic Officer Leaders Course and Engineer Captains Career Course Professional Military Education only included 24 course hours on geospatial combined! Without job experience, senior mentorship, or significant regimental PME, officers do not have a chance to understand the geospatial mission, capabilities, or needs of their enlisted and warrant officer geospatial personnel.

The lack of geospatially familiar engineer officers is particularly striking when we assess its impact on the regiment's ability to communicate our Geospatial Information and Services (GI&S) capabilities to our non-engineer teammates. There is a drastic overmatch in the number of engineer officer generalists (MOS 12A), to our geospatial Soldiers (MOS 12Y) and Warrants (MOS 125D). Currently, the regiment has approximately 1,180 12Ys and 145 125Ds, but over 8,400 12As. That is a 6:1 ratio, 12A to 12Y/125D. Enlisted and warrant officer engineers can only be in so many staff meetings, commander update briefs, and planning sessions, while simultaneously completing their highly technical geospatial engineering mission. Opposite to this, 12As are in almost all these forums, from platoon and higher levels, where they are frequently the sole engineer advisors to non-engineer commanders and staff. Without a fully engaged officer corps exposing geospatial engineering from Lieutenant through Colonel level, the regiment's full capabilities will not be brought to bear as designed.

Currently there is not a significant level of geospatial understanding in the officer regiment, but that has not always been the case. As recently as 2006, the Army had three topographic battalions and six topographic companies, complete with broadening and key developmental opportunities for officers at platoon, company, and battalion levels. This force structure created pockets of engineer officers with experience in geospatial engineering, who could understand and actively manage the field. However, amidst the counter insurgency fight between 2007 and 2014, all these units were removed from the Army inventory and replaced with the seven Geospatial Planning Cells (GPCs) at each Army Service Component Command. This geospatial force reduction resulted in an 82% drop in geospatial engineer Second Lieutenant through Colonel billets, from 51 to 9, in the decade after 2006. The removal of topographic officer billets has left a gap in experience and technical knowledge that has yet to be fully replaced.

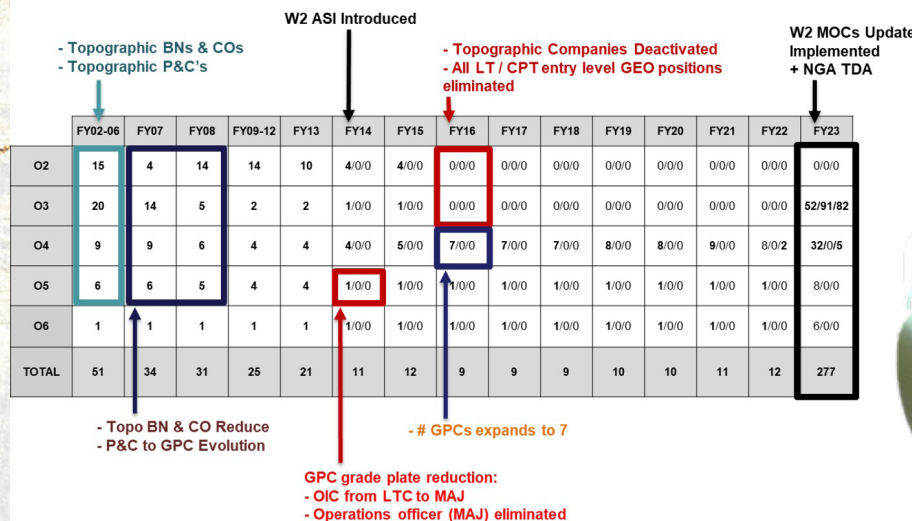
After removing the topographic units from the Army in 2014 the regiment created the W2 "Geospatial Engineer Leader" skill identifier. This was meant to facilitate meaningful 12A talent management but only seven total billets were coded W2 up until 2022: the GPC Majors. Additionally, the only means for earning the W2 according to DA PAM 611-21, was through civil schooling at accredited colleges. With the only W2 billets being at the O4 level, and without an option for officers to earn the skill identifier outside of civilian institutions, the regiment lost the drivers for junior officer geospatial development, leading to an inadequate cadre of engineer officers earning the W2 at company-level grades. The shortfall today means not only that under trained or ranked engineers regularly fill key geospatial billets, like the GPC commander positions, but at a larger scale, that a vast proportion of our officers cannot communicate the Regiment's geospatial capabilities to our stakeholders. One must note that as of 2022, there are less than 90 officers with the W2 skill identifier, or just about 1% of all engineer officers.

Although the officer geospatial engineering capability has trended negatively in the last decade, not all is lost for the discipline. The regiment has taken many steps in the past couple of years to regain the initiative and prepare the regiment to provide geospatial engineering in the multidomain fight. The U.S. Army Engineer School (USAES) TRADOC Proponent Office – Geospatial (TPO-G) relooked the total Army requirement for W2 officers. Their research and follow-on staff work resulted in adding over 245 W2 billets in 2022, mostly at the pre-command captain level in engineer battalion staffs. Subsequently, USAES rewrote the W2 skill identifier criteria in DA PAM 611-21 to enable officers to gain W2 credentialing via non-civil schooling or certain experiential assignments. There are now viable paths for engineers, while still assigned to their units, to become geospatial leader qualified with as little as four weeks of effort.



# Geospatial Engineer Officer Billets Over Time

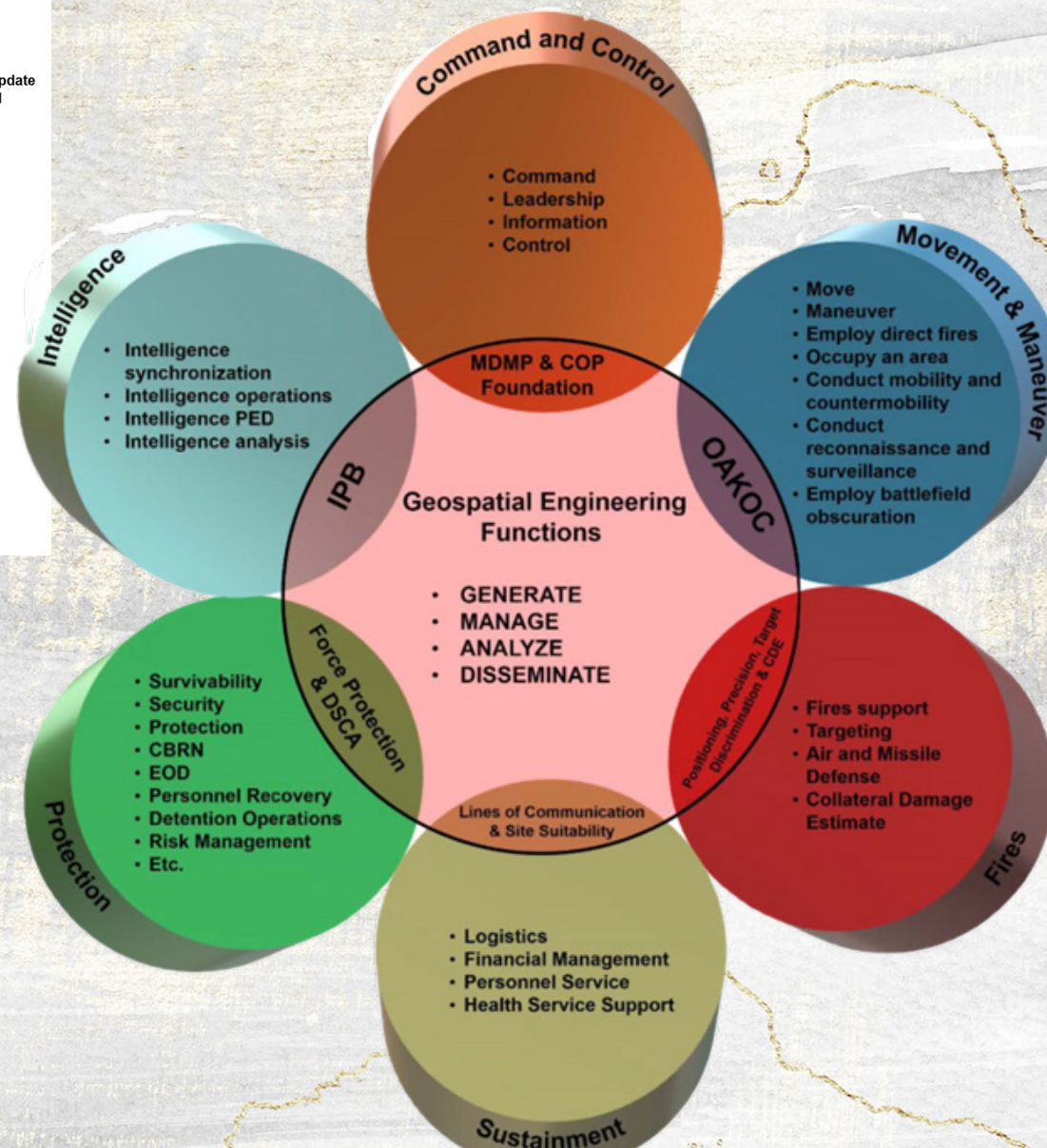
COMPO 1 / COMPO 2 / COMPO 3



Beginning 01 October 2022, the quickest way to earn the W2 is through the National Geospatial-Intelligence College (NGC). As officers are not expected to be subject matter experts, but rather should understand capabilities and resources available for solving commander and staff geospatial challenges, the regiment has determined the sweet spot for GI&S training is three 40-hour NGC courses (GI&S Fundamentals, GI&S Intermediate, and GI&S Officer Training Course) and GEOINT Professional Certification- Fundamentals (GPC-F) certification. This training enables officers to understand the basic GI&S functions and what organizations exist to provide geospatial solutions. Although this route relies upon NGC course capacity and schedule, it fills a critical gap by providing 12As a route to W2 qualification with only one to two months of effort, rather than 12+ months of effort for the other W2 paths.

It simply is not feasible to fill all 250+ W2 billets with an already qualified officer today, especially as the regiment is just beginning to focus on regenerating the W2 officer pool. To account for this, the regiment also created an experiential route for earning the W2 via assignment to key GI&S positions for at least one year, plus earning GPC-F certification. This path was created in recognition that certain 12A positions provide significant geospatial experience to officers, regardless of if they initially come into the positions with the W2 or not. This route gives the regiment a means to recognize the significant on-the-job experience an officer accrues while assigned as a Geospatial Development Program (GEO-DP) officer at the Lieutenant level, a Junior Officer GEOINT Program (JOGP) intern at the senior Captain level, and GPC Detachment Commander at the Major level.

The regiment has also taken steps to broaden communication on available geospatial engineering opportunities, giving awareness to prospective candidates and their senior engineer mentors. Starting



in summer of 2022, the first annual Military Personnel (MILPER) message was published Army-wide, for the Defence School for GEOINT (DSGI), also known as Royal School of Military Survey (RSMS), Master's degree program in the United Kingdom, as well as JOGP at the National Geospatial-Intelligence Agency (NGA). Previously, announcements for applications were sent directly from HRC to eligible captains only, minimizing exposure of the broadening opportunities. This new recurring MILPER message now highlights the program to all leaders across the Army to include junior officers outside the application window and senior officers who mentor and shape junior officer careers. This increases awareness of the geospatial engineering field and its opportunities.

Regarding recent geospatial engineer officer efforts, 15 of the now 257 W2 billets across the Army were determined to require officers with expert level geospatial knowledge, due to their critically important and technical nature. As such, the USAES Commandant approved their Advanced Education Requirements System (AERS) coding in May 2022. This means incumbents of these positions require a graduate degree in a geospatial engineering-related science to teach geospatial engineering at the US Army Engineer school or successfully serve in strategic level geospatial engineering billets, where an in-depth understanding of highly technical geospatial engineering concepts is required. These positions are the TRADOC Proponent Office- Geospatial Director (O6), Army Geospatial Center Commander (O6), the Army GI&S Officer and Geospatial Engineering Branch Chief on HQDA staff (O5s), the seven GPC commanders (O4s), and three USAES PME geospatial instructors (O3s). This new AERS coding enables effective talent management by engineer branch managers and the units by identifying where expert-level geospatial engineering officers are required and should be considered

for high priority fill. As a bonus, AERS coding of these billets allows units to requisition these officers outside of Army Manning Category fill percentage limitations since AERS billets are considered "DA Special Requisitions".

While great strides have been made, there are still several things the engineer leaders and the regiment should pursue to develop a robust and geospatially competent officer cohort that can ensure the future of the discipline:

First, our leaders need to understand the available geospatial opportunities so that they can effectively mentor our junior officers. Once these opportunities are clearly understood, officers can begin funneling themselves or their subordinates into these paths to develop the knowledge needed to competently engage in geospatial resourcing and capability development, represent the geospatial engineer function to non-

engineer commanders and staff, and lead the Army Geospatial Enterprise. If our officers do not see that there is a viable, robust career path that includes geospatial, they will continue to avoid the discipline to the regiment's detriment.

Second, leaders must actively manage our geospatial engineering talent. This means filling unit W2 billets, and doing so with the right officer, with the right geospatial experience. This could be soliciting for an officer with a geospatial master's degree to serve in an AERS-coded GPC OIC position or for a junior captain who completed GEO-DP to serve as the W2-coded battalion plans officer. Whatever the position, senior engineers in every organization have a responsibility to provide their command with the full breadth of engineer capabilities, including geospatial, and filling W2 billets is key to bringing that engineer capability to the organization.

Lastly, the regiment needs to produce significantly more W2 officers to fill the 270+ W2 billet positions and do so in a sustainable manner. As of January 2023, there are at least 180 fewer W2 officers than needed, with an average of only 20 new W2s being added to the regiment each year. Even in the absolute best case of officer retention and talent management, it would take nine years to generate enough W2 officers. As discussed earlier, there are now numerous routes for producing W2 officers, but none will be successful without the regiment, engineer branch managers, and unit leader emphasis. This includes pursuing additional policy and programmatic ideas such as developing methods to increase accessions of cadets with GI&S degrees into the regiment, fencing a percentage of advanced civil schooling slots for geospatial education, developing an Army-internal geospatial engineer officer course, etc.

Geospatial engineering is crucial for planning and executing military operations and is explicitly the responsibility of military engineers according to policy. We cannot afford to just train and field geospatial enlisted and warrant officers as we have done over the last decade. We must also develop our officers, so that they may integrate geospatial resources, policy, plans, and people, to truly provide all three engineer disciplines to the Army and Department of Defense at all echelons! Fortunately, the regiment has begun to rectify the reduction of geospatial capability brought on by the removal of the topographic battalions and companies more than a decade ago. This includes coding hundreds of W2 billets and initiating a host of new schooling and experiential options, but these additions only serve to open doors for the regiment's officers to pass through. Meaningful and lasting improvement to the regiment's geospatial engineering capability requires engineer leaders to take ownership of the discipline, actively manage geospatial officer talent, and pursue methods for increasing the population size of W2 officers. The stage is set for success but relies on us to see it through. Essayons!

*MAJ(P) James E. Jones is currently the Geospatial Engineering Branch Chief within the Office of the Chief of Engineers where he supports the Chief, as Topographer of the Army, with functional management of the discipline. He is a graduate of the NGA Junior Officer GEOINT Program (JOGP) and holds a Masters in Geospatial Information Science and Technology from North Carolina State University.*



By 1LT James F. Bakker

From 12 August 2022 to 14 August 2022, eight squads from the companies in the 178th Engineer Battalion and the 122nd Engineer Battalion competed in the annual South Carolina Army National Guard Best Engineer Squad Competition hosted by the 117th Engineer Brigade. The squads competed in a round robin of nine lanes spread out over three days with each squad being supported by a medic. The competition began with a gear layout and a six-mile ruck, followed by the lanes. The lanes included a bridge reconnaissance, an area ambush lane with a MEDEVAC request, a CBRN lane, a road reconnaissance lane, a SINGARS lane, a weapons disassembly and assembly lane, a written test based on the history of the US Army Engineer Regiment and 117th Engineer Brigade, a SWEAT analysis lane, and a Zodiac lane. The ruck and first five lanes were hosted at McCrady National Guard Training Center located in Eastover, SC and were supported by the 178th Engineer Battalion. The remaining lanes were hosted at Clarks Hill Training Site located in Plum Branch, SC and were supported by the 122nd Engineer Battalion. Travel between the two sites was by Chinook and provided by Company B of the 238th Aviation Regiment. After three days of competition, only 37 points separated first place from third place. The winner of the event was the 1221st Engineer Route Clearance Company from Graniteville, SC (1094 points), second place went to the 122nd Engineer Sapper Company from Fort Mill, SC (1077 points), and third place went to the 174th Engineer Mobile Augmentation Company from Wellford, SC (1057 points). Following the end of the Engineer Competition, all the competitors traveled to Columbia, SC for the AEA Castle Rally where the 1221st was awarded the trophy for winning the event and SPC Ashley Roberts with the 1221st won Best Medic.



# 2022 Competition

Photo above: COL Berry, 117th EN BDE CDR and BG Pippy, Deputy Chief of Engineers for National Guard Affairs at the USACE Headquarters in Washington D.C. talks with the SWEAT Lane OIC 1LT Victor Montilla the 124th EN CO XO. Photo Right: Soldiers from 125th EN CO (MRBC) compete on the zodiac lane at Clarks Hills Training Site.



## ESSAYONS CLUB WINNERS!



Opening the Island Preparing for Airfield Damage Repair in the Maritime Domain

1LT Hannah Gillan



Opening the Island Preparing for Airfield Damage Repair in the Maritime Domain

Captain Nathan Hall



Developing the Army Over Time

SPC Kristofer Smith



# Opening the Island Preparing for Airfield Damage Repair in the Maritime Domain

CPT Nathan Hall & 1LT Hannah Gillan



The Army and the joint force are changing. In response to the anticipated threats of the upcoming decade, particularly the 'pacing challenge' of China in the Indo-Pacific region, the Army has unveiled its new Field Manual on multi domain operations. Touted as the most significant change to Army doctrine since the 'Air Land Battle' of the 1980s, the new operational concept not only seeks to demonstrate a set of first principles for 21st century conflict and competition, but also to articulate the Army's role in operating environments more typically associated with the U.S. Navy and Marine Corps. In the maritime domain of the Indo-Pacific, one of the Army's key contributions to the joint force is to assist in gaining and maintaining operational access via the forcible entry. To support joint defeat of enemy anti access and area denial (A2/AD) in a maritime or littoral environment, the Army must be well-prepared and well-practiced at all forms of forcible entry. Airborne forces, for instance, buy time and space for the joint force to get to the fight, relying heavily on the rapid seizure of existing infrastructure (rather than new construction) as a lodgment through which to generate combat power. To ensure the success of these and other forcible entry efforts, the Engineer regiment must hone an existing capability - airfield damage repair - to the unique characteristics of the Indo-Pacific region and the maritime domain.

Airfield Damage Repair (ADR) is an engineer task that entails the use of portable and semi-portable tools and equipment to restore a "Minimum Operating Strip" (MOS) to a damaged runway. ADR is a broad discipline practiced across the services, and can include diverse scenarios: the repair of a friendly runway (i.e. a main operating base is attacked by long-range fires, and prepositioned engineers and equipment must restore the operational capability of its runway), or repair of an airfield not yet under hostile contact (allowing civilians the option to evacuate in the event of a deteriorating security situation). These types of scenarios are more likely in the "second and third" Pacific Island chains, where U.S. bases are generally on U.S. territory, with Air Force or Navy airfield repair capabilities largely present at existing facilities. The most lethal ADR scenario would instead occur in the contested "first island chain" - the rapid repair of a runway that has been

denied by the enemy to prevent our use upon seizure. For our purposes, we will limit our focus to the expedient version of ADR most commonly associated with forcible entry or airfield seizure: deploying forces to a remote location or austere airfield and restoring its air land capability, with as little equipment as possible.

Our adversaries are not blind to the importance of airfields; conflict with any peer competitor is sure to include the early and repeated targeting of enduring airstrips. Recent examples in EUCOM bear out this assumption as shown the aftermath of Russian rocket attacks on Ozerne Airbase in Ukraine in February of 2022. China's efforts in the South China Sea reinforce the importance of existing airfields, both as force projection platforms and as targets; China is hard at work turning atolls into airfields, expanding their sphere of influence at less cost than an expanded blue-water navy. In the absence of a viable alternative for projecting and resupplying ground forces in a maritime theater, the mobility of our own joint force will remain heavily reliant on island landing strips. It is thus doubly critical that the Army's light engineer units are properly equipped and prepared to execute ADR, alongside joint and multinational partners, under the unique conditions of the Indo-Pacific operating environment. With some modifications to unit-level training, doctrinal expansion, and a pursuit of better interoperability with our joint partners and research proponents, the engineer regiment can ensure an expedient ADR capability commensurate with the scale and the specifics of the DoD's "priority theater."

As with any collective task, ADR proficiency and preparedness across the force fluctuates with training cycles and competing missions. The onus of responsibility for improving and adapting training to better fit the INDOPACOM scenario rests with the engineers on the ground - the select FORSCOM units that will practice and execute ADR in a Large Scale Combat Operations (LSCO) environment. The majority of this expedient ADR capability resides in the XVIII Airborne Corps, which in some part missed the Army's reorientation towards INDOPACOM in the mid 2010's due to repeated deployments in support of Operation Inherent Resolve. Even in recent months, the Corps and its immediate response units have been called upon as an answer to Russian aggression in EUCOM, denying some opportunity for 'America's Contingency Corps' to focus on the pacing threat in the Pacific.

Beyond the standard doctrinal means of improving training quality (increasing the frequency of nighttime ADR, incorporating real-world airborne/air assault insertion of equipment, etc.), these units should seek to train under conditions that more effectively simulate an INDOPACOM scenario. A near-term initiative that will pay dividends in this regard is replication of theater materials and environment. Over time, engineers become familiar and comfortable with the material properties of their home station; both Airborne Engineer Support Companies (ESCs), for instance, practice dirt-surface ADR almost exclusively in either specially procured airstrip capping material, or native North Carolina soil. In combat, such a repair would typically involve the use of local material (finding and utilizing fill dirt adjacent to the runway), the properties of which vary widely (as any engineer working in the clay of Hawaii's Pohakuloa Training Area could attest). Small unit leaders should seek opportunities to practice with non-local aggregate and spoil, in order to gain familiarity with, and adapt processes to, the materials expected at a Pacific Island landing strip.

Likewise, the impact of the environment on surface repair cannot be overlooked. Swathes of INDOPACOM are subject to a significant monsoon season, while other portions of the theater extend into the Arctic Circle. An ESC from Fort Bragg would face a steep learning curve attempting to conduct ADR under the Arctic conditions typically negotiated by Alaska's 6th BEB, or under the unrelenting rains characteristic of a Pacific monsoon season. These gaps in experience speak not only to the importance of varied training environments, but also to the importance of better proliferating best practices.

Over the long term, Army planners should seek to incorporate ADR in joint training, specifically the expeditionary deployment and ship-to-shore projection of ADR capability. The newly released FM 3-0 anticipates that, "In a maritime environment, Army forces are likely to conduct two complex forms of forcible entry operations: airborne or air assault and amphibious landing." The Army's tailored ADR forces are largely familiar with only one of these. In a forcible entry scenario, an Army ESC must be prepared for insertion under canopy, via sling load from a U.S. naval vessel, or even landed amphibiously with the intent to rapidly transition to and complete repair operations on an island airstrip; if the scenario is possible,

we should replicate it. To this end, utilizing an existing, high-value training event provides an opportunity for integration. As soon as is feasible, USARPAC should include forcible entry and ADR in the Pacific Pathways series of training exercises.

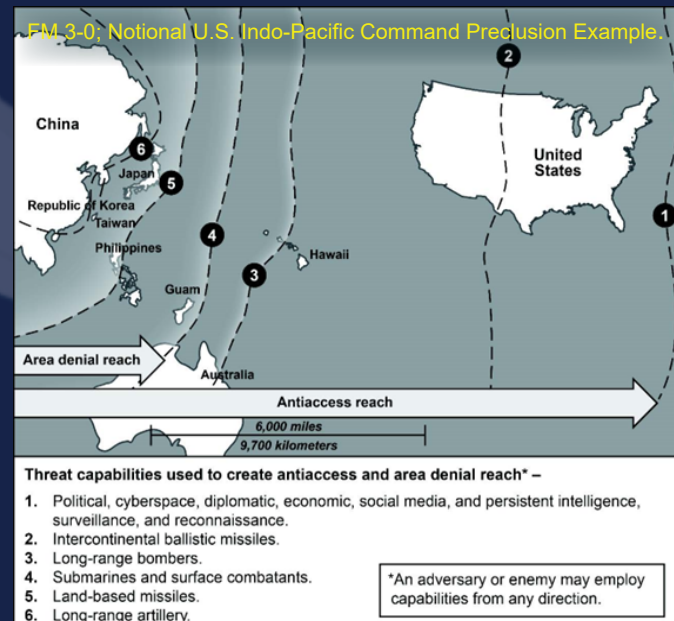
## RESEARCH AND EQUIPPING

The primary equipping challenge for expeditionary ADR is to provide the maximum capability in the least amount of space. Pavement and soils engineering have existed for centuries, and even the modern tools of the trade are fairly well-refined; in this sense, efforts to better equip a Light Airfield Repair Package (LARP) are minor improvements and iterations on existing technology. The most interesting of these potential improvements is the engineer vehicles that compose a LARP.

A Light Airfield Repair Package is inherently tailorable and scalable, and the equipment it comprises will change based on mission parameters. Typically, eligible for inclusion in the LARP are a combination of the High Mobility Engineer Excavator (HMEE), D6K Bulldozer, 924H Scoop Loader, M1094 5-Ton Dump, M400 Skid Steer, and a Forward Aerial Supply box including expendables, consumables, and a purpose-built ADR Kit. As previously mentioned, the ability to bring smaller, modular platforms in place of larger, heavier construction equipment is critical for reducing the space and transportation assets required to place the LARP at the point of contact.

In this vein, the small, maneuverable M400 Skid Steer is a standout performer - a single construction platforms with multiple attachments to perform various functions, the M400 can also move in and around surface damage effectively. Despite these desirable attributes, the skid steer, both in its current model/configuration and via potential upgrades, provides immediate opportunity for improvement.

First, a "high-flow" variant (M400 modified with a more powerful hydraulic system to run tools from the ADR Kit) exists in the Army's fleet but has thus far failed certification for airdrop by the Airborne Special Operations Test Directorate (ABNSOTD). The existing "rigging solution" is unable to prevent damage to the retrofitted hydraulic pump on landing. The Five-Year Program dedicated to certifying the high-flow M400 must be revisited as soon as funding allows. Second, over the long term, Airborne





618th Engineer Support Company (Airborne) Paratroopers train on concrete cutting using hydraulic power from the HMEE. Photo by 1LT Ross Caywood.



A 3-7FA HMMWV occupies a protective position in the wet clay of East Range, Schofield Barracks during Exercise Steel Crucible, 2021. Photo by SPC Jessica Scott.



Sample FLS Assessment and Clearance Report format for Geronimo FLS at the Joint Readiness Training Center. Sourced from Sample Report Format from 618th ESC (A)

BLUE 6 (MODIFIED) – FLS CLEARANCE REPORT – GERONIMO FLS

LS Notes:  
 10m end-to-end per Runway Sector (RS)  
 IOS (3000 ft) = 915m

SIGNAL NOTES:

Section	Clearance Status	Assessment Status	Repair Status	Marking Status	Crater #	Location	Notes (Dist/Spalling, etc.)	Repair Status	ETC
R1	R / A / G	R / A / G	R / A / G	R / A / G					
R2	R / A / G	R / A / G	R / A / G	R / A / G					
R3	R / A / G	R / A / G	R / A / G	R / A / G					
R4	R / A / G	R / A / G	R / A / G	R / A / G					
R5	R / A / G	R / A / G	R / A / G	R / A / G					
R6	R / A / G	R / A / G	R / A / G	R / A / G					
R7	R / A / G	R / A / G	R / A / G	R / A / G					
R8	R / A / G	R / A / G	R / A / G	R / A / G					
R9	R / A / G	R / A / G	R / A / G	R / A / G					
R10	R / A / G	R / A / G	R / A / G	R / A / G					
R11	R / A / G	R / A / G	R / A / G	R / A / G					
R12	R / A / G	R / A / G	R / A / G	R / A / G					
R13	R / A / G	R / A / G	R / A / G	R / A / G					
R14	R / A / G	R / A / G	R / A / G	R / A / G					
R15	R / A / G	R / A / G	R / A / G	R / A / G					
R16	R / A / G	R / A / G	R / A / G	R / A / G					
A1	R / A / G	R / A / G	R / A / G	R / A / G					
HEPI	Consolidated	Design Begun	Design Complete	HE Moving					

R = Arrived on Site    A = Work Underway    G = Work Complete

engineer units intended for ADR missions should explore a vehicle that fills the capability gap and size/weight gap between the M400 and the HMEE. The HMEE offers a more robust hydraulic system than the standard M400, and, due to its weight, can handle dig and excavation tasks more quickly than the standard or high-flow M400. However, the HMEE is simply large. It requires a 32-foot platform for airdrop, larger than any other component of the LARP, and can only be dropped from a C-17, vice the C-130-capable M400. A heavier skid steer (e.g., the Caterpillar 279X, 299, or similar) would enable more significant digging and excavation, accommodate existing tools like the skid steer's rock saw attachment (too heavy for the M400), and, once airdrop-certified, would offer additional capability without the significant increase in aircraft space required by a HMEE.

Beyond specific upgrades to existing equipment, the flow of information between ADR practitioners and the experts behind researching and developing their tools represents an opportunity for improvement. Each of the services maintains some degree of ADR expertise in its practitioners (in the Army, these are two airborne Engineer Support Companies and a small handful of airborne Brigade Engineer Battalions), but the DoD's tri-service lead for ADR and airfield pavements research is the Engineer Research and Development Center (ERDC). ERDC does outstanding work not only in its research function, but also in acquisition and transition (demonstrating and practically applying their research for the end user). The aforementioned custom ADR kit is just one example of many innovative contributions now firmly enshrined in ADR SOPs across the Army.

Despite the existence of this robust research enterprise, it is not uncommon in ADR (as in many examples of Army acquisition) for a unit to be fielded equipment that does not solve a problem, or to have a problem without the appropriate equipment. Simply put, the feedback loop between R&D and end users does not always function smoothly. The demand signals provided to ERDC and other acquisition sources seem to be generated echelons above the units that will be their eventual beneficiaries, leaving platoon- and company-level leaders scratching their heads about receiving hugely space- and weight-consuming masonry kits, or wishing for a more powerful Skid Steer variant. Essential to improving this

system is formalized and frequent feedback: while we remain in a period of competition with a known technological peer, FORSCOM units such as the 20th Engineer Brigade must liaise with ERDC counterparts regularly, and with an understanding of what specific feedback will best drive existing research. Current efforts along this line include recent key leader engagements and the development of an 'ADR Symposium.'

#### DOCTRINE & ORGANIZATION

In place of Army-specific doctrine, the joint force uses the Tri-Service Pavement Working Group Manual (TSPWG Manual 3-270-01, published by ERDC), which captures current repair methods, equipment, and procedures across the services. This document is a significant improvement from its predecessor, a Unified Facilities Criteria document that was laden with technical information beyond what is appropriate or necessary for practitioners in the force. However, the existing doctrine does leave room for improvement and expansion. Per its own introduction, the TSPWG Manual is limited in scope to pavement repair, omitting, among other areas, damage assessment and repair quality criteria. Training and common understanding within these areas is thus typically guided by unit SOPs, which vary in quality and completeness. These important proficiencies, as well as the manual's currently blank Appendix A ("Best Practices"), are targets of opportunity for development and publication in a future iteration.

In addition to continued refinement of the TSPWG Manual, practitioners would benefit from the refinement and expansion of Task and Evaluation Outlines for the collective tasks that make up the Airfield Damage Repair mission. Under its METL, an Airborne ESC is currently subject to evaluation on 'Perform Roadway Crater Repair,' and 'Repair Airfields,' both platoon-level collective tasks that miss the mark in capturing the methods, equipment, and procedures referenced above. The platoon collective task 'Perform Runway/Taxiway Crater Repair' largely captures the methods, equipment, and procedures laid out in the TSPWG (although it alludes once again to tasks not covered by the manual, such as 'repair quality criteria'). This collective task should be aligned with the Airborne ESC's 'Provide Engineer

support to Mobility Operations' MET (either in addition to 'Perform Roadway Crater Repair' or in its stead). Furthermore, the Army should codify a new collective task for airfield assessment and other pre-repair activities, enabling a more objective assessment of a unit's proficiency, task linkage for leaders at lower echelons, as well as guiding unit-level training in the supporting tasks.

Finally, as the Army modernizes for the approaching "Army 2030" benchmark, HQDA and the Engineer Regiment are both working through Force Redesign proposals to determine and field the most effective force structure for the new Operations doctrine. These proposals notably include the removal of the BEBs from Brigade Combat Teams in favor of a division-aligned Engineer battalion consisting of Combat Engineer Companies (CECs) and, in some cases, an Engineer Support Company (ESC). Given the importance of force projection in the Pacific, and the consolidation of the airborne skillset to a select few units, it is essential that, in addition to the ESCs housed in 20th Engineer Brigade and the 82nd Airborne Division, the newly rechristened 11th Airborne Division receives an ESC (A), increasing the total ADR capacity prepositioned near the Pacific.

Opportunities to better prepare for ADR in the maritime domain exist at every echelon, across many lines of effort. At the small-unit level, leaders can refine training to better reflect the unique operating characteristics of a maritime airstrip and should capture and disseminate SOPs freely to feed a growing body of knowledge across the force. The same leaders are responsible for more frequent and better liaising with ERDC to provide more productive feedback for ongoing research.

At the enterprise level, various stakeholders can make immediate or near-term gains for the ADR practice. The ABNSOTD should prioritize the high-flow M400 Skid Steer for airdrop certification, even as a heavier skid steer variant is considered for long-term fielding. The Tri-Service Pavements Working Group should refine and expand its ADR manual to include both ADR Best Practices and airfield assessment procedures; in the same vein, the Combined Arms Center's Training Management Directorate should develop and publish complementary T&EOs for airfield assessment and multi-surface ADR procedures to better direct unit-level training. Finally, as the Army develops its future force

structure, the addition of an Airborne ESC to the 11th Airborne Division should be considered.

There is reason for optimism about the Regiment's way ahead in preparing itself for ADR in the maritime domain. Leaders from the EAB engineer brigades, platoon-level ADR experts, and joint force representatives (such as the Seabees) converged on ERDC's headquarters in late fall of 2022 with an eye to creating shared goals, improving interoperability, and familiarizing themselves with the techniques and equipment still under development. The 20th Engineer Brigade, perennially responsible for the Immediate Response Force's Airfield Damage Repair mission, is hosting a multi-week ADR Symposium in the summer of 2023, intended to share TTPs and experience across the practitioners of ADR in each service, as well as with ERDC and other entities more involved with institutional efforts. These efforts demonstrate an Army-wide intent to better train and equip our engineer forces for this unique requirement. Between the research proponents and ground-level practitioners, we have both the will and the way to prepare for ADR on the future battlefield - we need only to put them together.

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1LT Hannah Gillan serves as a company Executive Officer in the 2nd Battalion, 58th Infantry Regiment at Fort Benning, GA. She previously served as the Executive Officer of the 618th Engineer Support Company (Airborne) at Fort Bragg, NC. She holds a B.A. in International Studies from the Virginia Military Institute.



# DEVELOPING THE ARMY OVER

# TIME



*By SPC Kristofer L. Smith*

Since 1765, the United States has been no stranger to conflict. Early on, the United States Army adopted a guerrilla style tactical approach to combat the superior numbers of the British forces. As times changed and technology advanced, the Army adopted its tactics to the situation, creating a powerful combination between land, air, and sea. Specialists in each field of the combined arms have also created devastating results when our own forces and allies combined. Even early on, the Army utilized Medics on the ground to save wounded, tankers to handle both small and heavy arms targets, bombers to level military facility and positions, naval vessels to transport troops and armor, and battle ships to secure supply routes and to bombard other ships and coastal positions.

Through the combination of these arms, it has allowed the Army to be very flexible with its tactics. However, one universal thing that has always been critical to its successes - careful and precise planning in each operation. Developing plans of action, emergency responses, and having nearby units to assist to keep the mission successful. In World War II, the United States was tested on all fronts. At war at sea in the Pacific, troops island hopped to secure island after island. Air support was also critical for both our naval operations and in the western theater. Careful planning and decisive action from both leaders and soldiers made each mission a success.

Even more recently, the War on Terror since 2001, our tactics had to change once again. The enemy then did not wear a uniform, they wore civilian clothes, and blended in with any bystander on the side of the road. The Army had to develop tactics that would allow us to defend ourselves and still assume the offensive in the right conditions. Reconnaissance, although always an important asset, was essential for locating precisely where the threat was in a sea of people in a sea of people who blended in with the common man. With the growth of technology, we also developed the ability to perform night operations, raids, as well as quick and undefendable assaults from close range.

Throughout time, we have developed specialists, to excel at certain Waspects in the field of combat. Cyber warriors to defend and assault the growing world of technology all around us. Rangers who excel at navigation and acting in small groups with deadly accuracy from close range. Pilots who can operate different vehicles with different functions to provide multiple forms of support that we may need from the air. Captains who can guide a ship or even a fleet to victory over open waters. These experts also include the engineers.

## The Role of The Engineer

Engineers have always played a crucial role on the battlefield. They are the in between for what can and cannot be possible during an operation. A road may be blocked off, preventing vehicles from passing. However, with an engineer unit, the obstacle may be cleared, and the desired route can be followed. If there are too many avenues of approach to a defensive position, Engineers can emplace obstacles for additional security. If we require more defendable fighting positions or need to remove enemy positions, Engineers can handle both. Future threats to our nation will likely come from threats who have well designed and organized militaries such as our own. They will have modern armor, planes, ships, tactics, equipment, and technology. Our Engineers will need the knowledge, skill, and equipment to handle whatever the job may ask for - both on the ground and at sea.

On offense, an Engineer is inclined to deal with extreme amounts of pressure. Bullets may be flying, bombs dropping, and Engineers could be either the target or in the middle of it all. Engineers will need countless hours of training at their task so that when this pressure hits them, they can still complete the desired task. Breaching anti vehicle ditches, wire, minefields, whatever the situation may be, they will need to be able to act quickly and decisively. They will need to breach these obstacles in different environments, whether it be dry and rocky, or raining and in the mud. It always pays to use the right tool for the job, but what happens



when that tool isn't available? Engineers should also be trained to improvise and become comfortable using different equipment for different tasks at hand.

On defense, many difficult factors and choices will be at play. What obstacles can the Engineer build? What fighting positions should be implemented? Where and how many do we need? Do we have the time to effectively build them all? When communicating what we can and cannot do, given the circumstances, Engineers at any level, leaders or operators, should be able to explain both limitations and capabilities. When actually operating, Soldiers should be able to consider the terrain on which they are operating on and be trained to build their defensive positions as quickly, without sacrificing functionality.

Engineers still have a role to play at sea, not just on land. Maintaining and keeping ships and their weapons afloat is an absolute necessity. Mines can also appear underwater, posing a threat to submarines and other vessels. Natural barriers like reefs, rivers, hills or valleys can be in the way of an operation. Engineers will need training on their equipment to approach and defuse deep sea mines, remove natural barriers, or find ways over them or around them. This is why we have different types of Engineers and different Engineer unit structures.

Bridging companies specialize in crossing gaps, like narrow ravines or rivers that ordinarily a vehicle could get stuck in. Multi role bridging companies can carry equipment or troops over bodies of water to assault from unexpected angles or quicker more direct approaches. Route clearance companies can clear paths of mines and other forms of obstacles that may slow down a convoy. Construction companies can build roadways for transporting

supplies or more permanent forms of defense like concrete barricades or watch towers. The newly formed armored combat engineer company can perform bridging operations, offensive breaching, and defensive operations while still maintaining strong offense and defensive capabilities without the additional support of another unit. This allows the unit to act more independently while still maintaining effectiveness against both infantry and some armored threats.

Engineers also have roles to play in urban areas as well. Combat engineers who excel both in explosive breaching and weapon handling are effective with opening locked doors or bringing down structures. Construction engineers can also be useful in city environments. Both in repairing any damages done for continued use or in complete demolition. In a much more direct approach, the equipment could be used to bury a stronghold with its defenders still inside.

## Looking Ahead

Future units that come to form will need to consider what they can do on their own. Without proper support, they could find themselves stuck in a very unfavorable position in combat or unable to perform a desired task. Newly formed units should consider the benefits of performing multiple roles or specializing in one specific task. They will also need to consider the potential environments they will be in. Engineers could operate in jungles and forests, or in open plains. It could be a dry and hot environment or a wet and humid one. The ground could be soft like sand or layered with rocks. All are important in the life of an engineer.

Future leaders should be well versed in their equipment and tasks in the unit to train and mentor soldiers under their charge. They need to be able to explain the importance, function, and how to construct anything the mission can call for. They will also need to be a bridge



between what is requested and what the soldiers are actually capable of doing. It is not uncommon for engineers to be requested for something they may not be able to perform. It is up to Leaders to explain what they can do, how quickly, and how effective it will be.

Future operators will need to take their training seriously and learn everything they can before the time comes to use that training. Operators should seek opportunities for additional training as well as researching job related information for their personal growth. They too, will be leaders one day, and will need to guide others to success as well. Leaders should also encourage extra training, as well as providing tools and resources to assist them.

Whether in tandem with other Engineers, artillery, or infantry, the ability to build up or break down the environment in our allies favor is crucial to gaining the upper hand in combat. There is much to be learned, a very diverse array of things to train, and much experience to be gained through countless situations. All of which will build an operator, and a soldier in general, to be the best they can be.

It should be more common ground for engineers to train with allied near peers who can effectively demonstrate what going against a threat on equal levels to them is like. Knowledge is a weapon that could completely alter the course of battle. The more knowledge we can feed into our engineers for them to specialize in and implement in different scenarios will no doubt be a benefit to the Engineer core.



Photo by SPC Hassani Ribera Soto



Photo by Mr. Tad Browning



Photo courtesy of GDELS



Photo by CPL Rob Kane

SPC Kristofer L. Smith is assigned to the 59th CEC-A, 20th EN BN at Fort Hood, TX. He joined the army as a 12N at eighteen years old in 2020. His duties include operation of heavy construction equipment such as the Dozer and I-HMEE to build fighting positions, defilades, and ditches. All of the images are courtesy U.S. Army and/or specified contributors.

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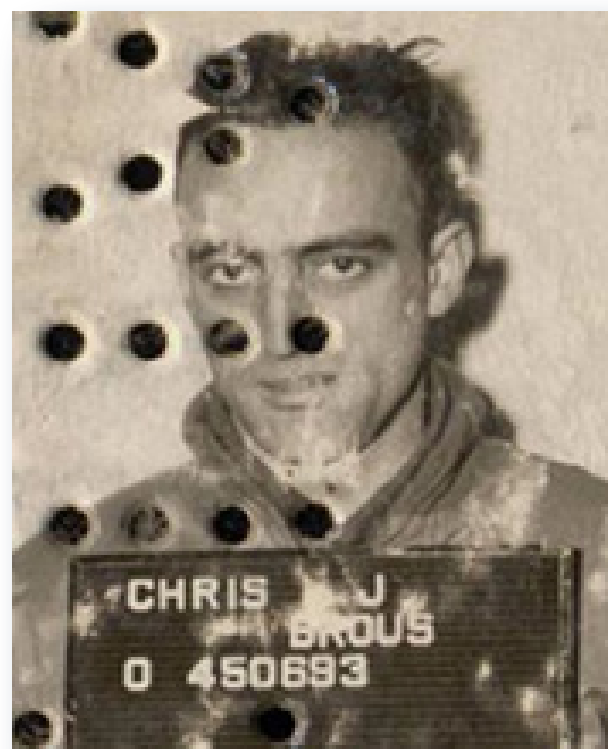




# Chronicles of COURAGE

## ★ CPT Chris J. Brous ★

by  
TROY MORGAN  
Director, U.S. Army Engineer Museum  
Fort Leonard Wood, MO



Photograph from CPT Brous' identification card.



CPT Chris J. Brous, shortly after being assigned as a company commander in the 23rd Engineer Battalion.

In the early morning hours of August 2, 1944, Captain Chris J. Brous was returning from inspecting his front line troops. As his jeep rounded a turn in the road, it was struck by tank and machine gun fire, killing the driver. Captain Brous and First Lieutenant McKinney were taken prisoner. Both Engineer officers were wounded. They were ordered to sit in a nearby field to await transport to a German hospital. Realizing that his field notes might contain information harmful to the Allied cause, Captain Brous tore them into tiny pieces and buried them. In route to the German hospital, Lieutenant McKinney asked what he should do with his field notes. Captain Brous responded, "You know your orders, eat them!" At the hospital, the German surgeons removed 16 shell fragments from Captain Brous' left thigh and chest. He was then sent to a German hospital in Paris. On August 18th, Captain Brous and 80 other Allied prisoners were taken to a train station for transport to a Prisoner of War (POW) camp in Germany. Brous serving as an enlisted man in Panama. Photograph from Captain Brous' identification card. Captain Brous made

contact with the French Underground through a worker at the station. They arranged to shoot up the train engine pulling the POW train. Concerned that the train might be accidentally attacked by Allied aircraft, Captain Brous asked the German guards for permission to paint red crosses on the train cars. The POW train was liberated by Free French troops on August 22nd . Captain Brous was awarded the Bronze Star and Purple Heart Medals for his actions. After rehabilitating at an Army hospital in England, Captain Brous insisted on rejoining the 23rd Engineers. Captain Brous exercised the Army Value of Integrity by doing what was legally and morally right. His actions of destroying his field notes, directing Lieutenant McKinney to eat his notes, ordering the destruction of the train engine, and marking the train with a red cross to ensure the safety of the soldiers were legally and morally correct. These actions promoted the Allied cause while impeding the German efforts.



CPT Chris J. Brous, shortly after being assigned as a company commander in the 23rd Engineer Battalion.



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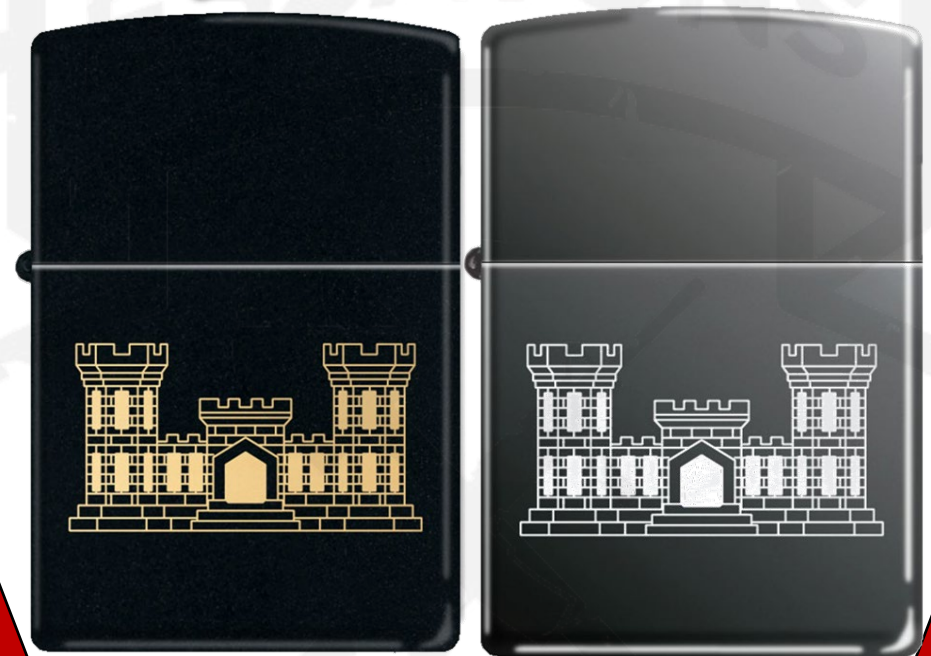
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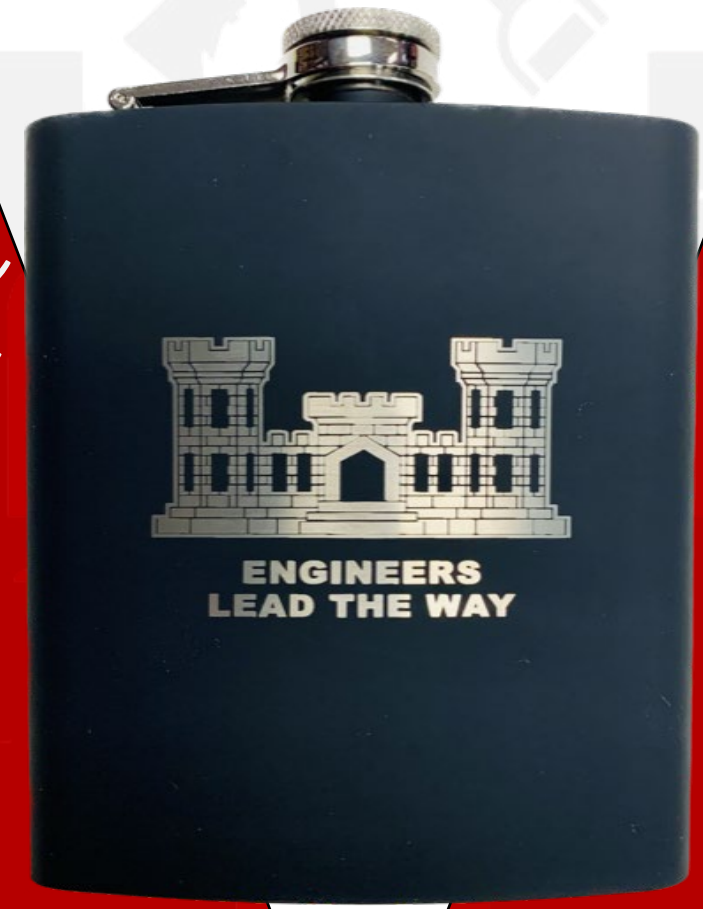
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Mrs. Birgit Smith, SFC Paul Ray Smith's widow, sponsored the USS Freedom, the first Freedom class littoral combat ship. Her initials are welded on the ship's keel. SFC Paul and Mrs. Birgit Smith have their Saint Christopher medal and wedding bands embedded in the ship's mast.