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Artillerymen

Fires



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This 2009 *Red Book* edition of the *Fires* Bulletin is dedicated to the U.S. Army's Noncommissioned Officer Corps which has **DISTINGUISHED ITSELF** for more than 200 years. The NCOs put forth **A GREAT EFFORT** on this issue and in true "backbone" fashion produced an outstanding product. It is clear that the **FIRES NCOs UNDERSTAND THE FIRES STRATEGY AND WHERE WE ARE HEADED** as a Fires Center and Fires Force.

Since the inception of the Fires Center of Excellence, the synergies between the two branches, the field artillery and air defense artillery, have continued to grow especially in our capabilities development. There's never been a more exciting time to be a Fires professional. **NCOs, KEEP UP THE GREAT WORK**, this *Red Book* is dedicated to you in the "Year of the Noncommissioned Officer" and **THANK YOU AGAIN FOR YOUR DEDICATION TO OUR ARMY.**

Agile – Decisive – Anywhere – Anytime! Fires Strong!

David D. Halverson
Major General, United States Army
Commanding General
Fort Sill, Okla.



THE NCO – THE "BACKBONE" OF OUR ARMY

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PURPOSE: Founded in 2007, *Fires* serves as a forum for the professional discussions of U.S. Army and Marine Field Artillery (FA) and Army Air Defense Artillery (ADA) professionals, both active and Reserve Component (RC); disseminates professional knowledge about the FA's and ADA's progress, developments and best use in campaigns; cultivates a common understanding of the power, limitations and application of joint fires, both lethal and nonlethal; fosters joint fires interdependency among the armed services; and promotes the understanding of and interoperability between the FA's and ADA's active and RC units—all of which contribute to the good of the FA and ADA, Army, joint and combined forces, and our nation.

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The Senior NCO's Perspective on the State of the Fires Center of Excellence

By CSM Joseph D. Smith,
Command Sergeant Major
of the Fires Center of
Excellence and
Fort Sill, Okla.



What is the Fires Center of Excellence? What can and will it do for me, the Fires Soldier? These are just a couple questions that some of you near and far from the flag pole might be wondering. Most of you know that the FCoE includes both air defense and field artilleries, but again what does that mean for you? In this article I will give you, "The senior NCO's perspective on the state of the Fires Center of Excellence," and the discussion will include what the Fires center is about and what it can do for you.

Initially, the Fires Center of Excellence became a reality on Aug. 14, during a flagging and patching ceremony. The unveiling of the new unit colors and donning the new patch signified the Fires Center of Excellence's headquarters detachment achieving initial operating capacity. Oct. 1, 2009 marked the effective date of the unit operating with an approved organizational structure of more than 1,300 Soldiers and Department of the Army civilians.

The Fires Center of Excellence is working hard to support the warfighter. The commanding general has started a blog in order to interact with Fires Soldiers throughout the world. The blog is your chance to ask the CG a question or let him know how the Fires Center of Excellence can better support you. You can find the CG's blog here: usacac.army.mil/blog/blogs/fires/ or you can follow the link from the Fires Knowledge Network. The Fires center also has a Facebook page. We are posting stories and pictures that are relevant to the Fires community. Log onto www.facebook.com/home.php#/pages/Fires-Center-of-Excellence/129815299935?ref=nf. Become a fan and tell us what you think. Most of you have probably noticed the "Message to Observer" message that comes to your Army Knowledge Online e-mail address has changed names. It is now called "Fires Forward" and contains links to articles relevant to not only the field artillery but also the air defense artillery. And, as always, the *Fires* Bulletin continues to publish information and new articles for the warfighter.

Probably the single most important part of an NCO's career is professional education, and we have made several adjustments to keep up with our warfighting missions. With the addition of air

defense artillery NCO Education System courses, Fort Sill's NCO Academy will soon be known as the Fires NCO Academy. Within the next year, under U.S. Army Training and Doctrine Command's transfer plan, the Fort Polk, La., and Fort Hood, Texas, NCO Academies and Warrior Leaders Courses will fall under the Fires Center of Excellence's command and control. The Warrior Leaders Course has transitioned from 30 to 15 days, and will increase to 17 days by January 2010. The change in length of the Warrior Leaders Course will provide our junior NCOs more opportunities to receive valuable training. The Basic NCO and Advanced NCO Courses are also being revamped, and will be renamed the Advanced Leaders Course and the Senior Leaders Course, respectively. The length of these courses is being extended by an average of about two weeks. We have also scheduled several air defense artillery and field artillery mobile training teams for the next year to help the warfighter at home station. We are also working to acquire funding for a brand new NCO Academy, as part of the fiscal year 2013 Military Construction Project here at Fort Sill, Okla., giving us a general instructor building of over 107,000 square

feet as well as billets capable of holding more than 200 students.

The end game. The Directorate of Training and Doctrine has developed a computer simulation/game, called "Danger Close," that encompasses training aimed at platoon-level leaders (lieutenants and sergeants first class) in leadership skills. These are the skills (knowledge on topics such as equal opportunity, suicide prevention, family issues and fraternization) needed by a platoon leader in both tactical and administrative environments. It has recently been introduced into the NCO Academy curriculum; and has received very positive comments. We are continuing to



A Soldier scans his sector on perimeter defense as others attend to wounded comrades in the background during simulated firefights at the Warrior Leaders Course at Camp Eagle, Fort Sill, Okla., Aug. 31. (Photo by James Brabeneck, the Cannoneer)

grow this new product and expand training, embracing gaming technology that will allow intelligent tutoring, aspects of artificial intelligence and web connectivity.

Our Directorate of Training and Doctrine has also led the way in the Fires Center of Excellence's efforts to develop four courses related to electronic warfare. The "Electronic Warfare Integrators Course" provides the skill identifier "1J" to those who successfully complete it. Designed to meet the needs of battalion and brigade commanders, this course graduates leaders who are qualified to perform the function of integrating electronic attack with the maneuver commander's scheme of Fires. Three additional courses were developed and piloted during fiscal year 2009, and are interrelated to the establishment of a new electronic warfare military occupational speciality. Called the "Functional Area 29 Course," it will develop electronic warfare officers. This course has completed three pilots and is in the process of receiving Training and Doctrine Command validation as an approved course. The "Military Occupational Speciality 29E Course" and "Warrant Officer 290A Course" also provide the full circle of courses needed in the establishment of a new military occupational speciality that supports the Army. Still in development and will be executed in the future are the NCO Education System courses and the Warrant Officer Advance Course for this new and exciting field of electronic warfare.

Our Directorate of Training and Doctrine has also been developing other new training for our officers by working closely with 428th Field Artillery Brigade and 6th Air Defense Artillery Brigade. New Captain Career Course materials as well as modifying the Basic Officer Leader Course are currently underway. After analyzing the course materials of Basic Officer Leader Course II, it was terminated and absorbed into Basic Officer Leader Course

III, but a new course, Basic Officer Leader Course B, is currently under development. Our Captain's Career Course continues to mature and change based on the needs of the leader and the needs of the warfighter.

Celebrating our heritage. Remembering and celebrating the rich histories of our branches will enable us to make our own great history as Fires Soldiers. The Fires Center of Excellence is making great progress in developing its museum complex. The Fort Sill Museum has new galleries — the new Field Artillery Museum on Randolph Road opened this past June during the annual Fires seminar. The Field Artillery Museum continues to evolve and grow with new exhibits, dioramas, scene replications and other improvements. A valuable part of this, the new Artillery Park area north of the museum, is ready to begin construction in fiscal year 2010 and will result in a new location for the famous "Cannon Walk." Additionally, plans are in the works for unveiling of the Field Artilleryman Statue in June 2010, and the relocation of Constitution Park and related

"Remembering and celebrating the rich histories of our branches will enable us to make our own great history as Fires Soldiers."

memorials to the museum complex. The Air Defense Artillery Museum is scheduled to begin construction adjacent to the Field Artillery Museum in 2011, and is projected to be open by 2013. This will make the Fires Center of Excellence the largest Army museum complex west of the Mississippi River. Our goal is to make it a premier location for students, Soldiers, families, historians and researchers to be drawn to the Fires Center of Excellence to use these great resources.

The biggest thing to remember is that the Fires Center of Excellence is here to support you, the warfighter. By embracing change, the Fires Center of Excellence will ensure that Fires Soldiers remain the most lethal and well trained Soldiers in the world.

Fires strong!



An artist sketch of the Air Defense Artillery and Field Artillery Museums. The Air Defense Artillery Museum is scheduled to begin construction adjacent to the Field Artillery Museum in 2011. The Field Artillery Museum opened this past June. (Fires archives)

2009

State of Air Defense Artillery: a new era of change

“It takes a lot of courage to release the familiar and seemingly secure, to embrace the new. But there is no real security in what is no longer meaningful. There is more security in the adventurous and exciting, for in movement there is life, and in change there is power.”

Alan Cohen

The solid rocket engine lights and propels the Stinger missile launched from the Avenger weapons system platform at McGregor Range, N.M., during a live-fire exercise conducted by 3rd Battalion, 265th Air Defense Artillery Regiment, May 1. (Photo by MAJ Deanna Bague, U.S. Army)

By CSM James T. Carr Sr., Command Sergeant Major, U.S. Army Air Defense Artillery and Air Defense Artillery School



In 2009, we saw a lot of change; the biggest to date is our collocation with the field artillery here at Fort Sill, Okla. This move was the culmination of many hours of effort and hard work for the entire air defense artillery community and enabled us to create a new beginning, together, with the field artillery. Our focus, for several years to come, will be on effectiveness and efficiency as a Fires force in a variety of situations and with a variety of partners.

The air defense artillery leadership is now in the process of concentrating on implementing the Air Defense Artillery Strategy as penned by BG Roger F. Mathews, Chief of U.S. Army Air Defense Artillery. To read the full strategy, log onto Army Knowledge Online and the Fires Knowledge Network homepage located at <https://www.us.army.mil/suite/page/1030700>.

This strategy is our blueprint and our steering mechanism for fielding new organizations and new weapons systems while establishing a new home here at Fort Sill. But as we continue to grow and adapt, we won't lose sight of our priorities — growing leaders, honoring our past while fully engaging in our future and, most importantly, taking care of our

families, because without the full support of our Soldiers and our families, nothing else matters. Our world-class treatment of our families will include providing never before seen resources and our exclusive reach-back guarantee; that's how important our Soldiers and their families are to us.

Growing leaders. The branch is implementing a new system to grow enlisted

leaders that will create less of a "bottleneck" at the top once a Soldier desires to reach the rank of command sergeant major. This new system was created to get some of our junior Soldiers coming up the ranks more opportunities for promotion and experience that didn't exist before. The junior enlisted Soldiers are our future; by taking care of them, we are ensuring we have a professional Fires force that can carry us into the 21st century. Additionally, air defense artillery Soldiers have the opportunity to perform missions supporting our branch in a variety of occupational specialties from "mud to space." Our Soldiers, once again, can look forward to permanent change of station assignments in several locations in the Continental U.S., as well as being assigned to Germany and the Pacific Rim.

I am proud to say our female air defenders are setting standards within the corps. This past year, two female air defenders were selected for promotion to the rank of sergeant major and attendance to the U.S. Army Sergeants Major

Academy. Moreover, female air defenders continue to do great work in both Military Occupational Specialties 14J Air Defense Tactical Operations Center Operator and 14S Avenger Crewmember for the last six years; female air defense artillery Soldiers have served as MOS 14E Patriot Fire Control Enhanced Operators/Maintainers and 14T Patriot Launching Station Enhanced Operators/Maintainers from the beginning.

Growing leaders also means providing educational opportunities. Being a professional means more than gaining military occupational specialty skills; it also means taking advantage of civilian college courses. That is why, as NCOs and leaders, we must provide every opportunity for our Soldiers to participate in civilian training and college education, avenues of self-development and experience for them to continue to achieve success. Proactive leaders should be able to think beyond Army regulations, to be able to get outside of their comfort zones and outside the traditional mindset. And it is only through these other types of experiences and education a Soldier can gain insight and maturity to know when is appropriate to deviate from a set course of action.

Along those lines, we also will continue to work with civilian institutions to ensure "credit" for our military occupation specialty courses. We will continue to provide incremental updates to our professional developmental career maps.

Remember the past, engage the future.

Every great leader has one thing in common — they never lose sight of where



they came from, and the men and women of air defense artillery should be no different. Just because we now make our home at Fort Sill, it doesn't mean we are destined to forget about our history as air defense artillerymen. Fort Bliss, Texas, was just a place — it is not what makes us who we are. It doesn't matter where we hang our hats; it's what we carry inside us that is essential.

Everyone has heard the expression "home is where the heart is," and having heard it hundreds of times before doesn't make it invalid or irrelevant. We carry in our hearts a rich heritage of supporting the maneuver force since our inception as anti-aircraft artillery in World War I. We defended the Ludendorff Bridge at Remagen, as the Army advanced to end World War II. We employed Duster 40-mm guns in Korea and Vulcan alongside the infantry in Vietnam. We intercepted scuds in Operation Desert Storm, and we prevented the "decapitation strike" in Operation Iraqi Freedom by intercepting a ballistic missile just hundreds of feet above the land component commander's morning battle update brief. Time and time again, we provided freedom of action from the tactical to the strategic levels, and this will not change just because we now call Fort Sill home. It's essential not to get mired down

with ties to a place, but move forward and embrace our future. Don't forget what's in our hearts, and be ready to engage no matter where our operation tempo takes us.

Hold up traditions. Even though we are busy gearing up for operations now and in the future, I encourage you to don't forget the simple traditions that come with life in the Army — traditions such as NCO inductions, Soldier and NCO boards, and dining-in ceremonies. Don't get so caught up in day-to-day operations that these types of traditional gatherings are forgotten about or fall to the wayside. If they do, it is doing our younger generations a great disservice.

According to Winston Churchill, "The farther backward you can look, the farther forward you are likely to see." As an NCO it is imperative to teach young Soldiers the significance of pinning on sergeant's stripes. Even though we are in the 21st century, the rank of NCO has been around since the Army's inception.

Other countries say that one of the things that set the American Army apart from all others is the strength of its NCO Corps. In other armies, it would be unheard of for them to give some of the tasks to NCOs that routinely are performed by NCOs in the American Army.

The air and missile defense forces are

entering exciting times and we will continue to grow as the missions and demands on our force continue to grow more challenging and complex. No matter where we are, we will continue to defend our maneuver forces as we pursue victory — because we will accept nothing less.

First to fire!

Command Sergeant Major James T. Carr Sr., air defense artillery, is the command sergeant major, U.S. Army Air Defense Artillery and Air Defense Artillery School at Fort Sill, Okla. He served as brigade command sergeant major of 35th Air Defense Artillery Brigade, Osan Air Base, Republic of Korea; command sergeant major of 1st Battalion, 7th Air Defense Artillery; S-3 operations sergeant major, 1st Battalion, 7th Air Defense Artillery, 108th Brigade, and quality assurance officer, Title XI Offices, all at Fort Bliss, Texas. He also served as First Sergeant, 6th Battalion, 52nd Air Defense Artillery (Patriot), Ansbach, Germany; Senior Drill Instructor, 1st Battalion, 56th Air Defense Artillery, Fort Bliss; Avenger Platoon Sergeant, 5th Battalion, 5th Air Defense Artillery, 2nd Infantry Division, Republic of Korea; Avenger Squad Leader, 2nd Battalion, 62nd Air Defense Artillery, Fort Ord, Cali.; and Stinger Squad leader, 3rd Battalion, 79th Field Artillery, Giessen, Germany.



A Terminal High-Altitude Area Defense System (Photograph courtesy of Lockheed Martin)

2009

State of the Field Artillery: aggressive and adaptive for today and tomorrow

By CSM Daniel R. Willey,
Command Sergeant Major,
U.S. Army Field Artillery and
Field Artillery School



“The key elements in the art of working together are how to deal with change, how to deal with conflict, and how to reach our potential ... the needs of the team are best met when we meet the needs of individual persons.”

Max DePree

These are definitely exciting times to be a field artilleryman. The Fires force is an adapting force. The nonstandard mission is now the standard mission for the foreseeable future. I see a lot of goodness and opportunity for our Soldiers as we change and adapt during this era of persistent conflict. The fact we can understand the significant effects of the right combination of lethal and nonlethal fires and apply them accordingly assures me the field artillery will remain the premier, worldwide-deployable fire support force for now and in the future. Change is always good. The challenge is how to deal with the unanticipated consequences of change.



Fire blazes out of the barrel of a 155-mm towed howitzer when Soldiers of C Battery, 1-321 Airborne Field Artillery Regiment, Fort Bragg, N.C., launch a round at Camp Wright, Afghanistan, Sept. 23. (Photo by TSgt Brian Boisvert, U.S. Air Force)

The field artillery has proven during the last eight years our Redlegs can integrate and deliver timely joint lethal and nonlethal Fires across the full spectrum of operations – offense, defense and stability/civil support – better than any other branch or service. Because of this innate ability to dominate any environment, we will continue to be trendsetters of fires integration tactics on 21st-century battlefields. One never can say being a field artilleryman is a boring profession.

This past year has been fast paced as the collocation of the Field Artillery and Air Defense Artillery Schools and Centers at Fort Sill, Okla., was completed to create the Fires Center of Excellence. This capstone event signaled a new beginning for both the field artillery and air defense artillery. Both branches, together, will focus on effectiveness and efficiency as an integrated Fires force.

Our priorities. For the next several years, the field artillery leadership will concentrate on implementing the Field Artillery Strategy as penned by BG Ross E. Ridge, chief of the U.S. Army Field Artillery. This strategy defines several priorities and goals that will enable the field artillery to best integrate our Fires function into the way we fight. The field artillery must take ownership of these priorities to achieve this integration. To read the full strategy, log onto the Fires Knowledge Network homepage at <https://www.us.army.mil/suite/page/1030700>.

Our first and foremost priority is to recruit and retain quality Soldiers, leaders and civilians. Then, we must ensure we are in the business of growing flexible, adaptable and agile leaders capable of joint and combined interoperability and being just as responsive in joint and combined operations as we are in Army-only operations. Next, we must enhance recruitment, retention and leader development with a drive to take care of our families better than we ever have before. We are making huge gains in this area. Families matter. We are definitely not there yet, but, being a self-described eternal optimist, I view this as a half-full glass scenario, with a glass that is getting fuller every day.

I've chosen to highlight these particular priorities because all three boil down to one simple ingredient — taking care of our people. That's what NCOs do best. The bottom line is, if we don't take care of our people — the very reason we are so successful — even with the greatest strategy imaginable, we are doomed to fail at being the Fires force the Army needs to succeed.

Recruit and retain Soldiers. The best way to recruit and retain Soldiers is for NCOs to have daily, direct contact with their Soldiers. This is non-negotiable. Our NCOs continue to strive to understand their Soldiers and their families' needs, wants and desires. This isn't always an easy thing to do; the key to success most of the time is simply to listen. Listen when Soldiers talk to you; listen when they talk to each other. You'll be surprised about what you can learn about your Soldiers if you just take the time to listen.

I absolutely believe Soldiers who are in well-led and disciplined organizations reenlist even though they might have other opportunities. With the war going on for more than eight years now, our junior NCOs and Soldiers haven't known anything other than our at-war operation tempo. Constant deployments with minimal dwell time have been a huge stress on the entire force. Our Soldiers and families are tired. Yet, despite being tired, every Soldier wants to serve and be a part of a team – that's why they voluntarily joined our Army while at war. There's no better way to make a Soldier feel like he's part of team than by ensuring him that he or she is value added to the unit. If they get this from their leaders, they'll stick around. An easy way to do this is to delegate responsibility and empower Soldiers. Fix their mistakes, but ensure they grow from those mistakes. One more thing, leaders must always keep the thought that you can recruit a Soldier, but it takes work to retain a family.

Grow leaders. With nonstandard field artillery missions now being the standard, growing flexible, adaptable and agile leaders with joint and combined interoperability skills is tough business. The nonstandard missions will remain throughout this "era of persistent conflict." So, put it in your head and lock it in. We can choose to gripe about it. We can choose to moan about it, but that isn't going to change anything. The field artillery branch is as relevant today as it has ever been. If the senior mission commander needs us to perform detainee operations, we can do it. When we are asked to perform security missions, fixed or mobile – it's not a problem. We just have to be able to shift our focus as needed. In Iraq, we are performing nonstandard missions daily. In Afghanistan, we are delivering indirect fire in close support of our infantry brothers daily and

simultaneously performing nonstandard missions. We are the primary integrators of all types of fires in both theaters and doing it extremely well. The key is capturing as many lessons learned as possible and incorporating them quickly into our instruction here at Fort Sill. Every course within the schoolhouse now is reviewed and updated continually to incorporate changes identified in the lessons learned down-range.

Individual responsibility. Each Soldier must take personal responsibility for keeping up to date with field artillery news. Just as each Soldier is responsible for his own actions, he is responsible for a large part of his own education. The Fires Knowledge Network is a great tool for Soldiers to stay abreast of actions relevant to our branch. Your Army continual learning process starts with Basic Combat Training and Advanced Individual Training and continues until the day you retire. Strive to be a professional student of your branch. Start by going online; read magazines like the *Fires* Bulletin. With Fires Knowledge Online and the Army's social networking sites, there are limitless opportunities to learn about field artillery as a profession. We just launched a new media in our continued efforts to reach out to the force: "Fires Center of Excellence" blog site. Participate in this to help make it better. Self-improvement is essential to doing well in any profession.

Being a professional means more than gaining military occupational specialty skills; it also means taking advantage of outside college courses. As NCOs and leaders, we must provide every opportunity for our Soldiers to participate in civilian training, college education and personal avenues of self-development and experience to continue to achieve success. Experiences and education can give Soldiers the insight and the maturity to know when it is appropriate to diverge from the known azimuth – to be adaptive.

We must be schooled in field artillery basics. But we also must become adaptive leaders who are proficient in joint and combined expeditionary full-spectrum operations and culturally astute and resilient to uncertain and ambiguous environments.

If you need assistance with your efforts to execute critical training at the unit level, don't be shy about contacting the school here for, and the school has good reach-back capabilities to execute exportable training and mobile training teams.

Precision is now. At the end of the day, our reputation as the world's best Fires force rides alone on our precision, both in terms of target attack and timing. For the past several years, success on the battlefield meant the least amount of force to gain significant support of indigenous populations. Due to the urbanization of the battlefields our enemies operate in, this is unlikely to change anytime in the near future.

Critical for the success of Fires is the integration of the systems of the future while sustaining and upgrading our current weapons. We must also enable systems that support the current fight. In sync with bringing new systems online, we must have the capability to train more effectively and efficiently through the use of simulations and at combat training centers to get precision, low round-count fires.

This past year has seen several recently-fielded revolutionary munitions and systems (Excalibur, Precision-Strike Suite-Special Operations Force, Guided Multiple-Launch Rocket System) enhance our ability to integrate timely and effective lethal and nonlethal fires in support of the maneuver commander. Precision must be in our mind set – not just from new munitions and systems, but with our legacy equipment well.

Anticipate – integrate – dominate!

Command Sergeant Major Daniel R. Willey is the command sergeant major of the field artillery and the Field Artillery School at Fort Sill, Okla. Previously, he served as Command Sergeant Major of Fort Lewis Garrison, Wash.; and Command Sergeant Major for 3rd Battalion, 319th Field Artillery, Fort Bragg, N.C., deploying in support of Operation Enduring Freedom.



Paratroopers from 1st Platoon, A Battery, 2nd Battalion, 377th Parachute Field Artillery Regiment, 4th Brigade Combat Team (Airborne), 25th Infantry Division, fire rounds from a howitzer in support of paratroopers from B Company, 3rd Battalion, 509th Infantry (Airborne), while B Company conducted missions in the area of Khost, Afghanistan, May 11. (Photograph courtesy of 4th Brigade Combat Team, 25th Infantry Division Public Affairs)

Silhouettes of STEEL

Updates from across the
air defense and
field artillery communities

3rd Battlefield Coordination Detachment-Korea



Soldiers of the 3rd Battlefield Coordination Detachment remember the veterans who fought during the Korean War Battle of Hill 180, also known as "Bayonet Hill," at a ceremony in February. (Photograph courtesy of the 3rd Battlefield Coordination Detachment)

operations during this March exercise.

The second major joint and combined theater level exercise is Ulchi Freedom Guardian, which normally is held in August. Ulchi Freedom Guardian is a joint and bilateral exercise on the Korean peninsula. The 3rd Battlefield Coordination Detachment-Korea's pivotal role is providing the coordination link between the ground component command and the combined air command to coordinate and synchronize the execution of joint fires. Ulchi Freedom Guardian 2008 was particularly special because it marked the first year the Republic of Korea military took the lead role.

Saint Barbara's Day. The celebration of Saint Barbara's Day is a time-honored tradition shared among all artillerymen. The 3rd Battlefield Coordination Detachment-Korea hosted two outstanding Saint Barbara's Day Balls, inducting 16 deserving Soldiers into the Honorable and Ancient Order of Saint Barbara. Due to the unique combined environment of the 3rd Battlefield Coordination Detachment-Korea, it had the honor of inducting seven Republic of Korea army officers and NCOs into the order.

Other events. Each February, the 3rd Battlefield Coordination Detachment-Korea hosts a memorial ceremony for the Korean peninsula to honor the veterans who took part in the decisive action at the Battle of Hill 180, also known as "Bayonet Hill," on Feb. 7, 1951. The ceremony remembers the men of Easy Company, 27th Infantry Regiment *Wolfhounds*, commanded by, then, Captain Lewis L. Millett, who led a bayonet charge against a well-entrenched and larger Chinese force and ultimately prevailed. The event receives national coverage and normally is presided over by the U.S. Forces Korea commander or the 8th Army commander.

The 3rd Battlefield Coordination Detachment-Korea hosted Osan Airbase's first and second annual Cold Steel Sprint Triathlon. The event featured a 400-meter swim, 20-kilometer bike ride and a 5-kilometer run. Participation continues to grow as local businesses provide sponsorship. The event has turned into an all-day affair because of the great sponsorship and support from the surrounding Korean community and Osan Air Force Base, culminating with the awarding of ribbons and trophies for individual and team winners.

The 3rd Battlefield Coordination Detachment-Korea continues to train hard, maintain tactical and technical proficiency, and stand at the ready to *Fight Tonight. Strike Deep!*

During the past two years, the 3rd Battlefield Coordination Detachment-Korea conducted numerous theater-level exercises (both joint and combined), a change of command and several local exercises, and hosted two triathlons, two Saint Barbara's Day Balls and two Hill 180 (Battle of Bayonet Hill) commemorations along with a long list of military training, community and family events. The unit is preparing to move into a transitional headquarters in preparation for its new headquarters, forecasted to be complete in fiscal year 2012. The 3rd Battlefield Coordination Detachment-Korea is poised and ready to *Fight Tonight*.

Exercises. During four peninsula operational exercises, the 3rd Battlefield Coordination Detachment-Korea coordinated air assets in support of ground operations as well as operational and intelligence situational awareness to the air component command. The exercises test the Air Force's ability to execute combat operations, receive follow-on forces and defend Osan Airbase from attack. The 3rd Battlefield Coordination Detachment-Korea participated in two peninsula operational readiness inspections, helping the 51st Fighter Wing earn a rating of "excellent" in 2008.

To maintain the *Fight Tonight* posture, the 3rd Battlefield Coordination Detachment-Korea annually conducts two major joint and combined exercises. The first, Key Resolve, tests the theater's reception, staging, onward-movement and integration abilities while maintaining contact with the enemy. 3rd Battlefield Coordination Detachment-Korea provides seamless and timely integration of personnel, resources and intelligence to support combined military



5th Battlefield Coordination Detachment : a joint endeavor

The Army's battlefield coordination detachments are an essential element in today's joint operating environment. As the Army's newest battlefield coordination detachment, the 5th Battlefield Coordination Detachment, Hickam Air Force Base, Hawaii, is assigned to U.S. Army Pacific. The detachment also functions as the Army service component command with a liaison mission to the 13th Air Force's 613th Air and Space Operations Center. 5th Battlefield Coordination Detachment's presence in the Pacific Command area of responsibility significantly enhances the theater's warfighting and deterrent capabilities for joint forces.

Exercises. The Pacific Command area of responsibility possesses a robust blend of joint and multinational operations, and as a result, the 5th Battlefield Coordination Detachment's relevance and roles continue to expand. An essential role for the detachment is supporting the Pacific Command theater campaign plan that is designed to enhance multinational relationships and combined warfighting skills. To accomplish this mission, the detachment participates in numerous joint and combined exercises annually such as Terminal Fury in Hawaii, Yama Sakura in Japan, and Talisman Saber in Australia.

The May 2009 Terminal Fury Exercise included the unique opportunity to execute the mission with I Marine Expeditionary Force as the Joint Forces Land Component Command. During the July 2009 Talisman Saber Exercise, 5th Battlefield Coordination Detachment worked hand-in-hand with the Australian battlefield coordination detachment, helping them establish and improve their standing operating procedures. Part of this mission included a visit to their battlefield coordination detachment to train with the Australian army and air force. Members of the 5th Battlefield Coordination Detachment coached and mentored their Australian counterparts on all aspects of the battlefield coordination detachment's mission and integration with the 613th Air and Space Operations Center.

5th Battlefield Coordination Detachment is now in the final planning phases for Yama Sakura in December 2009. The battlefield coordination detachment will enable joint air support with Japan as the regional partner for the training. 5th Battlefield Coordination Detachment's regional focus, integration and expertise afford it the flexibility to facilitate the introduction of land component forces into the Pacific Command theater, and theater campaign plan efforts continue to forge enduring relationships with regional multinational partners.

Other endeavors. Having achieved full operating capability in June, 5th Battlefield Coordination Detachment pursued several other capability building endeavors in addition to the theater campaign plan mission. It supported the Army Joint Support Team

Soldiers of the 5th Battlefield Coordination Detachment and the Australian battlefield coordination detachment stand together at Hickam Air Force Base, Hawaii, after the Talisman Saber Exercise in July. (Photograph courtesy of the 5th Battlefield Coordination Detachment)

by sending NCOs to perform the battlefield coordination detachment mission during various mission readiness exercises and National Training Center, Fort Irwin, Calif., rotations. These exercises help the Army Joint Support Team provide realistic training in air support coordination for contingency operations. In return, the Army Joint Support Team has a comprehensive mobile training team capability that the battlefield coordination detachment leverages in preparation for joint exercises.

Another external agency that 5th Battlefield Coordination Detachment works closely with is Program Manager Battle Command, which provides both battlefield coordination detachment and automated systems expertise, and conducts several annual assistance visits. Program Manager Battle Command has engaged the challenge of "authority to connect" issues for several battlefield coordination detachment Army Battle Command Systems within the 613th Air and Space Operations Center. This is a common issue across all battlefield coordination detachments, and obtaining this authority is key to maximizing integration and joint capability. 5th Battlefield Coordination Detachment also is postured to receive its ground liaison detachments this year and will ensure they are trained and resourced to accomplish their missions as the vital link between ground and air assets at the Air Force wing level.

School training continues to be integral to establishing and maintaining operating capability for battlefield coordination detachments. The Air Operations Center Initial Qualification Course at Hurlburt Airfield, Fla., is the premier course for preparing members of the detachment to excel in their missions. 5th Battlefield Coordination Detachment also attended the Joint Operational Fires and Effects Course mobile training team along with the Operational Fires and Effects Directorate Soldiers from U.S. Army Pacific in April.

It has been an eventful and productive two years for 5th Battlefield Coordination Detachment since its inception in July 2007. The first commander, Col. Tracy L. Lear, established the battlefield coordination detachment with the vision of "building confidence, synchronizing efforts and developing leaders." Col. Dewey A. Granger took command in July and forged ahead with the vision of, "We represent the Soldier." Building on a solid foundation, the 5th Battlefield Coordination Detachment is uniquely positioned to play a significant role in improving the joint capability and culture of our armed forces. *United in Victory!*

Silhouettes of STEEL

The 11th Air Defense Artillery "Imperial" Brigade



The 11th Air Defense Artillery "Imperial" Brigade, is located at Fort Bliss, Texas. Today, the brigade consists of Headquarters and Headquarters Battery, four Patriot battalions, two Terminal High-Altitude Area Defense System batteries, one Counter-Rockets, Artillery and Mortars task force, and a signal company. The brigade currently has three battalions deployed and continues to train for upcoming rotations throughout U.S. Central Command.

1st Battalion, 43rd Air Defense Artillery. 1-43 ADA moved to the train-ready phase in October 2008. The unit then conducted pre-deployment training and its mission rehearsal exercise in February 2009, followed by the available phase to deploy in March 2009. 1-43 ADA currently is deployed in the USCENTCOM theater of operations.

2nd Battalion, 43rd Air Defense Artillery. 2-43 ADA was deployed across three countries throughout USCENTCOM, Kuwait, Qatar and Afghanistan, from December 2007, to April 2009. While deployed, Soldiers participated in a combined air defense exercise with the Kuwaiti 46th Air Defense Battalion at Camp Arifjan, Kuwait. E Battery. 2-43 ADA deployed to Afghanistan from July 2008 to July 2009, and performed several missions throughout various forward operating bases. 2-43 ADA currently is the test battalion for the Patriot force conducting numerous tests for future software upgrades.

3rd Battalion, 43rd Air Defense Artillery. 3-43 ADA re-deployed from USCENTCOM April 2008 and in September 2008 became the test battalion for the Patriot force through August 2009. 3-43 ADA began pre-deployment training in September 2009 to prepare for deployment in the 2nd quarter of 2010.

5th Battalion, 52nd Air Defense Artillery. 5-52 ADA Soldiers had a unique deployment mission. Instead of deploying as a whole battalion, the individual batteries deployed intermittently during a nine-month time frame. The unit's initial deployment consisted of D Battery, and elements of F Company and Headquarters and Headquarters Battery left Fort Bliss, Texas, in October 2008. The rest of HHB along with C Battery and the battalion's leadership deployed in February, followed by B Battery deploying in June.

A Battery, 4th Air Defense Artillery Regiment, Soldiers conduct gunnery certifications at McGregor Range, N.M., Oct. 14 and 15. (Photograph courtesy of the 11th Air Defense Artillery Brigade)

Finally, readiness-reduced A Battery deployed in July. All batteries were placed on 24-hour standing deployment orders beginning in October 2008. Finally, the battalion returned home as a whole to Fort Bliss in October 2009.

3rd Battalion, 3rd Air Defense Artillery. The Counter-Rocket Artillery and Mortar task force quickly geared up to a state of deployability since being created in August 2008. The provisional unit was created from E Battery, 5-52 ADA, Soldiers, from Fort Bliss, Texas, 4th Bn., 5th ADA, Soldiers from Fort Hood, Texas, and Navy sailors. The unit's Soldiers and sailors conducted various individual training tasks culminating in a series of mission rehearsal exercises. In January, the unit conducted two sense and warn mission readiness exercises and a tactical area command mission readiness exercise with a final set of Joint Intercept Battery exercises. Soldiers and sailors from the task force deployed to Iraq less than one year later, in April. 3-3 ADA is deployed to Iraq.

A Battery, 4th Regiment (Terminal High Altitude Area Defense). A/4 ADA was activated as the Army's first Terminal High Altitude Area Defense battery in May 2008. Since its activation, A/4 ADA has undergone unrelenting tests of the THAAD system in conjunction with Lockheed Martin and Raytheon. The first launcher maintenance demonstrations were held in December and a cold region demonstration exercise conducted in unique training in subzero temperatures. The Soldiers have undergone two Table VIII certifications, conducted in April and October.

A Battery, 2nd Regiment (Terminal High Altitude Area Defense). A/2 ADA is the Army's second THAAD battery and was activated October 16, 2009. The battery will conduct numerous exercises and tests in the upcoming year including a force development exercise and limited user test scheduled for the end of 2009 and the beginning of 2010. There will also be a material release expected between April and June 2010.

Headquarters and Headquarters Battery, 11th Air Defense Artillery Brigade. Members of the brigade's HHB deployed to USCENTCOM from Oct. 2008 through Aug. 2009. The Soldiers provided command and battle staff functions for the U.S. Army Central commander and the Combined Forces Air Component commander. They also maintained command and control over two CONUS battalions and two separate batteries.

In addition to deploying combat forces to the USCENTCOM area of responsibility, the brigade is the air defense artillery branch and U.S. Army Forces Command test battalion for upgrades and future systems such as the Surface-Launched Advanced Medium Range Air-to-Air Missile and THAAD. Overall, the brigade is ready for any mission in support of U.S. allies, equipment developments or the development of new units.

"The Sun Never Sets on the 11th ADA 'Imperial' Brigade." •

31st Air Defense Artillery Brigade – always ready for a challenge

The 31st Air Defense Artillery Brigade was constituted January 1, 1918. The brigade underwent a series of activations and deactivations, reorganizations and numerous deployments and a few recent relocations from Fort Hood and Fort Bliss, Texas. Today, the 31st Air Defense Artillery Brigade is comprised of Headquarters and Headquarter Battery; 3rd Battalion, 2nd Air Defense Artillery; 6th Battalion, 52nd Air Defense Artillery; and 5th Battalion, 5th Air Defense Artillery. The most recent change for the units of 31st Air Defense Artillery is the Base Realignment and Closures move to Fort Sill, Okla., completing the standup of the Fires Center of Excellence.

Since 31st Air Defense Artillery Brigade arrived, it has been busy with training. The brigade began with High-Mobility, Multipurpose Wheeled Vehicle Egress Assistance Training and was the first unit to use the U.S. Army Transportation School developed equipment. 31st Soldiers were trained in the proper procedures for exiting a High-Mobility, Multipurpose Wheeled Vehicle on dry land and in water in a classroom setting. Soldiers strapped into a mock High-Mobility, Multipurpose Wheeled Vehicle and rotated 360 degrees; after the first rotation they were rotated again 180 degrees and were made to exit. They went through a second time, running through the water egress procedures.

The 31st Brigade is always ready for a challenge with the movement of 6th Battalion, 52nd Air Defense Artillery, to Korea. 6-52 Air Defense Artillery Soldiers found their niche within the mission readiness exercise, certifying crews on their equipment. The 31st provided scenarios and opposing forces that challenged its counterpart's defenses, while the rules of engagement were a joint effort. The brigade ensured Soldiers' readiness by conducting yet another training event that was greeted with more than a check-the-block routine. They were the first to utilize the Joint Kill Chain Exercise. The exercise included Fort Sill's

6-52 Air Defense Artillery Battalion and 5-5 Air Defense Artillery Battalion based out of Fort Lewis, Wash.

Another first was the use of the Small Manned Aerial Radar Target, Model 1. Known as the SMART-1, it is the world's smallest manned jet, only 12 feet in size, and was used in the exercise to simulate a cruise missile. The significance to using the Small Manned Aerial Radar Target, Model 1 was it allows all the units to make initial contact with the "missile" and destroy it. In 31st Brigade's previous exercises, the cruise missile was simulated, and the headquarters that ran the scenario had to send data to the individual batteries before they could react. With the successful completion of the Joint Kill Chain Exercise training, 31st Brigade believes that a future execution of this training is suited to involving field artillery.

One of 31st Brigade's own excelled to achieve the dream of making the U.S. Olympic team. 1LT Matthew Petrocci is one step closer as he attended the World Class Athlete Program, where he received top notch training in U.S. Army Track and Field to help compete nationally and internation-

ally while continuing his military career. Petrocciran placed less than a second shy of the U.S. Army Track and Field standard of 1:48.45 for the 800-meter event. He is now training in Colorado Springs, Colo., until the 2012 Summer Olympics.

The brigade has had much to celebrate when they unveiled the plans of the future 31st Air Defense Artillery Brigade complex. The complex will house the brigade headquarters, two battalion headquarters (3-2 Air Defense Artillery and 4-3 Air Defense Artillery in fiscal year 2011), three company headquarters, three tactical equipment maintenance facilities and a dining facility. The brigade gave multiple tours of the \$128 million complex, and BG Robert Woods and MG Peter Vangjel gave their approval, hailed with high praises.

31st Brigade is meeting all its challenges head on. They recently deployed to Al Udeid Airbase to assume the 11th Air Defense Artillery area of responsibility. They assumed command authority for the Central Command air defense brigade headquarters patriot mission from 11th Air Defense Artillery Brigade. ■



SGT Shawn Pelietier of B Battery, 5th Battalion, 5th Air Defense Artillery, makes some adjustments to his Avenger system before his next target comes over the horizon during training at Fort Sill, Okla. in late February. (Photo by Jeff Crawley, the Cannoneer)

Silhouettes of STEEL

32nd Army Air and Missile Defense Command

During the last two years, the 32nd Army Air and Missile Defense Command *Black Jack* has been at the forefront of training Soldiers and testing missile systems to meet the ever-changing enemy forces. Due to this constant enrichment of personnel and war-fighting equipment, it has been praised by key leaders as the Army's premier air and missile defense command.

The 32nd Army Air and Missile Defense Command has participated successfully in numerous combined and joint exercises. Some of these exercises include three rotations of the Weapons and Tactics Instructor Course; five rotations of Virtual Flag; five rotations of joint fleet synthetic training; the Fallon Naval Air Station Exercise in Nevada in May 2008; and the Red Flag Exercise in February.

Black Jack also developed the Air and Missile Defense Joint Kill Chain Exercise Program, which trains Patriot forces with joint command and control agencies and joint air defense systems between eight and 11 times annually. These exercises are conducted either live or virtually.

The 32nd Army Air and Missile Defense Command deployed 11th Air Defense Artillery Brigade, 5-52 Air Defense Artillery Battalion and an element of the 32nd's headquarters to Southwest Asia in support of standing commitments to regional security and stability in 2008. They participated in theater security cooperation events and multilateral exercises, and they recently conducted an in-theater relief in place and transfer of authority with 31st Air Defense Artillery Brigade in August.

This command also has completed major milestones in setting priorities and guiding training plans that enabled the U.S. Forces Command to organize, train and deploy air defense artillery battalions to Korea and Central Command in support of the regional combatant commander's mission needs.

Black Jack is also proud to be the first command to field and train Theater High Altitude Area Defense units. The A/4 Theater



SSG Patricia Culbertson of C Battery, 2nd Battalion, 43rd Air Defense Artillery, unloads rounds downrange during an M-249 semi-automatic weapon qualification range at McGregor Range, N.M., Aug. 12. (Photo by SGT William Bolderson, U.S. Army)

High Altitude Area Defense activated in May 2008, and A/2 Theater High Altitude Area Defense recently activated Oct. 16.

The 32nd Army Air and Missile Defense Command enjoys a superb relationship with coalition partners during events such as the Ground Component Commander Symposium and the Central Command Air and Missile Defense Center of Excellence/European Command Interface.

This command has assumed the training, readiness and authority for all four Forces Command air defense artillery brigades. The 32nd also manages and has oversight of Forces Command's air defense patch chart.

The Army Air and Missile Defense Command has provided guidance and oversight for the air defense forces relocation in accordance with base realignment and closure movements. These relocations included 31st Air Defense Artillery Brigade's headquarters movement from Fort Bliss, Texas, to Fort Sill, Okla.; the 69th Air Defense Artillery Brigade's headquarters from Germany to Fort Hood, Texas; 2-1 Air Defense Artillery's, 4-5 Air Defense Artillery's and 1-44 Air Defense Artillery's movements from Fort Bliss to Fort Hood, Texas; and the 108th Air Defense Artillery Brigade's and 1-7 Air Defense Artillery's movements from Fort Bliss to Fort Bragg, N.C.

While serving as the Forces Command air defense expert, the 32nd has trained, certified and deployed six battalions to Korea, one battalion to Japan, four Patriot battalions, five short-range air defense battalions to support the Counter-Rockets, Artillery and Mortars mission. They also stood up, trained, certified and deployed one Counter-Rockets, Artillery and Mortars task force and one Patriot battalion to conduct a nonstandard detainee operations mission. In other words, whenever and wherever air defense is needed, *Black Jack* Soldiers and war-fighting equipment are ready. ■



A Counter-Rockets, -Artillery and -Mortars crew, assigned to 32nd Army Air and Missile Defense Command, test fires. (Photograph courtesy of the 32nd Army Air and Missile Defense Command)

The 35th Air and Missile Defense: ready in defense

Since 1994 and the first Korean nuclear crisis, U.S. Army Patriot has been providing joint theater missile defense for Combined Forces Command critical assets in the Republic of Korea. Throughout the years, the Patriot force in the Republic of Korea grew from one to two battalions, and in 2004, the 35th Brigade Headquarters re-stationed from Fort Bliss, Texas, to Osan Air Base. The Patriot battalions in the Republic of Korea continue to provide an active missile defense against the vast North Korean ballistic missile threat, and these forces maintain the highest readiness levels of forces on the Korean peninsula.

The past two years have been full of numerous missions and achievements for the Soldiers of the 35th Air Defense Artillery Brigade. The brigade transitioned from battalion temporary change of station deployments to battalion permanent change of station rotations, forward stationed two battalions to Korea and participated in four combined forces training exercises, Operations Ulchi Focus Lens/Ulchi Freedom Guardian and Key Resolve. It also conducted numerous non-combatant evacuation and base readiness exercises, and a brigade change of command. Throughout all operations and training the 35th Brigade maintains three priorities — fight tonight, alliance building and tour normalization.

Fight tonight. The constant threat posed by North Korea requires the brigade to maintain the highest possible level of operational readiness. North Korea has the largest inventory of tactical ballistic missiles in the world, and the constant antagonistic behavior requires forces on the Republic of Korea to be able to “fight tonight.” Along with the daily mission requirements such as crew certifications, preventive maintenance, and administrative functions, the air defenders of the 35th Air Defense Artillery Brigade stand ready to address any North Korean missile launch. Monthly joint kill chain exercises with the Combined Air Component Command ensure the Patriot fire units across the peninsula are ready at a moment’s notice.

Rotations and forward stationing. 35th Air Defense Brigade is comprised of two Patriot battalions, one at Camp

Carroll in the southern portion of the Korean peninsula and an air missile defense battalion at Suwon, Osan and U.S. Army Garrison-Casey in the northern portion of the peninsula. The brigade headquarters is located on Osan Air Base. During the past year the *Dragon* Brigade executed two final battalion rotations and forward stationing of two Patriot battalions to Korea — 6th Battalion, 52nd Air and Missile Defense, and 2nd Battalion, 1st Air Defense Artillery. Six Patriot battalions have rotated in and out of the Korean theater of operations during the past two and a half years. This equates to more than 4,500 Soldiers in and out processed, 3,400 awards presented, 420 crew certifications completed and 36 battery-level inventories executed with no loss of mission readiness or combat capability during the transition periods. Furthermore, E Battery, 1st Battalion, 43rd Air Defense Artillery, at USAG-Casey was reflagged to E Battery, 6th Battalion, 52nd Air Missile

“Throughout all operations and training the 35th Brigade maintains three priorities — fight tonight, alliance building and tour normalization.”

Defense, complementing the capability as an air missile defense battalion.

Tour normalization. During the past year, the 35th Air Defense Artillery Brigade served as the vanguard for the U.S. Forces Korea “tour normalization” initiative with the command sponsorship of 140 *Dragon* Brigade families throughout the Korean peninsula. As the U.S. Department of Defense attempts to make Korea the assignment of choice, battalion command teams of the 35th Brigade continue to integrate families in the Republic of Korea. Simultaneous to the many transformational activities within the Armed Forces, skilled leaders take action to ensure Army families are cared for regardless of whether they live on an Army post, Air Force base or on the Korean economy.

Maintaining the alliance. While maintaining unit-level training and equipment readiness, the 35th Air Defense Artillery Brigade trained the Republic of Korea Patriot forces as part of a combined joint theater air and missile defense team.

In 2008, the Republic of Korea Air Force began fielding eight Patriot batteries with the mission of defeating the North Korean air breathing threat and tactical ballistic missile threat. To help develop a combined mission readiness, 35th Brigade units developed several training initiatives to ensure U.S. and Republic of Korea forces can fight as a combined team. Additionally, each battalion formed a training and cultural sharing relationship with local Republic of Korea Army and Air Force units to strengthen the alliance and provide and greater cultural experience for the *Dragon* Brigade Soldiers.

Community relations. Just as any other military organization, the 35th Brigade fostered relations with the local communities at every opportunity. All *Dragon* Soldiers understand how vital it is to be a good ambassador of the U.S.; they are also cognizant of how important it is to get involved with the community. Each battalion and HHB/35th sponsor orphanages, support people-to-people events, participate in the annual Pyeongtaek marathon. And several Soldiers from the brigade are members of a Korean adult baseball league. These activities maximize the Korean experience.

Dragon Brigade events and accomplishments. Along with mission oriented events, the *Dragon* Brigade has been engaged in a number of off-duty events during the past two years. The brigade has sponsored two peninsula-wide combatives tournaments with the top active duty mixed martial arts fighters in Korea and Japan, participating in the tournament with competitors, male and female, from the brigade doing well in all weight classes. Additionally, Soldiers from the brigade have excelled in several Korea-wide running events and were selected for the eighth U.S. Army 10-Miler Team, where they placed well.

Lastly, Soldiers from the brigade competed in the eighth Army NCO of the Year, Soldier of the Year and Korean Augmentees to the U.S. Army of the Year competition with exceptional results. *Dragon* Brigade earned the titles of Soldier of the Year for two consecutive years and the Korean Augmentees to the U.S. Army of the Year for 2008. One Soldier earned second place in the 2009 All Army Warrior Competition. ■

Silhouettes of STEEL

94th Army Air and Missile Defense Command

Located in the heart of Honolulu at Fort Shafter, Hawaii, one of the most technologically advanced, well-trained and best equipped missile defense units in the world, the headquarters element of the 94th Army Air and Missile Defense *Sea Dragons* Command stands ready to deter or defeat any adversary's missile attack on U.S. or allied soil in the Pacific theater.

With threats increasing significantly due to the proliferation of missile technology, the 94th Army Air and Missile Defense Command has proven vital to the entire Asia-Pacific region. Consisting of three different subordinate units: Headquarters and Headquarters Battery, 94th Army Air and Missile Defense Command; 1st Battalion, 1st Air Defense Artillery; and 3rd Detachment, 1st Space Brigade.

The 94th Army Air and Missile Defense Command's mission is to strategically deploy combat ready air defense units and personnel in the U.S. Pacific Command's area of responsibility. In support of the combatant commander's contingency operations, it will conduct joint and combined theater air and missile defense planning, coordination, integration and execution.

1st Battalion, 1st Air Defense Artillery (Patriot PAC-3) *Snake Eyes* Battalion joined the 94th Army Air and Missile Defense Command Aug. 16, 2006, when it transferred from the 31st Air Defense Artillery Brigade at Fort Bliss, Texas. Relocated to Kadena Air Base, Okinawa, Japan, the *Snake Eyes* provide air and missile defense to critical assets located on Okinawa.

The battalion's presence enhances the security of Japan and deters regional powers from the use of tactical ballistic missiles that threaten the peace and security of the Pacific region. Under the command of the 94th Army Air and Missile Defense Command, located more than 6,000 miles away at Fort Shafter, Hawaii, the *Snake Eyes* receive administrative support from the 10th Support Group located on Torii Station, Okinawa and operational assistance from the 18th Wing on Kadena Airbase, Japan.

With the command post located less than 10 miles from the site where U.S. forces landed on April 1, 1945 beginning the Battle of Okinawa, 1-1 ADA is truly in a joint basing situation. Across the spectrum of medical, administrative, logistics and training activities the *Snake Eyes* are in a partnership with every branch of service, as well as a partnership with the Japanese Self Defense Forces.

Travel north from the city of Aomori, Japan, until you reach the northern edge of the island of Honshu and you'll find Shariki, Japan, home to the 94th Army Air and Missile Defense Command's AN/TPY-2 Radar, and the premier advanced warning system in the Pacific.

Three Soldiers and 102 civilian contractors is all it takes to run the site of the first radar to detect a North Korean missile launch on the United States. The AN/TPY-2 Radar, located in remote Shariki, Japan, is an advanced warning, land-based X-Band Radar capable of detecting a ballistic missile threat seconds after launch. This radar is an Army Space asset but falls under the command and control of the 94th Army Air and Missile Defense at Fort Shafter, Hawaii.

In the spring of 2006 the AN/TPY-2 was brought to Japan and was stood up on the first military installation to open in Japan since World War II. The site is the size of five football fields and was chosen for its strategic location on the shore of the Sea of Japan adjacent to a Japanese Air Self Defense Base. Since the radar was operational in Japan within months of site selection, the initial location was very basic consisting of a grass field surrounded by a fence. Housing for site personnel did not even come to fruition until many months after the radar became operational. Since these humble beginnings, many additions have been made and many obstacles overcome to ensure the mission was never disrupted while constructing facilities that allow site personnel to live and work efficiently in Shariki.

One aspect of the opening of this radar site that has been given a great deal of emphasis over the years is the relationship between the people of the Shariki and the American Soldiers and contractors working there.

Since inception, the AN/TPY-2 Radar has played a vital role in the tracking of several real-world adversary missile launches. Its capability multiplies the effectiveness of the Command, Control, Battle Management and Communications System adding valuable seconds to the decision making process between the time a ballistic missile is launched and when it is intercepted. Currently, the site is controlled by the Army while the radar operations are primarily the responsibility of civilian contractors, but 94th Army Air and Missile Defense Command is making constant strides to ensure that the Army is ready assume full control over the entire operation by 2014.

The 94th Army Air and Missile Defense Command is responsible for the missile defense of almost half of the earth's surface; an area of over 105-million square miles of territory, the 94th Army Air and Missile Defense Command's area of responsibility contains six of the world's largest armies and 60 percent of the world's population. On top of that, five of the seven countries that have signed the mutual defense treaties with the U.S. are in the Pacific region: Australia, Philippines, South Korea, Japan and Thailand.

While maintaining a solid footprint in theater and to mark some of its work, the 94th Army Air and Missile Defense Command has been credited with enhancing the security of the U.S. and Japan by providing reliable defense assets and deterrents in the region. And the work doesn't stop at the bounds of the 94th's area of responsibility. Over the past five years, the 94th Army Air and Missile Defense Command has trained, equipped and deployed more than 300 Soldiers in support of overseas contingency operations.

Missile defense could be the greatest threat in the Pacific region today. The *Sea Dragons* stands ready to defeat any adversary's missile attack on U.S. or allied soil in the Pacific theater. ■

108th Air Defense Artillery Brigade – “Spartans”

Headquarters, 108th Air Defense Artillery Brigade. Headquarters, 108th Air Defense Artillery Brigade, Fort Bragg, N. C., moved from Fort Bliss, Texas, in the summer of 2007 as part of a Base Realignment Commission initiative. During the past two years, the brigade has deployed more than 1,800 Soldiers in support of Operations Iraqi Freedom and Enduring Freedom, as well as more than 600 Soldiers on a year-long unit rotation to the Republic of South Korea.

3rd Battalion, 4th Air Defense Artillery Regiment. *Skystrikers* (Patriot/Avenger) had seven batteries deployed in support of Operation Iraqi Freedom during the past two years, with missions ranging from traditional air defense to nonstandard operations. These missions included Counter-Rocket, Artillery and Mortar, early warning, convoy security, and detainee operations. In September, the *Skystrikers* reorganized into a composite Patriot Advanced Capabilities 3, Patriot/Avenger battalion and soon will begin new equipment training on recently received Patriot systems. The battalion's E Battery *Executioners* remains the U.S. Army's only air defense forced entry capable unit and supports the 82nd Airborne Division.

1st Battalion, 7th Air Defense Artillery. *No Fear* battalion (Patriot) completed a one year rotation to the Republic of Korea in July 2008. After its redeployment to Fort Bliss, 1-7 Air Defense Artillery re-stationed to Fort Bragg and immediately began training for its next deployment. The *No Fear* battalion deployed to the Central Command theater in October, in support of Operation Enduring Freedom and is providing air and missile defense to critical theater assets, as well as conducting theater security cooperation activities with Gulf Coalition Counsel partners.

2nd Battalion, 44th Air Defense Artillery. *Strike Fear* (Avenger) resides at Fort Campbell, Ky. The *Strike Fear* battalion deployed to Iraq in 2008 and conducted Counter-Rocket, Artillery and Mortar; Sense and Warn; and Joint Intercept Battery operations in defense of numerous base clusters and forward operating bases. Upon its redeployment in 2009, the battalion reorganized back into its modified table of organization and equipment maneuver air and missile defense structure and began training core air defense mission essential tasks. ■



CSM Richard Clem (center) out in the field with his fellow Soldiers of the 108th Air Defense Artillery Brigade Headquarters and Headquarters Battery. (Photograph courtesy of 108th Air Defense Artillery Brigade)



3rd Battalion, 4th Air Defense Artillery Regiment, Soldiers in Iraq. (Photograph courtesy of 108th Air Defense Artillery Brigade)

Silhouettes of STEEL

1st Infantry Division

1st Battalion, 5th Field Artillery (Paladin). Given its continuous service as an artillery battalion since 1776, the 1st Battalion, 5th Field Artillery, is steeped in long tradition. From serving in the Revolutionary War under Alexander Hamilton, to the first Copperhead kill of an Iraqi tank during Operation Desert Storm, *Hamilton's Own* has served in nearly every major U.S. conflict, earning 63 campaign streamers and numerous citations for gallantry in battle. Like many Army units today, the *Destroyers* continue to set standards for America's army in an ever-changing contemporary operating environment. In recent years, 1-5 Field Artillery has served faithfully in support of War on Terrorism. After a successful deployment in September 2004, supporting Operation Iraqi Freedom, 1-5 Field Artillery returned to Fort Riley, Kan. In August 2006, 1st Brigade of the 1st Infantry Division was assigned the mission of transition team trainers, for the Army's



highest priority mission, advising foreign security forces.

No stranger to executing nonstandard missions, the *Destroyers* exemplified the characteristic flexibility of artillerymen and began training the Army's transition teams in the fall of 2006. 1-5 Field Artillery trained transition teams consisting of Soldiers, sailors and airmen from across the U.S. and outside of the continental U.S. for combat operations in Iraq and Afghanistan.

1-5 Field Artillery employed its knowledge as subject matter experts in preliminary marksmanship instruction, basic and advanced fire support techniques to train 306 teams, totaling more than 3,000 personnel. 1-5 Field Artillery averaged a daily expenditure of more than 13,800 rounds during the course of this training.

Regular communications with forward deployed teams and after action reviews from teams returning from combat operations abroad kept the training current and relevant. Instructors certified in the Joint Firepower Course and the Joint Fires Observer Course provided quality training to training teams based on the Army's most recent developments in fire support technology and tactics, techniques, and procedures. Relentless commitment to training Soldiers for war earned the *Destroyers* numerous accolades and awards while serving as fire support mentors. In addition to training transition teams, 1-5 Field Artillery maintained the 1st Infantry Division's Salute Battery and the high-profile use of "Old Thunder," a replica six-pound field piece from the Revolutionary War. The need for additional combat brigades to support the overseas contingency operations resulted in the redesignation of 1st Brigade, 1st Infantry Division, as a heavy brigade combat team Sept. 16. The *Destroyers* began the process of building into a Fires battalion supporting 1st HBCT, 1st Infantry Division. With fielding initiatives set throughout the fall 2009 and spring of 2010, the former transition team training battalion occupied their old stomping grounds on Custer Hill, Fort Riley, Kan.

1st Battalion, 6th Field Artillery (M119A2). The 1-6 Field Artillery *Centaur*s provided fires in support of the 3rd Brigade 1st Infantry Division, *Dukes* during its recent deployment to Operation Iraqi Freedom IX, from July 2008 until June 2009. The battalion provided fire support from nine different forward operating bases throughout Regional Command East/North. Using three different cannon systems, the M119A2, the M198 and the M777 howitzers, the battalion fired more than 43,000 rounds in support of American and Afghani troops.

1st Battalion, 7th Field Artillery (Paladin). The *First Lightning* battalion relocated from Schweinfurt, Germany, to Fort Riley in 2008, uncasing the unit colors on March 16, 2008 as part of the 2nd Heavy Brigade Combat Team *Daggers* of the

Artillerymen with the 2nd Battalion, 32nd Field Artillery Regiment, train on call for fire at Fort Riley, Kan. (Photo by Anna Staatz, *Duty First Magazine*)



Silhouettes of STEEL

17th Fires Brigade

The 17th Fires Brigade relocated from Fort Sill, Okla., to Fort Lewis, Wash., during 2007. Preparations began at Fort Sill early in the year and culminated in the unfurling of the 17th Brigade colors on August 10, 2007. Additionally, 1st Battalion, 377th Field Artillery (Air Assault), moved from Fort Bragg, N.C. to Fort Lewis, Wash., on July 16, 2007. They were followed by the 308th Support Battalion, which was activated on July 17. On that same day, the 5th Battalion, 3rd Field Artillery, moved from Fort Sill to Fort Lewis.

The main bodies of these organizations began arriving at Fort Lewis in early July 2007. They began occupation of the planned brigade area, as well as regular operations on July 9, 2007. The first task the brigade completed was the unfurling of its colors on Aug. 10, 2007.

During fiscal year 2008, 17th Fires Brigade generated the 256th Signal Company and received the 1st Battalion, 94th Field Artillery, from Germany. From

fiscal year 2008 to July 2009, the brigade executed a series of tactical operations center exercises and field problems culminating in a mission readiness exercise with 34th Infantry Division in March in preparation for deploying to Iraq. The brigade forward deployed to Basra, Iraq, in July for a 12-month deployment. The brigade is operating as a ground maneuver force replacing an infantry brigade.

Trainning management. The 1st Battalion, 377th Field Artillery (Air Assault), *Gunslingers*, veterans of two in-lieu-of missions in support of Operation Iraqi Freedom, relocated from Fort Bragg to Fort Lewis in May 2007, and immediately began building combat power (manning and equipping), establishing systems (training and sustainment), and developing adaptive leaders and Soldiers in support of the Army Campaign Plan. Initially focused on leader certification and gunners' testing, the battalion rapidly integrated new Soldiers and equipment and, by the fall of 2007,

began training to provide cannon fires and conduct air assault operations.

By spring of 2008, the battalion completed calibration, certification and live fire of all sections and demonstrated its capabilities as the Army's only air assault designated M198 battalion. Demonstrating its agility, the battalion planned, coordinated and led Fort Lewis' execution of the 2008 Reserve Officer Training Corps Warrior Forge summer camp — an event involving more than 5,000 cadets.

Following a brief return to its artillery and air assault mission-set section certifications at Yakima Training Center in September 2008, the battalion reorganized into a motorized infantry battalion, prepared to conduct full-spectrum operations in Iraq. In July, it deployed to Basra, Iraq, where, as the 17th Fires Brigade's only maneuver battalion, it conducts combat operations and mobility/security support to the provincial reconstruction team and 10 transition teams through July 2010.

5th Battalion, 3rd Field Artillery, conducted a live-fire exercise, firing the first High-Mobility Artillery Rocket System rockets from a Fort Lewis, Wash., unit at Yakima Training Center, Wash., in Oct. 2007. (Photo by Jason Kaye, *The Northwest Guardian*)

5th Battalion, 3rd Field Artillery. *First Round* moved from Fort Sill to Fort Lewis at 10-percent strength, following two back-to-back in-lieu-of missions in support of Operation Iraqi Freedom. Upon arriving at Fort Lewis, the focus on training was at the individual and section levels. As a part of the 17th Fires Brigade transition, the 5th Battalion, 3rd Field Artillery, was converted from the M270A1 Multiple-Launch Rocket System to the M142 High-Mobility Artillery Rocket System unit, receiving its first platoon set of new systems in September 2007. That October, 5-3 Field Artillery conducted a live-fire exercise, firing the first High-Mobility Artillery Rocket System rockets from a Fort Lewis unit at Yakima Training Center.

In May 2008, the battalion conducted initial operational testing for the Guided Multiple-Launch Rocket System munitions at White Sands Missile Range, N.M. In September 2008, the battalion completed the remaining High-Mobility Artillery Rocket System fielding with training focused on maintenance, employment and tactics, and culminated in section live-fire certification. From November 2008 to September 2009, 5-3 Field Artillery has been training for deployment to the Central Command area of responsibility in Afghanistan in support of counter-improvised explosive device route-clearance operations. Training has covered a broad spectrum of mission sets from detainee operations in Iraq to High-Mobility Artillery Rocket System and security force operations.

1st Battalion, 94th Field Artillery. *Deep Steel* was ordered to inactivate and cast its colors as the last divisional command and attack Multiple-Launch Rocket System battalion in Europe and the Army. The 1-94 Field Artillery unfurled its colors at Fort Lewis on August 15, 2008. By mid-summer, *Deep Steel* approached 50 percent strength and initiated its training programs to be mission capable by its October 16, 2008 activation date.

The battalion then prepared for the scheduled High-Mobility Artillery Rocket System fielding in fiscal year 2009. From November 2008 to April 2009, the battalion conducted the High-Mobility Artillery Rocket System fielding with training focused on maintenance, employment and tactics, and culminated in section live fire.

A High-Mobility Artillery Rocket System at Yakima Training Center, Wash. (Photo by Jason Kaye, *The Northwest Guardian*)

Deep Steel recently executed the 2009 Reserve Officer Training Corps Warrior Forge summer camp. The battalion planned, prepared and controlled the logistics support and training of more than 5,000 cadets. Upon completion, the battalion assumed the reins of the brigade rear detachment and began retraining for its artillery mission.

308th Brigade Support Battalion. The 308th Brigade Support Battalion activated during fiscal year 2008 as part of the 17th Fires Brigade's transformation. The focus on training was at the individual and section levels to establish military occupational specialty proficiency. The 308th Brigade Support Battalion focused its training effort on establishing initial operations and preparing for the influx of personnel and equipment that would arrive throughout the year. It conducted an aggressive training program as part of the brigade commander's tactical operations center operations during Exercise Yama Sakura.

The battalion also provided logistical support for several artillery battalion live-fire exercises at both the Yakima Training Center and Fort Lewis. It also provided maintenance and logistics support to the 1-94 Field Artillery during its integration into the 17th Fires Brigade.

The 308th BSB earned awards in the Department of the Army's Army Award for Maintenance Excellence and Supply Excellence Award programs. In the spring of 2009, the battalion began training

on logistics operations culminating in a battalion field training exercise at multiple locations. The 308th Brigade Support Battalion deployed in support of the 17th Fires Brigade deployment to Basra, Iraq in July.

F Battery, 26th Field Artillery. F Battery, 26th Field Artillery, added to its lineage as it unfurled its guidon on August 10, 2007, as a target acquisition battery underneath the 17th Fires Brigade colors. Consisting of two Q-37(v)8 FireFinder Radars sections, meteorological section, survey section and target processing section, F/26th Field Artillery provides the *Thunderbolt* Brigade with weapons locating, meteorological and survey capabilities.

Despite being a generating unit, the *Wolfpack* Battery quickly integrated itself into brigade operations augmenting the brigade counterfire cell during Yama Sakura 53 in December 2007, and Operation Key Resolve in March 2008. The battery became fully operational and supported both 5-3 Field Artillery and 1-377 Field Artillery live fires. In January, F/26th FA transitioned to its in-lieu-of mission as a Sentinel Radar battery. *Wolfpack* deployed to Iraq in February, and provides support to the Multi-National Corps-Iraq area of responsibility.

During fiscal year 2008, 17th Fires Brigade generated the 256th Network Support Company, which later deployed to Iraq in July, providing command and control support to the brigade. ■



Silhouettes of STEEL

18th Fires Brigade (Airborne)



Headquarters and Headquarters Battery. After redeployment in 2007, HHB, Fort Bragg, N.C., began its transformation into 18th Fires Brigade (Airborne). Following reset, HHB conducted mandatory training requirements and standard garrison operations and fielding new positions and equipment to meet transformation guidelines. As 2008 began, HHB/18th Fires Brigade continued to train in accordance with its new mission as the Army's only airborne Fires brigade. On July 16, 2008 the unit fell under 82nd Airborne Division for training and readiness.

The battery supported the War on Terrorism throughout the year, training four Q36 Radar sections and one Q37 section for deployment to Operation Enduring Freedom. HHB also augmented 2nd Brigade Combat Team with observer/controller support throughout its mission readiness validation/exercise. Finally, the battery was tasked with a 15-month deployment mission of its own, and successfully trained and deployed a 40-man fires element on 15 month mission, starting May 2008. HHB performed missions that ranged from manning a fire control element at 4th Infantry Division headquarters to compiling an Iraqi security forces cell that worked as an assessment team for congress to evaluate progress in the war. Lastly, some of the unit was detached to the Baghdad Operations Command Advisory Team where it functioned as a corps-level military transition team between the commanding Iraqi general in the city and corps headquarters.

HHB/18th Fires Brigade (Airborne) began 2009 continuing to build the unit as a Fires brigade. HHB continued to support the brigade in its wartime mission. The battery supported 2nd Brigade Combat Team, from Fort Carson, Colo., on a number of joint fire exercises and conducted Operation Gunsmoke, a brigade-level field training exercise. In June, the battery participated in a series of change of command ceremonies. In August, the battery's 35-man forward element returned from Operation Iraqi Freedom and began reset. As of September, HHB/18th Fires Brigade completed its transition of command teams and continued to train to support the 82nd Airborne Division or combined joint task force headquarters in full-spectrum operations.

3rd Battalion, 27th Field Artillery (HIMARS). During the past two years, 3rd Battalion, 27th Field Artillery, (High-Mobility Artillery Rocket System) has continued to support the battalion's deployments, sustainment and redeployment cycle.

While transforming into a modular High-Mobility Artillery Rocket System battalion with a self-sustaining precision fire and target acquisition capability, *Steel Rain* maintained the joint deployment mission it began in 2006. Rotating batteries on six month deployments, the battalion has conducted six deployment and redeployment cycles in support of Operation Enduring Freedom successfully to date.

Between deployments, batteries participated in various joint exercises, multiple mission readiness exercises and field training exercises in preparation for the battalion's ongoing mission. B and C Batteries are deployed in support of the ongoing joint mission and are conducting a relief in place/transfer of authority in preparation for B Battery's redeployment.

Steel Rain maintains the capability to employ and deliver accurate fires with the successful delivery of Guided Multiple-Launch Rocket System rockets and Army Tactical Missile System missiles. Since 2007, the battalion has shot more than 50 rockets and 20 missiles. It also has participated in several test missions at White Sands Missile Range, N.M., maintaining its relationship with forces at Redstone

Arsenal, Ala. while continuing technological advancement within the High-Mobility Artillery Rocket System community.

In June, the battalion was tapped for a global response force mission in coordination with 2nd Brigade Combat Team, 82nd Airborne Division. The 3rd Platoon, A Battery is the global response force platoon for the battalion, which can strategically deploy within 96 hours of notification.

1st Battalion, 321st Field Artillery. Gearing up to head back to Iraq, 1st Battalion, 321st Field Artillery, trained on convoy live-fire ranges and close quarters combat training. Just weeks before boarding a plane at Pope Air Force Base, the battalion received word its mission had changed from a maneuver unit in Iraq to that of a field artillery unit in Afghanistan.

With the new mission, the 1st Battalion, 321st Airborne Field Artillery Regiment, went back to its roots and trained as an airborne field artillery unit after nearly three years of performing and preparing for nonstandard missions. With rounds going down range safely and accurately there was only one task untrained, a "heavy drop." On April 9, 2008, B Battery conducted the battalion's first airborne operation with the M198 howitzer in more than three years. During the next 10 months the battalion conducted 28 M198 drop zone missions, living up to 1-321st Field Artillery's motto as "The Only Airborne 155-mm Battalion in the World." C Battery, 1st Battalion, 321st Airborne Field Artillery Regiment, conducted the last heavy drop with an M198 howitzer on Sept. 11, 2008.

The M777A2 howitzer is the U.S. Army's newest howitzer, and 1-321st Field Artillery was set to field it. The battalion traded in its M198 howitzers for the new M777A2 howitzers. The firing batteries were instructed by a team of civilians and artillerymen from Fort Sill, Okla., on how to emplace, repair and fire the new howitzer system, providing timely, accurate and deadly indirect fires. Simultaneously, A Battery finalized training on the Q-36 and Q-37 Radars for its mission as a radar battery.

1st Battalion, 321st Airborne Field Artillery Regiment, deployed to Afghanistan between December 2008 and January 2009, in August 2009 as the first field artillery general support battalion headquarters in Afghanistan. The *Warriors* shot more than 8,000 rounds in support of maneuver forces to include 15 Excalibur missions.

It was determined the country still required an airborne 155-mm field artillery capability. On May 26, 2009, D Battery, 1st Battalion, 321st Airborne Field Artillery Regiment, was activated, given provisional status and hit the street running. By June 26, the battery had conducted its first airborne operation with the M777A2 assumed the global response force mission.

The *Warriors* are deployed as part of Combined Joint Task Force-82, providing devastating and lethal indirect fires in support of maneuver forces throughout Regional Command (East) in Afghanistan.

3rd Battalion, 321st Field Artillery. 3rd Battalion, 321st Field Artillery, was the first active duty Army unit to field the new M777A2 howitzer in June 2007. The battalion trained and certified all cannoners on the new weapon while developing and validating new training concepts such as the first low-velocity airdrop and the first sling load with a V-22 Osprey or CH-53E Super Stallion with an M777A2 by Army units. The battalion also stood up the 583rd Forward Support Company to provide ammunition, fuel and maintenance support for the new howitzers.

In December 2007, A and C Batteries deployed to Afghanistan.

A paratrooper of B Battery, 1st Battalion, 321st Airborne Field Artillery Regiment, supporting troops in contact engages anti-coalition forces with low-angle artillery fires with a M777A2 howitzer from Forward Operating Base Salerno, Afghanistan. (Photograph courtesy of 1st Battalion, 321st Field Artillery Regiment Airborne, 18th Fires Brigade)



Headquarters and Headquarters Battery, 18th Fires Brigade (Airborne), forward observers are essential in calling in howitzer fire during an air assault mission on Fort Bragg, N.C. (Photo by SSG Natasha Schroedel, U.S. Army)

During their 15-month deployments, the batteries were broken down into platoons and occupied separate forward operating bases within remote areas of Afghanistan. The two batteries, combined, fired more than 20,000 artillery rounds in combat in support of maneuver forces, including Excalibur. B Battery remained at Fort Bragg and assumed the global response force mission.

In February, A and C Batteries, redeployed to Fort Bragg and began reset. Both batteries completed their intensive reset and draw from left behind equipment stocks of howitzers, night vision goggles, radios, vehicles and small arms. All equipment was reset within the time standards prescribed by Forces Command.

The 583rd Forward Support Company was tasked to retrain mechanics and other support personnel as radar operators. The 583rd recently sent Soldiers to Fort Sill, Okla., to train side by side with Military Occupational Specialty 13R Field Artillery Firefinder Radar Operators and 131A Targeting Warrant Officers. Upon completion of 13R training, they trained alongside the 18th Fires Brigade target acquisition battery on the light-weight countermortar radar. The 583rd departed in November to Afghanistan.

In August, the battalion received an attachment of a fourth firing battery, D Battery, 26th Field Artillery. D Battery was activated by 1st Battalion, 321st Airborne Field Artillery Regiment, to augment 3rd Battalion, 321st Field Artillery, for the January 2010 deployment to Afghanistan. Throughout fall, the battalion fired hundreds of artillery rounds to certify 24 howitzer and eight fire direction center sections. Thousands of small arms rounds of all calibers were fired to qualify all Soldiers on their individual and crew-served weapons.

D Battery, 26th Field Artillery (Target Acquisition). In June of 2007, 234th Field Artillery Detachment, a unit of 3rd Battalion,

27th Field Artillery Regiment (HIMARS), was reconstituted as D Battery, 26th Field Artillery, and received notice it would deploy, providing radar support in support of Operation Enduring Freedom. The battery analyzed its mission and realized the mission required additional Soldiers. The battery acquired an additional 20 Soldiers of varying military occupational specialties from 3rd Battalion, 27th Field Artillery. With personnel in place, the battery sent non-radar MOS Soldiers to Fort Sill, Okla., and trained and certified sections, preparing to deploy. In November of 2007, the decision was made to transfer ownership of D Battery from 3rd Battalion, 27th Field Artillery, to the 18th Fires Brigade (Airborne).

The battery refined its skills as a target acquisition battery until it deployed in January of 2008. Once in theater, the battery operated three Firefinder Radar AN-TPQ 36 systems and one Firefinder Artillery Locating Radar AN-TPQ 37 system in support of a myriad of forces within Regional Command (East) in Afghanistan and provided maintenance and training support for 42 Lightweight Countermortar Radar Systems and six Unmanned Transient Masint Systems within theater. D Battery also provided six Soldiers to 3rd Battalion, 321st Field Artillery, in support of the maneuver mission at the Mando Zayi District Center in Khowst, Afghanistan. D Battery tracked 1,143 hostile enemy rounds, resulting in lethal counterfires. The battery redeployed in January.

Since redeployment, the battery continues to provide meteorological, target acquisition and survey support to the 18th Fires Brigade and its three field artillery battalions. The battery is set to deploy to Afghanistan once again in the fall of 2010. ■

2008-2009 photo review: Our journey forward



March-April 2008
GEN Ray Odierno talks with shoppers at Baghdad's Shorja Market. The general spent the day touring markets and combat outposts around Baghdad. (Photo by SSG Curt Cashour, Joint Combat Camera Center)

May-June 2008

A Bulgarian soldier helps SPC Zachary Baker of 1st Battalion, 94th Field Artillery, load a Bulgarian machine gun at the Novo Selo Training Area, Bulgaria. (Photo by PFC Crystal Abbott, U.S. Army)



July-Sept. 2008
CPT Rimas A. Radzius, 3rd Battalion, 320th Field Artillery, 3rd Brigade Combat Team, 101st Airborne Division (Air Assault), watches from an overpass as Shia pilgrims observe Arba'een in Mahmudiyah, Iraq. (Photo by 1LT Michael T. Denison, Multi-national Division, Central)

Oct.-Dec. 2008

Soldiers from A Battery, 2nd Battalion, 320th Field Artillery Regiment, 1st Brigade Combat Team, 101st Airborne Division (Air Assault), fire a round from their M119A2 howitzer during Operation Fulton Harvest in the Al-Jazeera Desert, Iraq. (Photo by 1LT Jonathan J. Springer, U.S. Army)



Jan.-Feb. 2009
An air defense Soldier stands vigilant. A Patriot system is shown in the background. (Photograph courtesy of Office, Chief of Air Defense Artillery)

July-Aug. 2009

Members of the Sons of Iraq push their way into the check-in window at their headquarters in Multaka, Iraq, to register for their monthly salaries. (Photo by PO2 Brian Short, U.S. Navy)



Sept.-Oct. 2009
MG David D. Halverson receives the Fires Center of Excellence colors from GEN Martin E. Dempsey, Training and Doctrine Command commanding general, replacing MG Peter Vangjel as the Fires Center of Excellence commanding general, Aug. 26. (Photo by Monica Woods, the Cannoneer)

Red Book 2009 Special section

2008-2009 photo history
A look back at our journey forward

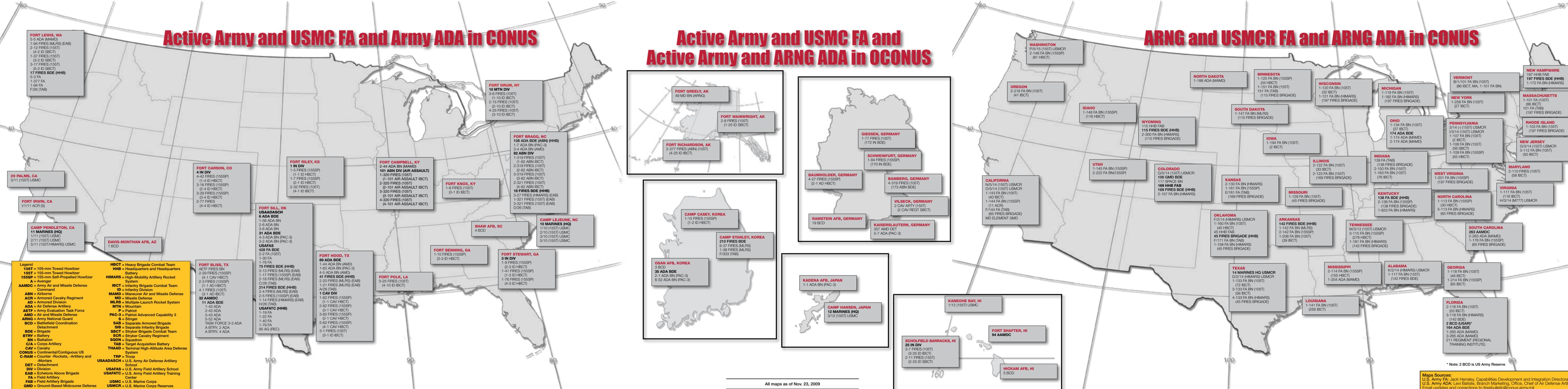


Maps of
air defense artillery
and field artillery units

Active Army and USMC FA and Army ADA in CONUS

Active Army and USMC FA and Army ADA in OCONUS

ARNG and USMCR FA and ARNG ADA in CONUS



- Legend**
- 105T** = 105-mm Towed Howitzer
 - 155T** = 155-mm Towed Howitzer
 - 155SP** = 155-mm Self-Propelled Howitzer
 - A** = Avenger
 - AAMDC** = Army Air and Missile Defense Command
 - ABN** = Airborne
 - ACR** = Armored Cavalry Regiment
 - AD** = Armored Division
 - ADA** = Air Defense Artillery
 - AETF** = Army Evaluation Task Force
 - AMD** = Air and Missile Defense
 - ARNG** = Army National Guard
 - BCD** = Battlefield Coordination Detachment
 - BDE** = Brigade
 - BTRY** = Battery
 - BN** = Battalion
 - CA** = Corps Artillery
 - CAV** = Cavalry
 - CONUS** = Continental/Contiguous US
 - C-RAM** = Counter-Rockets, -Artillery and -Mortars
 - DET** = Detachment
 - DIV** = Division
 - EAB** = Echelons Above Brigade
 - FA** = Field Artillery
 - FAB** = Field Artillery Brigade
 - GMD** = Ground-Based Midcourse Defense
 - HBCT** = Heavy Brigade Combat Team
 - HQB** = Headquarters and Headquarters Battery
 - HIMARS** = High-Mobility Artillery Rocket System
 - IBCT** = Infantry Brigade Combat Team
 - ID** = Infantry Division
 - MAMD** = Maneuver Air and Missile Defense
 - MD** = Missile Defense
 - MLRS** = Multiple-Launch Rocket System
 - MTN** = Mountain
 - P** = Patriot
 - PAC-3** = Patriot Advanced Capability 3
 - S** = Slinger
 - SAB** = Separate Armored Brigade
 - SIB** = Separate Infantry Brigade
 - SBCT** = Stryker Brigade Combat Team
 - SCR** = Stryker Cavalry Regiment
 - SQDN** = Squadron
 - THAAD** = Terminal High-Altitude Area Defense System
 - TRP** = Troop
 - USAADASCH** = U.S. Army Air Defense Artillery School
 - USAFAS** = U.S. Army Field Artillery School
 - USAFATC** = U.S. Army Field Artillery Training Center
 - USMC** = U.S. Marine Corps
 - USMCR** = U.S. Marine Corps Reserves

All maps as of Nov. 23, 2009

* Note: 2 BCD is US Army Reserve

Maps Sources:
 U.S. Army FA: Jack Hensley, Capabilities Development and Integration Directorate
 U.S. Army ADA: Levi Battiste, Branch Marketing Office, Chief of Air Defense Artillery
 Email updates and corrections to firebulletin@conus.army.mil

Silhouettes of STEEL

41st Fires Brigade, III Corps

As January 2008 began, the 41st Fires Brigade was trained and ready, serving as a contingency expeditionary force — prepare-to-deploy-order mission, providing lethal and nonlethal fires and fire support anywhere in the world. Then in late January 2008, the brigade received a change in mission, directing the unit to deploy to Wasit Province as a battlespace owning brigade serving as a brigade combat team in support of Operation Iraqi Freedom. The brigade reorganized, trained at home station and began to deploy personnel and equipment five months later.

Deployments and operations. Arriving in Wasit, the brigade served under the 10th Mountain Division and Multi-National Division-Central. The brigade previously deployed in support of Operation Iraqi Freedom as 4th Fires Brigade, 4th Infantry Division, Operation Iraqi Freedom 05-07 and as 41st Field Artillery Brigade, V Corps in 2003. Headquartered at Forward Operating Base Delta in Wasit Province, Iraq, the 41st Fires Brigade was responsible for a coalition force that included soldiers from El

Salvador, Georgia, Kazakhstan, Lithuania, Poland and Romania, as well as Task Force Tusken, which oversaw the border transition teams at Combat Outpost Shocker on the Iranian border. The brigade also partnered with the 32nd Iraqi Army Brigade as well as the provincial Iraqi police.

The brigade deployed with its 2nd Battalion, 20th Field Artillery, and 589th Brigade Support Battalion, while 1st Battalion, 21st Field Artillery, deployed ahead of the brigade in support of detainee operations at Camp Bucca. 1-21 Field Artillery was later re-tasked by Multi-National Division-Central to support operations in Basra. In all, the brigade deployed with more than 1,200 Soldiers.

The brigade oversaw Operation Iberian Fly-Away, where 1,600 Georgian soldiers had to redeploy in 72 hours back to Georgia because of the conflict with Russia. 589th Brigade Support Battalion helped facilitate the movement of the Georgian soldiers and their equipment. The result of the Georgian redeployment was moving 2-20 Field Artillery Soldiers to three joint security stations,

manned in partnership with the Iraqi army and police.

Working with the Wasit Provincial Reconstruction Team, the 41st Fires Brigade accomplished historic events including the renewal of cultural events not seen in the area since before Saddam Hussein's regime took power. Operation Bring on the Docs was a joint medical civil-military operation between the Wasit Director General of Health and the 41st Fires Brigade, designed to restore the medical capacity in Wasit and to bring clinics up to the regional health care standard. Members of the brigade surgeon cell and Company C, 589th Brigade Support Battalion completed 39 lectures, 28 key leader engagements with hospital staff, and 25 hospital assessments, and treated more than 5,300 patients during the deployment.

Operation Jack Straw was a joint task force comprised of the brigade legal team, military police, law enforcement professionals, a provincial reconstruction team, rule-of-law principal and civil affairs personnel. They assessed all jail facilities in



Soldiers from 589th Brigade Support Battalion receive their mission brief as they prepare for a combat logistics patrol to Joint Security Station Mutanabe, Iraq, Jan. 29. (Photo by SFC Joe Thompson, U.S. Army)

Wasit Province and biometrically screened all detainees in the facilities. The team also coached, taught and advised provincial judges to issue warrants and make rulings consistent with the Iraqi Constitution.

Wasit Province became the 13th province in Iraq to transfer security responsibilities successfully from coalition forces to Iraqi security forces in October 2008. Wasit Governor Abd al-Latif Hamad Tarfah and LTG Lloyd Austin, Multi-National Corps-Iraq, commanding general, signed the Wasit Memorandum of Understanding, transferring the security of Wasit province to the provincial government and Iraqi security forces.

1-21 Field Artillery (Multiple-Launch Rocket System). *First Strike* deployed ahead of the 41st Fires Brigade in support of detainee operations at Camp Bucca in April 2008. While A Battery remained at Bucca for the duration of the deployment, C Battery started at Camp Bucca; but after two months of detainee operations, the unit received a maneuver mission to conduct security patrols, escort international police advisors and support the police transition teams in Basra, partnering with the British forces there. After almost eight months in Basra, C Battery received a change in mission again — join the 41st Fires Brigade at Forward Operating Base Delta, where it completed escort missions for the provincial reconstruction team until its redeployment in July 2009.

2-20 Field Artillery (MLRS). *Deep Strike* deployed to Forward Operating Base Delta with the brigade headquarters and was the main maneuver asset for the brigade. Upon the redeployment of the Georgian army in August 2008, *Deep Strike* Soldiers assumed joint security stations previously manned by the Georgians



Iraqi army CPT 'Ali Abdual Zaharra Hussain, 4th Company, 3rd Battalion, 32nd Iraqi Army Brigade, holds the key to Joint Security Station Mutanabe during the transfer ceremony, May 28. B Battery, 2-20 Field Artillery Regiment, had been working with the Iraqi army since Aug. 2008. (Photo by SFC Joe Thompson, U.S. Army)

and partnered with Iraqi army and police. Once established, these joint security stations became the focal point for launching partnered operations with the Iraqi security forces as well as conducting humanitarian missions out to the people.

Deep Strike partnered with the Al Kut Orphanage, distributing humanitarian aid and establishing long lasting relationships with the community. *Deep Strike* also partnered with the local schools near the joint security stations, culminating a pen pal program with a video-conference between the Meadows Elementary School at Fort Hood, Texas, and the Al Enteserat Primary School in Shaykh Sa'ad, Iraq. *Deep Strike* Soldiers conducted more than 2,320 patrols, 360 key leader engagements and drove more

than 275,000 miles, while serving the citizens of Iraq.

589th Brigade Support Battalion. The *Iron Caissons* supported the brigade and Forward Operating Base Delta throughout the duration of the deployment. With the addition of the joint security stations after the Georgian redeployment as well as providing for Combat Outpost Shocker on the Iranian border, *Iron Caisson* Soldiers completed more than 270 combat logistic patrols, distributing more than 485,000 gallons of fuel, 430,000 gallons of water and 80,000 cases of bottled water. 589th maintenance shops did more than 5,800 maintenance jobs, while the air terminal moved more than 11,000 passengers and 4.5 million pounds of cargo. *Iron Caisson* Soldiers partnered with the Iraqi 8th Motor Transport Regiment, helping to train and advise the Iraqi army on logistics. *Iron Caisson*'s Company C, "Charlie Med," was stood up for the deployment and ran the Level II medical treatment facility on Forward Operating Base Delta, which treated more than 10,000 patients, gave 1,600 immunizations and conducted more than 200 medical evacuations.

Upon redeploying in August, the 41st Fires Brigade began comprehensive reset operations along multiple lines of effort to include Soldier and family fitness, leader development and material accountability.

SGT Justin Kerr receives range instructions from 1SG Eduardo Iterregui at Joint Security Station Mutanabe, Jan. 29. Kerr and Iterregui were both assigned to B Battery, 2-20 Field Artillery Regiment. (Photo by SFC Joe Thompson, U.S. Army)



210th Fires Brigade: Warrior Thunder

The Soldiers of the 210th Fires Brigade, 2nd Infantry Division, are forward deployed in the Republic of Korea and have earned the nickname *Warrior Thunder* based on the brigade's close integration within 2nd Infantry Division.

Working closely with our Korean allies and fully integrated in 2nd Infantry Division's plans and operations defending South Korea, 210th Fires has an extremely high operational tempo, focusing on the skills required by major combat operations. Comprised of its two M270A1 Multiple-Launch Rocket System battalions, 6th Battalion, 37th Field Artillery *On the Minute* and 1-38 Field Artillery *Steel Behind the Rock* are supported by the maintenance and sustainment capabilities of the 70th Brigade Support Battalion *Blacksmith*. The 210th Fires Brigade is a self-contained, self-sustaining fire support asset that provides 2nd Infantry Division and our Korean allies maximum flexibility to conduct full-spectrum operations. The brigade's assigned and attached separate batteries and company provide target acquisition (F/333 Field Artillery), communications (579th Signal) and air defense (E/6-52 Air Defense Artillery), further enhancing the capabilities of *Warrior Thunder*.

Katchi-Kapshida! (We go together!) While the 210th Fires Brigade is unique based on its mission, no organization can do it alone. The 210th fosters and maintains a combined operations relationship needed to aid in South Korea's defense. The 210th works daily with our Republic of Korea army counterparts and at echelon within the local and surrounding community to foster partnerships with our comrades in the Republic of Korea army. Working closely with our Korean teammates through frequent live fires, multi-echelon command post exercises and Korean-U.S. partnership events, the 210th Fires Brigade has built a close relationship of trust and confidence that truly captures the spirit of *Katchi-Kapshida!* The Korean augmentees to the U.S. Army Soldiers, who are assigned to the brigade, fulfill missions in every military occupational specialty within the brigade. Korean augmentees offer 210th Soldiers an education in Korean culture, helping to integrate seamlessly with our Korean allies.

Finally, 210th Soldiers team with local citizens and leadership in the city of Dongducheon, by teaching English at local schools, volunteering at local orphanages and enjoying many other opportunities to work within our Korean hosts. This community involvement fosters a bond of friendship with the Korean people, earning the brigade the reputation as a solid and dependable neighbor. These relationships are vital to achieve the brigade's wartime mission and enhance the combat effectiveness of *Warrior Thunder*.

Train as we fight. A unique and focused mission with 2nd Infantry Division, close ties with our Republic of Korea army allies and a high operational tempo allow the brigade to achieve a high level of tactical and technical competence in major combat operations. Coupled with its unique and challenging mission, the 210th Fires Brigade maintains an aggressive training schedule—and for good reason. Often coined “the main effort of the main effort,” the brigade's initial mission set includes providing fires in support of the defense of South Korea as part of combined operations with the Republic of Korea army.

During the first Republic of Korea U.S. combined live-fire exercise in April, 1-38 Field Artillery executed a live fire with its sister battalion in the Republic of Korea army, firing both U.S. and Republic of Korea Multiple-Launch Rocket System launchers simultaneously in support of combined arms operations. Training with our Republic of Korea partners during exercises, such as Operation Thunder Ready in January, enabled its units to share target

acquisition data and stressed combined operations with Republic of Korea artillery.

Operation Warrior Focus 09-01 and 09-02 included both 6-37 Field Artillery and 1-38 Field Artillery live firing at Chorwon Range. The third Republic of Korea Army Combined Counterfire Exercise in September focused coordinating logistics, incorporating engineers from E/1-72 Armor into building survivability positions and integrating Republic of Korea army infantry into the security plans for the Multiple-Launch Rocket System battalions and firing batteries. From October through February 2010, 1-38 Field Artillery and 6-37 Field Artillery will fire more than 150 training rockets in support of Republic of Korea counterfire operations as the Republic of Korea army develops interoperable systems to complement the precision and responsiveness of Multiple-Launch Rocket System fires.

As part of 2nd Infantry Division, the 210th Fires Brigade played a crucial role during the division's warpath and warfighter training exercises held from August to November. These exercises serve as opportunities to refine and practice its command and control across the division and with the 60th Republic of Korea Mechanized Brigade. Operations Key Resolve in March 2008 and 2009, and Ulchi Freedom Guardian in August 2008 and 2009, held in support of the Combined Forces Command, deployed 210th Soldiers across the Korean peninsula to hone its readiness in the defense of South Korea.

During every exercise, its brigade and battalion liaison teams reinforce and enhance its capabilities and effectiveness as they work and train with Republic of Korea army units, providing a valuable link with our Republic of Korea army allies at echelons from brigade to field army levels. Every training event strengthens and enhances its warfighting readiness and makes an assignment in the 210th Fires Brigade personally and professionally fulfilling.

Diablo – E/6-52 Air Defense Artillery. E Battery, 6-52 Air Defense Artillery *Diablo*, consisting of 24 Avengers, six Sentinel Radars and associated command and control is attached to the 210th Fires Brigade. 2009 saw the Soldiers of E/6-52 ADA executing several live-fire exercises to ensure they are ready to defend the brigade against any air threat.

During Operation Sea Strike in March and November, *Diablo* air defenders successfully fired a total of 55 missiles from their 24 Avengers over the Korean West Sea. Operation Seventh Circle in February honed gunnery and included the integration of E Battery into aviation forward arming and refueling point security, adding to the flexibility E/6-52 brings to 2nd Infantry Division. An aggressive training environment coupled with a focus on major combat operations enables E/6-52 to provide unmatched air defense, route and point security supporting 210th Fires Brigade operations.

Leaders, Soldiers and standards. The 210th Fires Brigade is a team of highly disciplined warriors who work tirelessly to meet the standards of the 2nd Infantry Division and exemplify the Army Values. Challenging training under realistic conditions, maintaining equipment to standard, counseling and Soldier care are cornerstones of the brigade's mission accomplishment. As the spirit and realities of “normalcy” increase in the Republic of Korea for our men and women in uniform—so do our opportunities to grow with our allies as we move toward our common and individual goals. Longer tour opportunities coupled with command sponsorship for families and increased quality of life in Korea make the 210th Fires Brigade the assignment of choice for field artillerymen.

Warrior Thunder remains *Second to None!* ■

Silhouettes of STEEL

214th Fires Brigade — flexible, agile, mobile, versatile Leaders

The 214th Fires Brigade transformed from a traditional field artillery brigade to a Fires brigade in 2006. It is a capabilities-based unit that provides precision, close and deep lethal artillery, conducts offensive logistics, is network-centric and provides command and control of fires for full-spectrum operations. The unit's transformation provided increased lethality, modularity and expeditionary support for joint operations.

Designed to be self-contained, the *Leader Brigade's* organization includes a Multiple-Launch Rocket System battalion, a High-Mobility Artillery Rocket System battalion, a cannon artillery battalion, a brigade support battalion, a target acquisition battery and a signal company.

The brigade's design allows it to plug and play into any division or higher echelon. The brigade headquarters' 2007 deployment to Iraq highlighted the unit's versatility. The brigade deployed to augment the 3rd Infantry Division, Fort Stewart, Ga. Once on the ground, the brigade received a change of mission to provide command and control of a forward operating base less than 40 miles from the Iraq/Iran border. At Forward Operating Base Delta, the brigade provided command and control for full-spectrum operations in support of Operation Iraqi Freedom to seven countries as a part of Multi-National Corps-Iraq.

The brigade's 168th Brigade Support Battalion returned from Iraq in December 2008. The *Make it Happen* battalion provided offensive logistical support to 49 battalions and companies in 13 brigades throughout Multi-National Division-Baghdad's area of operations. The battalion conducted more than 11,000 maintenance jobs, conducted 3,636 deliberate combat logistics patrols and drove more than 2.2 million miles to support 70,000 Coalition Forces Soldiers, Iraqi army soldiers, Iraqi policemen and national policemen in one of Iraq's most dangerous areas — Baghdad.

The battalion's supply support activity earned honorable mention status in the

2009 U.S. Army Forces Command Supply Excellence Award competition. This was the supply support activity's first time competing in this contest.

The *Deep Attack* 2nd Battalion, 4th Field Artillery, continues to demonstrate its lethality with precision rocket fires in support of Operation Iraqi Freedom. Since 2006, the battalion has provided a Guided Multiple-Launch Rocket System task force, formerly known as *Task Force Terminator*, but now dubbed *Task Force Leader* that rotationally provides precision firing capability for the Multi-National Corps-Iraq.

The battalion maintains its edge by incorporating the most current tactics, techniques and procedures from theater into

“The 214th Fires Brigade is transformed and ready to support basic fire support missions or to assume any mission.”

its training, a rigorous training cycle, rigid field training exercises and rotations to the National Training Center at Fort Irwin, Calif. This unit has proven that artillery is still a viable option in today's counterinsurgency fight.

The *Steel Warriors* 1st Battalion, 14th Field Artillery, has completed the transformation from a Multiple-Launch Rocket System Battalion to a High-Mobility Artillery Rocket System Battalion successfully. The *Steel Warriors* conduct precision rocket fires in support of Operation Iraqi Freedom. This transformation has expanded the Fires brigade's current mission from one battalion supporting Operation Iraqi Freedom with rocket fires to two. The 1-14th Field Artillery also provides Guided Multiple-Launch Rocket System fires as part of *Task Force Leader*. Keeping artillery in the fight conducting its core mission of delivering precision fires on today's battlefield is the battalion's main focus.

Activated on Sept. 18, 2006, as part

of the *Leader Brigade's* transformation, Battery H, 26th Target Acquisition Battery (Field Artillery) deployed 11 months later in support of Operation Iraqi Freedom. While in Iraq, the battery deployed 10 Q36/Q37 radar sections that provided critical force protection to Coalition Forces and precise enemy locations of rocket, mortar and artillery fires. The battery also managed 82 sensor systems across all of Multi-National Division-North safeguarding more than 60,000 Soldiers and 20,000 contractors; coordinated and executed 433 logistic support missions to more than 20 different locations traveling more than 220,000 square miles.

The battery is providing institutional radar training to 2nd Battalion, 5th Field Artillery, Soldiers, who are conducting an out-of-design mission in support of Operation Iraqi Freedom. In addition to providing training to its sister unit, the *Wolfpack* battery is preparing to deploy in support of Operation Enduring Freedom in 2010. H/26 also provides meteorological support to the entire 214th Fires Brigade.

The *Rock Hard* 2nd Battalion, 5th Field Artillery, replaced H/26 and is manning counterfire radar sections in Iraq as part of its out-of-design mission. The battalion is prepared to conduct its core competency mission and continually trains in the art of providing cannon fires to maneuver forces.

The 529th Network Signal Company provides network support to the entire brigade in addition to providing two command post node equipment and teams in support of *Task Force Leader*.

As one of the most versatile and lethal formations in the Army, the 214th Fires Brigade is transformed and ready to support basic fire support missions or to assume any mission. Flexibility, agility and mission accomplishment describe the capabilities of the combat tested and proven Soldiers, NCOs and officers of the *Leader Brigade*. ■

434th Field Artillery Brigade



A Basic Combat Training Soldier prepares to descend from a rappel tower at Fort Sill, Okla. (Photograph courtesy of 434th Field Artillery Brigade)

The 434th Field Artillery Brigade receives, in-processes and trains more than 17,000 Basic Combat Training Soldiers and 3,000 Warrior Transition Course Soldiers annually. The rigorous and realistic Basic Combat Training program of instruction transforms civilian volunteers into Soldiers, who are competent and confident in their war fighting and technical skills; who demonstrate the requisite character, values and warrior spirit; and who can contribute to their first units of assignment successfully.

The Warrior Transition Course is a 32-day program of instruction designed to access former Navy, Air Force, Marine and Coast Guard personnel into the Army as well as reintegrate prior service Army personnel back into the force. The Warrior Transition Course, conducted in lieu of Basic Combat Training and in about one-half the time, produces disciplined, motivated, physically, mentally, spiritually and emotionally fit Soldiers, who demonstrate the Army Values and the Warrior Ethos and are prepared for Advanced Individual Training or their first unit of assignment. Formerly conducted at Fort Knox, Ky., and White Sands Missile Range, N.M., the Warrior Transition Course moved to Fort Sill, Okla., in January.

Initial military training, both Basic Combat Training and the Warrior Transition Course, is designed to be relevant to the current fight and challenging to Soldiers in training. While fundamental Soldier skills and individual fitness remain the foundation of the training programs, Soldiers also learn higher skills, such as combat lifesaver certification and advanced rifle marksmanship. Situational training exercises, conducted in a realistic urban environment with Arabic foreign language speaking civilian-on-the-battlefield role players, facilitate training many of the 32 Warrior Tasks and 12 battle drills.

To ensure that training meets the needs of our Army at war, leaders across the brigade focus on the outcome of each training event so that Soldiers can apply their skills effectively. This requires that trainers think about not only the conditions and standards for a given task, but also the context in which the task is executed. To facilitate this approach, drill sergeants and cadre are certified in marksmanship training at the Combat Application Training Course, which both enhances their ability to train Soldiers to shoot their assigned weapons and teaches the tenants of Outcomes Based Training and Education. The outcomes-

based approach has led to numerous initiatives to update training events to closely replicate the conditions that Soldiers in theater experience.

During the past two years, 434th Field Artillery Brigade has expanded to meet increased accession and training requirements necessitated by the growth of the total Army. In addition to the brigade's organic reception battalion and three training battalions, a mobilized U.S. Army Reserve training battalion brought expanded training capacity to Fort Sill, each of the past two years with more than \$19 million dollars in new construction providing the additional barracks and administrative facilities to support this additional training load.

In January 2010, 434th Field Artillery Brigade will begin executing gender-integrated Basic Combat Training to further support manning requirements of a larger Army. Looking forward, top-to-bottom renovations of Soldier billets through the Trainee Barracks Upgrade Program and construction of new facilities to include a reception complex, three new "super dining facilities" and a chapel will ensure that 434th Field Artillery Brigade remains ready to meet the training requirements. ■

Silhouettes of STEEL

11th Marine Regiment: The Cannon Cockers

The 11th Marine Regiment provides fire support to the 1st Marine Division and is comprised of a regimental headquarters battery, three cannon battalions and one High-Mobility Artillery Rocket System battalion.

Since the start of Operations Iraqi Freedom and Enduring Freedom, elements of the regiment have performed a variety of nonstandard missions. In accordance with Commandant of the Marine Corps guidance, 11th Marines has returned to training aggressively in our core artillery and fire support competencies. Since July 2008, 11th Marines has conducted five regimental-level exercises and participated in three division-level exercises. These exercises have allowed our division fire support coordination center to focus again on providing essential fire support planning and execution to the 1st Marine Division.

Headquarters Battery, 11th Marine Regiment. Headquarters Battery, 11th Marines, continues to provide Marines to augment the ground-combat elements of the Marine Air-Ground Task Force in support of both Operations Iraqi Freedom and Enduring Freedom. Headquarters Battery Marines augment joint and combined staffs, provide fire support coordination and liaison teams, provide provisional truck platoons and serve on Operation Iraqi Freedom military transition teams. Our target acquisition platoon provides survey, meteorological, radar detachments and acoustic sensor teams in Iraq and Afghanistan.

The regiment's Headquarters Battery is in the process of establishing a civil affairs detachment. This detachment will conduct civil-military operations in support of the 1st Marine Division. The civil affairs detachment has participated in regimental-level exercises where it conducted populace and resource control operations by establishing a civil-military operations center and a dislocated civilian camp. The civil affairs detachment continues to mature as it prepares to support Operation Enduring Freedom. The battery demonstrates the flexibility of artillerymen as we serve in every clime and place.

1st Battalion, 11th Marines, *Ultima Ratio Regnum.* 1st Battalion, 11th Marines, has participated in multiple regimental and division level exercises, as well as supporting more than 26 pre-deployment exercises for forces deploying in support of Operations Iraqi Freedom and Enduring Freedom. The battalion continues to train and source firing batteries to the 11th, 13th, 15th and 31st Marine Expeditionary Units in support of the other contingency operations and Operation Enduring Freedom.

During the past year, 1st Battalion has become the regiment's home to as many as six cannon batteries due to rotations, emerging operational commitments and reserve component battery augmentation for deployments with active duty forces. 1st Battalion is focusing on re-establishing core competencies in providing responsive, accurate and close artillery fires in support of maneuver forces. We anticipate the battalion's deployment in support of Operation Enduring Freedom.

2nd Battalion, 11th Marines, *The Regiment's Best.* In December 2008, 2nd Battalion returned from a year-long deployment as a civil affairs group in support of Operation Iraqi Freedom, followed by three months of artillery reset training. In March, 2nd Battalion completed its first battalion-level artillery firing exercise since March 2007.

Simultaneously, the battalion supported three battery deployments to Okinawa, Japan, in support of the 31st Marine Expeditionary Unit. 2nd Battalion continues to provide equipment and individual augmentation to both Operation Iraqi Freedom and Operation Enduring Freedom, while it prepares for future deployment rotations.

3rd Battalion, 11th Marines, *Dominamus Nox.* 3rd Battalion, 11th Marines, deployed from May through November 2009, as the first Marine artillery battalion in Afghanistan to provide Fires in support of the Marine expeditionary brigade.

The battalion deployed with its Headquarters Battery; one of its organic firing batteries, Battery I; a reserve cannon battery, Battery N, 5th Battalion, 14th Marines; and a target acquisition platoon. Upon deploying, the 3rd Battalion also assumed command of a reserve High-Mobility Artillery Rocket System battery, Battery D, 2nd Battalion, 14th Marines, which was subsequently replaced by an active duty High-Mobility Artillery Rocket System battery, Battery R, 5th Battalion, 11th Marines.

In the Continental U.S., 3rd Battalion's three remaining organic firing batteries continue to prepare for independent deployments with Marine Expeditionary Units and with future deploying Marine artillery battalions.

5th Battalion, 11th Marines, *The Spirit of Saint Barbara.* Providing precision rocket and missile fires in support of the Marine Air-Ground Task Force, joint and coalition forces, 5th Battalion, 11th Marines, serves as the Marine Corps' only active duty High-Mobility Artillery Rocket System Battalion. Having completed its transition from the M198 howitzer to the M142 High-Mobility Artillery Rocket System in April, the battalion has trained aggressively to maximize the range and lethality of the system by focusing its efforts on the development of command, control and support of distributed operations across geographically dispersed terrain.

Since its transition to the M142 High-Mobility Artillery Rocket System, 5th Battalion 11th Marines, has supported two battery deployments to Iraq, and most recently deployed Battery R in support of Operation Enduring Freedom. 5th Battalion, 11th Marines, continues to work closely with its reserve counterpart, 2nd Battalion, 14th Marines, and other rocket battalions in the U.S. Army.

In October, 5th Battalion supported the 5th Marine Regiment as it conducted Pacific Horizon, an amphibious offload exercise in southern California. ■

Fires Modernization in the 21st Century

By MAJ Tony Dedmond and
LTC Jon R. Milner

This article examines two of the Army's branches, air defense artillery and field artillery and focuses on their modernization programmed for the next several years. This examination is particularly relevant for two reasons. First, after 41 years at Fort Bliss, Texas, the air defense artillery branch headquarters has relocated to Fort Sill, Okla. and as of June 23, joined the newly created Fires Center of Excellence with the field artillery branch. The Fires Center of Excellence will strive to integrate key aspects of the two branches, aspiring for unprecedented offensive and defensive Fires capabilities. Second, emerging missions to include indirect fire protection capability and Counter-Unmanned Aircraft Systems offer tremendous potential for synergy between the two branches in supporting the warfighter. How the branches and Fires Center of Excellence approach modernization to address these emerging missions will shape the Fires Center of Excellence and the Army as a whole for years to come.

Why should you care? While these modernizations are necessitated by the current global environment, their far-reaching impact will have some very direct effects on both the force as a whole and the individual warfighter alike. In these next months and years, the warfighter be introduced to systems he or she most likely will fight with for the remainder of their career. The introduction of these modernized systems will provide several opportunities for cross-branch training and deployment, as well as opportunities for joint operations that have yet to be discovered. Additionally, this modernization will present substantial challenges to both officer and enlisted leadership alike, requiring both to be more technically qualified in order to be effective leaders.

The Air and Missile Defense Modernization Strategy is marked by a complex and changing operational environment, with increased threats from ballistic and cruise missiles, manned and unmanned aerial systems, rockets, artillery, and mortars, coupled with the potential for weapons of mass destruction payloads. This environment re-

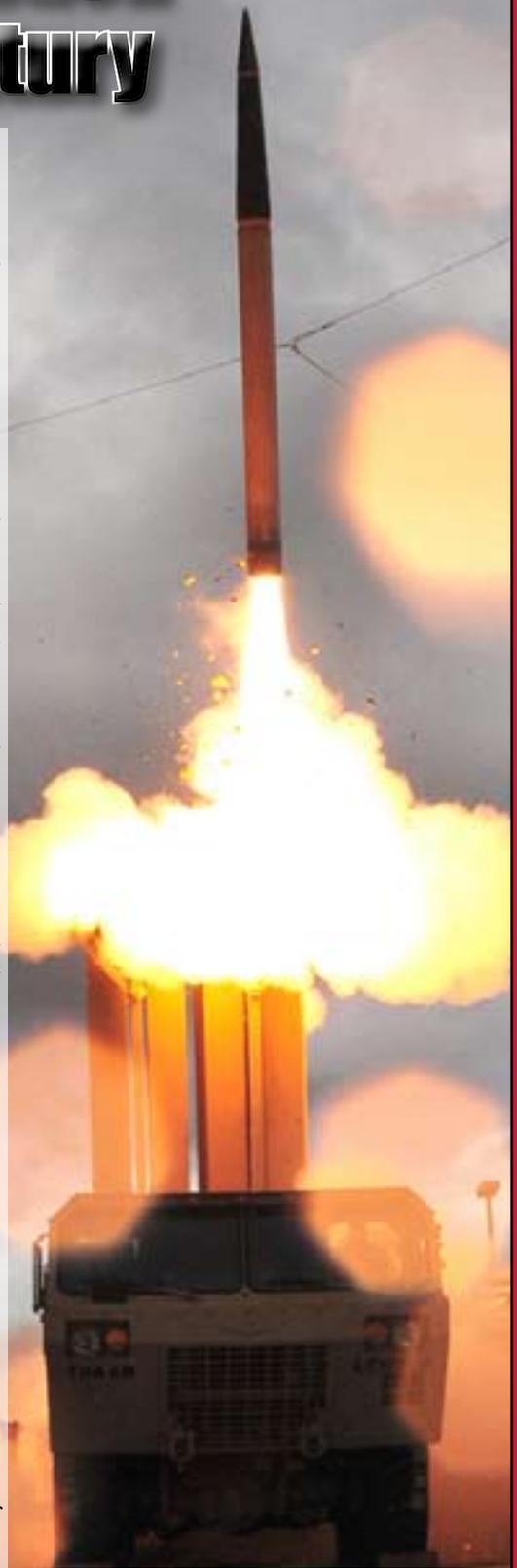
quires the capability to protect the homeland from internal and external threats, while simultaneously protecting multiple joint force commanders' area of responsibility, requiring 24-hours, seven-days-a-week air and missile defense protection from tactical through strategic operations. Air and missile defense has several programs already fielded or in development, but generally in smaller quantities, sometimes measured in individual batteries.

The Field Artillery Modernization Strategy likewise shares a complex and changing operational environment, but for markedly different reasons. The field artillery must be capable of fighting large scale, conventional campaigns against near-peer adversaries, but also operate in a protracted irregular warfare environment where collateral damage is unacceptable. The enemy may remain hidden in urban and congested areas, intending to bring lethal effects on our forces at a time and place of his choosing. This requires a scalable, tailorable family of capabilities that can range from near to far with precision, and from small scale nonlethal to large scale lethal effects.

Operationalizing and optimizing these capabilities are of primary importance for the Fires Center of Excellence in the near and long term. Chief of Staff of the Army, GEN George W. Casey, Jr., noted that the Army must possess six essential qualities to be effective in our nation's defense. It must be versatile, agile, expeditionary, lethal, sustainable and interoperable.

Air and missile defense and field artillery modernization are clearly on the path to deliver these qualities. Air and missile defense operations are inherently joint operations, requiring complex coordination and sharing of information in real-time, while still adhering to Army doctrine. Field artillery is modernizing some of the best artillery systems in the world, to make them even more capable across a range of operations. Both also routinely execute offensive and defensive actions simultaneously, providing freedom of maneuver and protection of forces during all facets of an operation; to include destroying threat aerial reconnaissance platforms in the air and their delivery means on the ground.

The process of modernizing is and must be an on-going evolution requiring frequent



The Terminal High-Altitude Area Defense System (Photograph courtesy of Lockheed Martin)

technology updates to our capabilities. Emerging missions and the rate at which hostile entities are able to develop and deploy technology require “modernization agility.” We must be able to adapt to new threats and required capabilities in months, not decades. And while remaining flexible and adaptive, we also must maintain a logical flow of modernization that increases warfighter capability across the force, with minimal disruption, and avoid creating multiple incompatible variants of a system. This is illustrated below, showing how the modernization paths of numerous field artillery then air and missile defense programs are being synchronized to manifest world-class capabilities. We will conclude this article with a brief discussion on emerging missions and the potential for Fires synergy.

Field artillery modernization. Today, field artillery finds 30 percent of its force deployed into hostile arenas. Given the heavy demand on the force, it is not surprising that the Vice Chief of Staff of the Army GEN Peter W. Chiarelli noted that, “the Army’s number one modernization priority is the [Paladin Integrated Management] program.” In the coming months the field artillery branch looks forward to the release of the prototype of the M109 PIM, an upgrade of the Paladin M109A6 self-propelled howitzer and M992A2 Field Artillery Ammunition Supply vehicle. Valued for its sustainability, the program is engineered to improve readiness, avoid components obsolescence and increase the useful life of platforms out to 2050. The program will allow maintainability and sustainability of PIM through commonality with heavy brigade combat team Bradley fighting vehicle, thus ensuring the Paladin fire support platform continues to meet the needs of heavy brigade combat team maneuver commander by improving Fires support response and increasing the mobility of the fire support platform.

Operationally, the PIM will give the heavy brigade combat team commanders upgraded capabilities including more maneuverability, higher rate of speed, increased crew survivability and delivery of accurate and timely fires when and where needed. It will improve operational awareness significantly on the battlefield and reduce the logistics footprint within the heavy brigade combat team. Looking forward, 600 PIM sets slated for upgrade with the first unit being fully equipped by 2012. PIM will provide the best value for Soldiers in conjunction with a low-risk

solution that ensures the Paladin and field artillery ammunition support vehicle platforms remain ready for the fight today and tomorrow.

Due to urgent operational requirements in Operation Iraqi Freedom, the field artillery will find the enhanced AN/TPQ-36 radar as the replacement for the aging AN/TPQ 36 and AN/TPQ-37 counterfire radar systems. The EQ-36 is a system technology upgrade that provides a 360-degree capability with improved range and accuracy in a clutter environment. The EQ-36 will be produced in two increments. Increment I, will incorporate 360-degree coverage, improved 90-degree range and accuracy, single C-130 sortie capability and Advanced Field Artillery Tactical Data System interoperability. Increment II, will incorporate improved 90- and 360-degree range and accuracy. The EQ-36 will provide leaders and units an extremely effective transportable system solution. This innovative system supports modular forces and ensures operational and tactical dominance in a counterinsurgency operation. Further, the EQ-36 CTA radar can perform in these

“We must be able to adapt to new threats and required capabilities in months, not decades.”

operations without sacrificing the ability to prevail in conventional combat. In addition, this solution complements the requirement for speed, surprise, simultaneous action in-depth, and flexible, independent action while supporting capabilities-based force development now and in the future.

Finally, the M777A2 lightweight 155-mm howitzer began fielding in 2006, and will complete Army wide fielding’s in 2011. The M777A2 provides the Army with an advanced, towed, lightweight 155mm howitzer, with self-locating and aiming capability that meets increased operational thresholds for mobility, survivability, deployability and sustainability. Over the next several years, the field artillery will modernize and deploy a multitude of systems, all of which will enhance the warfighter capabilities and effectiveness in current and future conflicts.

Air defense artillery modernization. Given today’s volatile world, the air and missile defense force finds itself in a steady state in demand. Currently, we have forward deployed or strategic assurance missions in seven nations around the world, meaning that before the next conflict begins,

air and missile defense has 47 percent of its force committed. Such a significant ongoing employment makes the modernization of the air defense artillery branch one of the Army’s highest priorities. The commitment to this modernization is materialized in the several new systems that will be fielded over the next eight to 10 years.

As these multiple systems are made available to the warfighter, to the need to optimize and integrate their capabilities becomes critical. To this end, the air defense artillery has made the Army Integrated Air and Missile Defense System of Systems their top priority. This capability is actually the capabilities resident in several systems, to include Joint Land Attack Cruise Missile Defense Elevated Netted Sensor, Patriot, Surface-Launched Advanced Medium-Range Air-to-Air Missile and Terminal High-Altitude Area Defense System, integrated by a common command and control solution called Integrated Battle Command System with “Plug & Fight” kits adapted onto individual system components (launchers, radars, etc.). When complete, the system of systems capability will allow individual platforms, such as a Patriot radar or Surface-Launched Advanced Medium-Range Air-to-Air Missile launcher, to enter the battle command network and seamlessly join the fight. Likewise loss of multiple components will not cause the system of system to fail – rather other components will step in and assume their role.

The end-state goals of this transformation are scalable, modular and tailorable air and missile defense task forces with a joint and expeditionary mindset. Air and missile defense transformation will enable the modern warfighter to fully integrate in a comprehensive and lethal battlefield through the use of cutting-edge, network-centric command, control, communications, computers and intelligence and weapons technologies.

Emerging missions. As discussed at the beginning of this article, emerging missions may have potential for great synergy between the field artillery and air defense artillery communities. Right now consideration is underway on how to structure and resource indirect fire protection capability as a program of record. It is anticipated that this new organization will leverage both field artillery and air defense artillery Soldiers and be assigned to Fires brigades.

Likewise, countering threat unmanned aircraft systems will require a similar holistic approach, involving not only

field artillery and air defense artillery, but several other stakeholders as well. In addition, future radar modernization such as the multi-mission radar may well replace select field artillery and air defense artillery ground-based radars.

A new approach. In recognition of these ambitious modernization efforts Headquarters, Department of the Army, G8 recently completed a significant staff reorganization process which merged DAPR-FDE (AMD/Space Division) and DAPR-FDS (Field Artillery “Strike” Division) into the newly formed DAPR-FDG (Fires Division) under a common leadership scheme and mission. This reorganization parallels the reorganization effort recently completed at Fort Sill with the creation of the Fires Center of Excellence and ensures every element of the Fires doctrine, organizations, training, leader development, materiel, personnel and facilities development process at Fort Sill develops synergy with the Fires modernization at the Fires Division, and achieves total mission success for the full Fires community. The air defense artillery Surface-Launched Advanced Medium-Range Air-to-Air Missile program is an early indication of how

this organizational synergy could enhance tactical operations. The program manager for the Surface-Launched Advanced Medium-Range Air-to-Air Missile, along with the Fires Center and HQDA G8-FDG, are investigating the potential of incorporating the Surface-Launched Advanced Medium-Range Air-to-Air Missile missile onto the High-Mobility Artillery Rocket System Launcher. Having the ability to fire both Multiple-Launch Rocket System and Surface-Launched Advanced Medium-Range Air-to-Air Missile rockets from the same launcher type would enhance commonality across Fires elements above the brigade combat team level. Such commonality would reduce the logistic footprints and enhance the potential for tailorable units that could be task organized to adjust to evolving situations. These kinds of synergy efforts will be the focus of a follow-on article in the *Fires Bulletin*. ■

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Lieutenant Colonel Jon R. Milner, field artillery, is the electronic warfare team chief in the Fires Division at Headquarters Department of the Army, G-8 Force Development in the Pentagon. Previously, he was the “Deep Fires” chief. He’s served twice in Operation Iraqi Freedom, once at Multi-National Force – Iraq Headquarters as a current operations officer and later as a battalion military transition team chief and battalion S-3 in Tikrit, Iraq. He holds a Master of Science in Administration from Central Michigan University.

Editor’s note: The DAPR-FDG points of contact are MAJ Tony Dedmond, 703-692-5280 for air and missile defense issues, and LTC Jon Milner, 703-692-6460 for field artillery issues. Please do not hesitate to contact them for any Fires modernization issues you need to discuss.



The New Hampshire Army National Guard’s new guided artillery rocket takes flight during a live-fire demonstration by C Battery, 3rd Battalion, 197th Field Artillery, at the Fort Drum, N.Y., artillery range, Sept. 22. (Photo by SSG Alexander Thurston, U.S. Army)

Fires

AUTHOR GUIDE

Article subjects. *Fires* strives to be “forward-looking.” We’re at the dawn of a new Army transformation. Many exciting things are taking place in the field and air defense artillery fields of expertise. Article subjects should therefore be current and relevant. Writers may share “good ideas” and “lessons learned” with their fellow Soldiers, as exploring better ways of doing things remains a high emphasis with *Fires*.

If an article subject is significant and pertains to FA or ADA and its diverse activities, as a rule of thumb we’ll consider it appropriate for publication. Article subjects include (but aren’t limited to) technical developments, tactics, techniques and procedures; how-to pieces, practical exercises, training methods and historical perspectives (AR 25-30, Paragraph 2-3, b).

We are actively seeking lessons-learned articles which will enhance understanding of current field and air defense artillery operations. The magazine’s heart is material dealing with doctrinal, technical or operational concepts. We especially solicit progressive, forward-thinking and challenging subject matter for publication. In addition to conceptual and doctrinal materials, we encourage manuscripts dealing with maintenance, training or operational techniques.

“Good ideas” or “lessons-learned” articles should have two closely related themes: one, what did you learn from what you did? The second theme is: what is most important for others to know, or what will you do differently in the future? Include only the pertinent information on how you did it so someone else can repeat what you did. Don’t include a “blow-by-blow” of your whole deployment. The article’s emphasis should be that your unit has a good idea or some lessons-learned to share.

Steps involved in submitting an article to *Fires* are outlined following.

All articles should have the “bottom line up front”; however, to better ensure your chances of publication, we recommend that you read all the criteria contained in this article as well as apply the guidance contained in the *Fires* style manual at sill-www.army.mil/firesbulletin/style.asp for more details. We do not pay for articles or illustrations other than providing contributors with complimentary copies of the magazine.

Fires is not copyrighted. All material published is considered in the public domain unless otherwise indicated. (Occasionally we use copyrighted material by permission; this material is clearly marked with the appropriate legal notification.)

If you get permission to use someone else’s graphic or photo, especially from the private sector, we need proof of that in writing.

Getting started. Select a relevant topic of interest to the U.S. Army Field and Air Defense Artillery community. The topic must professionally develop members of these fields. Write an outline to organize your work. Put the bottom line up front and write clear, concise introduction and conclusion paragraphs. Follow the writing standard established in AR 25-50, Preparing and Managing Correspondence, Section IV (the Army writing style), and DA Pamphlet 600-67, Effective Writing for Army Leaders, especially Paragraphs 3-1 and 3-2.

The Army standard is writing you can understand in a single rapid reading and is generally free of errors in grammar, mechanics and usage. Also see *Fires*’ style manual. Maintain the active voice as much as possible. Write “Congress cut the budget” rather than “the budget was cut by Congress.” (DA PAM 600-67, Paragraph 3-2, b[1]). Write as if you were telling someone face-to-face about your subject: use conversational tone; “I,” “you” and “we” personal pronouns; short sentences and short paragraphs. Articles should be double-spaced, typed, unpublished manuscript, between 3,000 and 3,500 (or less) but no more than 5,000 words, including endnotes as appropriate.

Authors should check their articles’ contents with unit commanders or organization directors or S2s/G2s to ensure the articles have no classified or operations security information in them. Clearance requirements are outlined in Army Regulation 360-1, Chapter 5, Paragraph 5-3. Headquarters Department of the Army/Office of the Secretary of Defense clearance is required if your article meets any of the criteria listed there. Article clearance is further covered in Paragraph 6-6, with procedures on how to do so outlined in Paragraph 6-9. The bottom line on most article clearance is discussed in Paragraph 6-6. While you certainly may ask your local Public Affairs Office’s advice, it is the “author’s responsibility to ensure security is not compromised. Information

that appears in open sources does not constitute declassification. The combination of several open-source documents may result in a classified document.”

So while the *Fires* staff may question the sensitivity of an article we receive, it is not our responsibility to “officially” clear articles, however if we do see something within an article that might cause concern, we reserve the right to withhold publication of such an article until it is thoroughly vetted with the proper subject matter expert or Army authority. But it still remains the author’s responsibility, as outlined in AR 360-1, not to compromise national security or U.S. Army operational security matters.

We reserve the right to edit an article, so the *Fires* staff will edit all manuscripts and put them in the magazine’s style and format. The author of an article or interviewee will receive a “courtesy copy” of the edited version for review before publication, however, if the author does not get back to the *Fires* staff with any questions or concerns within a specified suspense date (typically five to seven working days) it will be assumed the author “concur” with all edits and the article will run “as is.”

Except in the case of Armywide “news” items, authors should not submit a manuscript to *Fires* while it is being considered elsewhere. A comprehensive biography, highlighting experience, education and training relevant to the article’s subject and credentialing the author as the writer of the article. Include e-mail and mailing addresses and telephone, cell and fax numbers. Please keep this information current with *Fires* for as long as we’re considering the manuscript.

Photographs and graphics. Must be accompanied with an adequate description of the images and photographer/illustrator credits. All graphics files and photos must be separate from the text. See the “*Fires* Bulletin Photographer’s Guide” at sill-www.army.mil/firesbulletin/photographers.asp for additional information.

Sending the article. E-mail the article, photographs and graphics to the editor at firesbulletin@conus.army.mil; or mail them to P.O. Box 33311, Fort Sill, Oklahoma 73503-0311.

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Is the Army training system Millennial friendly?

By COL James Lackey, Gene Kamena and
CPT Robert B. Lackey

Colonel Johnson glanced at his calendar; his day began with physical training, then two hours of e-training with his second battalion, then a web 2.0-based officer professional development with all the captains in the brigade combat team, and finally a virtual family readiness group meeting in the evening. He reflected for a brief moment on the degree Millennials have changed the way the military communicates and trains — then the video conference device on his desk came to life; it was the commanding general.

We are not quite at this situation today, but perhaps this example is a glimpse into the future of where we need to be in the Army in terms of incorporating the Millennial generation. Millennials are the largest population of personnel within the U.S. Army today. It is, therefore, essential to ensure they are received into the Army in a way that benefits both the Soldier and the organization. One important aspect of achieving this goal is to ensure training techniques are suitable to bring out the full potential of this new generation of warrior. The issue of training Millennials is, therefore, a strategic issue that must be examined thoroughly by senior Army leadership.

The current U.S. Army training system is based on the guiding principles of establishing specific tasks, conditions, standards and an end state for every training event, situation or exercise that is conducted across the wide range of disciplines for which the Army provides training. The current task, conditions and standards-based training system was created by individuals of the Baby Boomer generation and geared to train the Baby Boomer and Generation X population of Soldiers. This article examines the dynamic that the Generation Y or Millennial population is having on current training practices and whether or not the current Army training system is out-of-date and irrelevant to train the U.S. Army's Millennial generation effectively and efficiently.

Soldiers assigned to B Battery, 48th Infantry Brigade, 118th Field Artillery Regiment, perform urban combat training at Fort McCoy, Wis., July 23, 2008. (Photo by MSgt Paul Gorman, U.S. Air Force)

Multiple generations in the same army. The U.S. Army is composed of three separate and characteristically unique generational groups of Soldiers: Baby Boomers, Generation X and the Millennial Generation. The relationships between these three generations are of strategic importance to the U.S. Army because each of the individual generations displays dissimilar characteristics that must be analyzed for policies and training to be utilized most effectively. The importance of these unique individuals must not be minimized. U.S. citizens rely upon Soldiers to support and defend their safety and freedom. Therefore, the continued ongoing training of the three generations within the current U.S. Army training system and future generations is of crucial importance to the Army's remaining effective and relevant in a constantly evolving world of potential threats.

Senior leadership of the U.S. Army is made up almost exclusively of members of the Baby Boomer generation. Additionally, middle-ranking commissioned officers and NCOs who serve as the middle management fall primarily into Generation X. The most important group, though, is the vast majority of the Army populace who are the junior officers, NCOs and Soldiers who are part of the Millennial generation. These junior-ranking members of the U.S. Army comprise the overwhelming majority of the Army's organizational structure and are the Soldiers who are on the front lines of the War on Terrorism today in Iraq and Afghanistan. In fact, a great majority of the total Army 2010 fiscal year personnel end strength of 1,111,600 Soldiers, as authorized by the U.S. Congress (U.S. Army Posture Statement, 2009), are members of the Millennial Generation.

Generations are a group of people who share a similar culture as a result of the throughput of the nature, nurture and life experiences they have in common. Generational differences stem in part from ethnocentrism, misunderstandings and uninformed ideas. According

to K. Smith's 2008 research report, *Gaining the Edge: Connecting with the Millennials*, ethnocentrism is considered to be the judging of another person's or group's ideas against your own. Due to the phenomenon of ethnocentrism, it is difficult for a person of one generation to provide an honest and unbiased assessment of another generation without thinking his generation is superior in some form or another.

Generational differences also are due to a lack of information on the part of one group relative to another. The lack of information is caused in part by the different life experiences each generation has. These life experiences, opinions and ideas, formed by the unique experiences of each generation, play a significant part in the generational divide. Ultimately, generational collisions are due to the misunderstanding of one group by another, according to Smith's research.

Baby Boomers are an extremely large population with more than 80 million members. Baby Boomers grew up in a post World War II America that experienced a never-before-seen level of national economic prosperity, according to Smith's research. Key life experiences and events of the Baby Boomers include the Montgomery bus boycotts, the passing of the Civil Rights Act, the John F. Kennedy and Martin Luther King Jr. assassinations and Woodstock, according to J. Drago's 2006 U.S. Army War College strategy research project, *Generational theory: Implications for recruiting Millennials*. A major behavioral characteristic of the Baby Boomers is that they are relentlessly goal-oriented. Throughout their upbringings, Baby Boomers set goals and metrics by which goal accomplishment could be measured and determined as successful or not. This tacit drive for goal accomplishment tends to consume the lives of Baby Boomers and sometimes leads to sacrifices of personal and family time. According to R. Zemke's book, *Generations at work: Managing the clach of Veterans, Boomers, and Nexters in your workplace*, Boomers love to think of themselves as the "star of the show" in whatever situation they may find themselves.

Generation X is the smallest of the three generations with only about 70 million members, according to research done in 2006 by R. Chambers, *Managing the Millennials*. Children from this generation grew up in a household where their Baby Boomer parents were overworked and tended to neglect their children due to work requirements, according to J. Drago's 2006 research. As a result, Generation Xers constantly are seeking a sense of family. They desire balance, prefer informalities and are attracted to the "edge" or adventurous activities, according to R. Zemke's 2000 research. Key events in a Generation Xer's life include the Watergate scandal, Three Mile Island, the Challenger disaster and Operation Desert Storm, according to J. Drago.

Millennials are a very unique population segment. Members of this generational group share certain characteristics, values, morals, beliefs and life experiences that make them who they are. The exact definition of the Millennial generation is debatable; however, a few succinct conclusions can be drawn based off of broad-spectrum consensus throughout the various scholarly resources available on the subject.

Millennial Warriors. A Millennial commonly is quantified as a person who was born between the years 1980 and 2000. This generation is referred to by many names — Millennials,

screenagers, the Net Generation, the Echo Boom, the Dot Com Generation, Generation Why and Generation Next, just to name a few, according to J. Drago. Millennials normally are considered to be upbeat and optimistic team players. There are roughly 76 million members of the Millennial generation, according to K. Smith's 2008 research on Millennials. Key characteristics or attributes of the Millennials are they were supervised throughout their childhood years and are extremely electronic-technology savvy. Millennials are accustomed to supervision and being told what to do with every minute of their day. As a result of this over-supervision the Millennials are receptive to advice from superiors.

Parents of Millennials often are referred to as "helicopter parents" due to their tendencies to hover around or over their Millennial children in everything they do, according to research conducted in 2008 by J. Newman, author of *Leading generation Y*. Key life experiences and events for this generation were the OJ Simpson trial, the Monica Lewinsky scandal, the dot com bust, the Columbine tragedy, the Oklahoma City bombing and the tragedy of September 11, 2001. Significant to the U.S. Army is the Millennials are nine to 29 years of age, making them the targeted slice of the U.S. population for Army marketing, advertising and recruiting efforts.

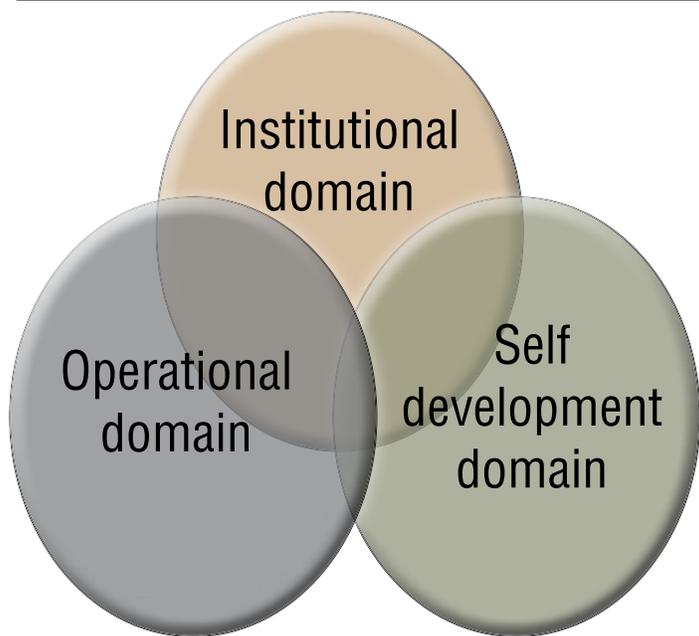
Dr. Jean M. Twenge's work, "Generation me," provides some recommendations for employers of Millennials. The Army, as one of the biggest employers in the U.S., needs to consider some of her suggestions. For example, ensure you tell Millennials why their job is important; Millennials require praise and reinforcement, they learn by doing ... they don't like long-boring lectures; one-on-one training should be *Socratic* and task oriented. Millennials like independence and flexible schedules; they don't take criticism well; they are very ambitious and money is highly important to them.

The Training Gap. Current U.S. Army training doctrine is derived from two publications that are disseminated to the lowest levels of the organizational structure — Army Regulation 350-1 Army Training and Leader Development and *Field Manual 7-0 Training for Full Spectrum Operations*. It is important to note that both of these publications were updated recently in an attempt by senior Army leadership to keep up with the times. Army Regulation 350-1 was last updated on August 3, 2007; and *Field Manual 7-0* was revised on December 12, 2008.

U.S. Army *Field Manual 7-0*, approved by GEN George Casey Jr. and other senior executive level members of the U.S. Army who are members of the Baby Boomer generation, designates seven principles of Army training that must be followed and serve as the basic guiding foundation for all Army training, as follows. Commanders and other leaders are responsible for training. NCOs train individuals, crews and small teams. Train as you will fight. Train to standard. Train to sustain. Conduct multi-echelon and concurrent training. Train to develop agile leaders and organizations.

These seven principles serve as the preeminent mandates for all training conducted within three domains of the Army training system. The seven basic principles appear, at first glance, to be straightforward, but present a dichotomy of sorts to Army junior leaders. Within these principles, junior leaders are to train to a standard and be agile at the same time. The focus of the seven principles is on the training process, rather than the most important aspect of training — the desired outcome of the training.

“Millennials like independence and flexible schedules; they don't take criticism well; they are very ambitious and money is highly important to them.”



The Army training system is described in detail throughout Chapter 3 of *Field Manual 7-0*. The Army training system is broken down into three separate domains meant to complement and overlap each other: operational, institutional and self-development. The institutional training domain includes schools and training-base centers that provide initial entry training and all subsequent professional training for members of the U.S. Army, according to *Field Manual 7-0*. The institutional domain is the “brick and mortar” schoolhouse aspect of the Army training system. Programs of instruction and training support packages delineate word for word what training must occur within this domain. Within the content of the program of instructions and training support packages lie tasks, conditions and standards for all training that is mandated by Army Regulation 350-1 and *Field Manual 7-0*.

The operational domain of the Army training system involves training activities and events that organizations conduct at an individual unit level, primarily at combat training centers, home station, mobilization centers and while deployed (*Field Manual 7-0*). These training events are geared toward improving the individual unit’s ability to accomplish an assigned mission with a set of tasks, conditions and standards and a mission essential task list that is used as a metric to measure the effectiveness or success of the training itself. Moreover, Army leadership emphasizes the unit’s performance level achieved at one of the three combat training centers. The majority of all units in the Army train at one of the combat training centers before they are deemed “trained” or certified to deploy in support of the War on Terrorism.

The Army training system’s self-development domain includes goal-oriented learning that expands one’s knowledge base at an individual level, according to *Field Manual 7-0*. This domain focuses on complementing the institutional and operational domains. Examples of training within the self-development domain are professional journal readings and pursuing continued formal and informal civilian education. Essentially, this domain is designed and used as a “catch all” for all knowledge and training that is not covered in the institutional and operational domain.

The U.S. Army fully realizes the need for adaptive and flexible Soldiers. In fact, much of *Field Manual 7-0* and Army Regulation

350-1 discuss the need for adaptive leaders. On the surface, the verbiage in the doctrine publications suggests the Army training system is on the right track to meet the needs of the Millennial generation. However, further examination of the publications suggests, although the adaptive verbiage is in the doctrine, the practices and actual training for the Millennials are vacant from the Army training system.

There are a few specific programs within the Army training system that successfully identify Millennials as a special significant group worthy of added attention and effort to accommodate their characteristics. At the forefront of this effort is the U.S. Army’s recruiting message that is directed and administered by The U.S. Army Recruiting Command. The Millennial generation is the target market for all U.S. Army recruiting — as well they should be. Interestingly, Army recruiters largely are made up of members of Generation X and a few young recruiters who are actually Millennials themselves.

Recruiters got it right. During the past few years, the U.S. Army’s recruiting focus was on the Millennial teenager and sending the message to the Millennial’ Baby Boomer parents that it is a family decision to join the Army. The two main themes of all current U.S. Army recruiting commercials and advertisements present on television and the Internet are family and technology. These recruiting tactics hit at the very soul of a Baby Boomer and Millennial. Baby Boomers think of themselves as the star of show, so including them in the “family decision” of having their sons or daughters join the Army simply is playing to their Baby Boomer characteristics of love for self and need for control. Additionally, since Millennials are the most supervised and managed generation in history, it is appropriate that their parents are targeted to influence their decisions to join.

The Army’s recruiting message also focuses on technology. Millennials are the most tech-savvy generation in America, and the results of these recruiting message themes are phenomenal. The Army exceeds the end strength of total personnel as authorized by Congress, yet recruits continue to enlist at a record pace even with a decrease in available initial enlistment bonus money. According to the U.S. Army Recruiting Command, there is no shortage of new recruits signing up in a bad national economy where jobs are scarce; the Army currently is meeting manning requirements.

The Army’s recruiting message is not the only program that was adapted for the Millennials successfully. Another success in targeting and adapting for the Millennial Soldiers is Basic Combat Training, also known as “boot camp,” which many have viewed for decades as “the most sacred crucible” (See *Millennial Warriors* by J. Kamena) of old-style rigid Army training. However, recently there has been an emergence of a new training methodology called Outcome Based Training and Education.

Trainning tailored for Millennials. Outcome Based Training and Education is a training methodology that focuses on the desired outcomes of training and not the process of the training itself (See *Soldier training is in for a big overhaul*, by J. Tice.) Outcome Based Training and Education is the brain-child of MAJ (Retired) Don Vandergriff, who has more than 20 years experience in the U.S. Army Special Operations community. Outcome Based Training and Education began in Basic Combat Training at Fort Jackson, S. C., in 2008, and has spread to Fort Benning, Ga., and Fort Sill, Okla. Fort Jackson is also the Basic Combat Training Center of Excellence for the Army (see *Basic training remix*, by D. Steele). As the Basic Combat Training Center of Excellence, Fort Jackson is the proponent for all Basic Combat Training doctrine and is responsible for producing all Basic Combat Training regimens. Outcome Based Training and Education is a breakaway from

the goal-oriented training that so many Baby Boomers intrinsically and naturally gravitate toward because it focuses on the desired outcome of an event.

The major difference between Outcome Based Training and Education and most other training in the Army training system is the process used to achieve the desired training outcome is not dictated by strict tasks, conditions and standards that must be followed to the letter. Outcome Based Training and Education empowers junior leaders, who happen to be Millennials, and allows them to devise the throughput of the training to meet the desired outcome. This training allows for innovation at the lowest level of the Army — essential to developing future leaders. Out-of-the-box thinking is promoted rather than stifled by the rigidity of tasks, conditions and standards (See *Stifled Innovation? Developing Tomorrow's Leaders Today* by L. Wong). Since the method of training itself largely is determined at the lowest organizational levels, technology and innovation rule the day. During Outcome Based Training and Education, innovation is being thrown into training at a torrid pace by the Millennial junior leaders and Soldiers.

Tailoring to the specific needs of the Millennials is not limited to Army training; it

has also seeped into Army chaplain practices as well. The U.S. Army Chaplain Corps sees varied successes in dealing with the Millennials, but mostly positive training outcomes have been achieved. The Millennial generation is vastly spiritually different from the Baby Boomers and Generation Xers, and this is a good thing for the Army Chaplain Corps. Roughly 96 percent of the Millennials believe in a god and 87 percent believe in Christ (See *Chaplain Ministry to the Millennial generation* by R.M. Coffey).

However, only 55 percent of the Millennials attend worship services. To address this challenge, the Army Chaplain Corps has become creative in its attempt to attract the Millennials to spiritual services. One method Army Chaplain Corps uses is offering alternative worship service schedules. According to Coffey, these unconventional schedules gravitate toward afternoon services to attract the younger Millennials who vary their sleep time and have problems getting out of bed in the mornings.

Additionally, according to Coffey, technology is playing an increasing role in the actual services themselves. The Army chaplain services compete with civilian churches in attracting Millennial attendees. The Chaplain Corps has wide latitude to adapt from a traditional service and mold its programs around the

Millennials. In this area, the Army Chaplain Corps has a competitive advantage because the resistance to change in civilian churches is exacerbated by older Baby Boomers and the veteran/traditional generation that came before the Boomers. The Army does not have to be concerned about this population segment because the veterans/traditional generation members are too old to serve in the Army.

Disconnected approaches. Army training is provided mostly in the operational training domain for the War on Terrorism and has been largely ineffective at targeting the Millennials and harnessing their strengths. Progress has been made in the institutional domain of the Army training system through Outcome Based Training and Education, but has not filtered over into the operational domain yet. This disconnect between the institutional and operational domain is widespread and rampant across the Army. The Army's challenge is to maintain the momentum it began in Basic Combat Training through the use of Outcome Based Training and Education (see *Millennial Warriors*, Kamena).

There are several reasons that can be identified relative to the incongruence between the institutional and operational domains. First, training received by units preparing to deploy in support of Operations Iraqi Freedom and Enduring Freedom is governed by a mission-essential task list that must be completed satisfactorily based on the tasks, conditions and standards laid out for the training. The mission-essential task list metrically spells out in detail each task and sub-task that must be accomplished for a unit to be considered ready for deployment and its wartime mission. The mission-essential task list and tasks, conditions and standards are created by senior leader Baby Boomers and disseminated down

the chain to the Generation Xers and then on to the Millennials at the lowest structural levels. These tasks, conditions and standards allow no digression for innovation or empowerment on the part of junior Millennial leaders who are going through the training.

As a result of this rigid process, units primarily consisting of Millennial junior Soldiers are certified for deployment through the use of a "check the block" training system that often leaves units unprepared for the actual mission sets that they will encounter in theater. The mission-essential task list is used as the gospel, even though in reality, for the majority of units that deploy to theatre, it is a document that is years out of touch with current operations. The mission-essential task list is followed because that is "what has always been done" and no further training action is required once all tasks are trained to the standards laid out within the mission-essential task list.

The making of a Millennial marksman. Basic rifle marksmanship training is as old as the Army itself and is at the core of Army training. Basic rifle marksmanship is considered "what makes a Soldier a Soldier." The Army uses this training to qualify Soldiers on individual weapons, such as the M16 and M4 assault rifles. Basic rifle marksmanship tasks, conditions and standards have remained by and large unchanged for the last 20 years. To qualify as an expert on the M16 assault rifle, a Soldier must hit the goal of 23 of 40 targets at varying distances between 50 and 300 meters down range.

The Army training system has failed to identify that, in the War on Terrorism, enemy targets are very rarely, if ever, 300 meters away from the shooter. For the most part, targets in the War on

A Basic Combat Training Soldier takes cover during individual movement technique training at Fort Sill, Okla., Aug. 12. (Photo illustration by Jason Kelly, *Fires Bulletin*)

Terrorism are well within 100 meters and many times at close quarters, point-blank ranges. Additionally, this standards-based system of individual weapon qualification does nothing to use the Millennials' unique skills. Basic rifle marksmanship training is dictated word-for-word, and there is no room for Millennial innovation input either by thought or technology. Innovation in training more easily would allow quick adaptation to the fight in Iraq and Afghanistan where terrorists do not adhere to decades' old training methods for the sake of tradition or deference to their elder leaders.

Deviations to basic rifle marksmanship training are few and far between. In fact, deviations from the standard are frowned upon by senior leadership. Also, outside-of-the-box weapons training are, by and large, deemed unsafe by Baby Boomer senior leaders and, therefore, not conducted by the Millennials who are executing the training.

Training the Millennials is an absolutely crucial practice that needs more attention from senior Army leaders. According to D. Stafford and H. Griffis in their 2008 study, *A Review of Millennial generation characteristics and military workforce implications*, Millennials naturally embrace the use of technology more than any other generation in the history of the U.S. Army. Millennials are extremely bright and are the most highly educated group of cohorts relative to other generations within the U.S. Army (see Stafford's 2008 Review).

With their education and the inclination for technology, Millennials are primed to provide innovations into the training system—if allowed. They are the proverbial “innovators in waiting” of the Army. The challenge for senior leaders is to “learn and embrace their technology; nothing turns Millennials off faster than a leader who takes pride in not using or understanding technology” (see *Millennial Warriors*, Kamena).

Recommendations. The recommendations below are offered as a beginning to a long term process of integrating and exploring the future potential of Millennials.

Review and adapt the Army Personnel Management System. Allow for collaboration and independent learning. Keep the focus on task-oriented outcomes based training, but permit Millennials to transition to the “hands-on” phase sooner.

The U.S. Army must build training systems and procedures to allow feedback to Millennials via virtual systems. Millennials need to know why tasks are important and how they fit into the organization. In other words, the Millennials must receive more “why” and fewer lectures during training. Counseling and feedback are a must, and negative feedback to Millennials must be couched in a positive manner. Senior leaders must foster a command climate that allows Millennials to be active members of the team and provide them opportunities for education online and off duty.

Encourage competition. Millennials are extremely ambitious and desire praise; competition must be a part of training and rewards given to the winners.

Training and Doctrine Command should facilitate a Millennial study and then hold a Millennial conference to announce and discuss the results of the study. Representatives from the academic and business communities as well as the military should be invited to participate in this conference. A representative number of Millennial officers and enlisted Soldiers from across the Army should also be invited to participate.

The Army must learn from Recruiting and Cadet Command by establishing best practices for training in the operational domain. Additionally, the business community may be able to contribute some best practices for incorporation into Army training adaptation. In turn, the Army must conduct a survey focused on Millennials,

providing feedback about their leaders, training environment and attitudes towards the service. This forum will provide the Army invaluable information with which to reshape its training.

Relook rewards for Soldiers. The time is long overdue for the Army to relook how it rewards Soldiers. Medals are traditional and should be maintained, but time off, monetary rewards and education matter more to Millennials.

The Army is a large organization that is having trouble quickly adapting to change throughout the entire organizational structure. Millennials now make up the majority of the Army; unfortunately not enough attention is being afforded them because this group is comprised of only the junior ranks of officers, NCOs and enlisted Soldiers. The power and policy making authority in the Army lies with the senior leaders who are members of the Baby Boomer generation. Ethnocentrism plays a significant role in the Army's resistance to adapt its training system to accommodate the Millennials because the Baby Boomers who make the policies see nothing wrong with it. The Baby Boomers created the training policies themselves and in most cases found success with them in the past. But the demands of the Long War, in which we operate today and likely well into the foreseeable future, necessitate adaptation.

Although the operational and self-development domains have failed to be adjusted and modified to meet the Millennials' strengths, the institutional domain is well on its way through the use of programs like Outcome Based Training and Education to hone in on the skills the Millennials present. Much can be learned, transferred and applied from the institutional domain of the Army to make other domains more effective in training this unique generation of Soldiers. Will the successes of the institutional domain cross over into the operational and self-development domains or will the resistance to change continue to permeate the senior ranks of the Army? Only time will tell. ■

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Intermediate Level Education: helping to combat field artillery atrophy

By COL (Ret.) James L. Davis

The white paper *The King and I: The impending crisis in field artillery's ability to provide fire support to maneuver commanders*, which was written by three former brigade combat team commanders, openly challenges the deterioration of the field artillery branch at an alarming rate. The paper centers around the authors' assertion that "no branch of the Army has suffered a greater identity crisis than (the) field artillery, as a result of transformation, (counterinsurgency)-centric operations and the non-standard manpower demands of (Operations Iraqi and Enduring Freedom)." In light of this white paper, the Fires Center of Excellence and the Command and General Staff Officer College developed several initiatives to alleviate this perceived concern and help combat the atrophy of field artillery skills among the branch's mid-level officers.

Intermediate level education has always been viewed as a course that provides an officer the opportunity to

build a solid educational foundation for future assignments. Unfortunately, unless an officer is selected for attendance at the War College, intermediate level education is probably the last educational opportunity for most field grade officers. Therefore, it is the last opportunity to provide both field artillery and maneuver officers the ability to gain higher-level proficiency in Fires during their field grade years. Intermediate level education provides a superb educational environment to make an impact on the skill set of field artillery mid-grade officers before they move into the critical positions of battalion executive officer, battalion operations officer and brigade fire support officer.

Core skills. The Fires Center of Excellence addressed this perception of deteriorating skills by developing the Field Artillery Campaign plan. It specifically laid out several programs to rebuild the field artillery experience base, re-establish training capacity and restore senior leader oversight. To rebuild the field artillery experience base, MG Peter Vangjel, former commanding general of the Fires Center of

Artillerymen train at the Field Artillery Captain's Career Course at Fort Sill, Oklahoma. (Fires archives)

Excellence, proposed expanding the Field Artillery Captain's Career Course from 20 to 24 weeks; Pre-Command Course from two to three weeks and Noncommissioned Officer Education System up to four weeks. Second, he recommended increasing the emphasis on Fires within intermediate level education. By lengthening the courses and increasing the emphasis on fire support skills, Vangjel was attempting to broaden the professional knowledge foundation throughout the force.

Re-Redding training. The dilemma facing field artillery officers when they arrive at intermediate level education is they normally have come from a non-field artillery branch assignment. The normal career progression has these officers commanding a battery between their sixth and ninth years of service followed by a stint in an active or reserve training unit, teaching at a branch school or serving at recruiting command or in a non-field artillery coded position. In most instances, they have not

Day 1	Day 2	Day 3	Day 4
<ul style="list-style-type: none"> • Brigade combat team/ Fires cell • Lines of effort • Decide, detect, deliver and assess targeting process • Assessment • “Liberty Thunder” operations order brief 	<ul style="list-style-type: none"> • Concept of Fires development • Accuracy versus precision (Precision-Strike Suite-Special Operations Force) • Collateral damage estimate • Joint air support planning • Airspace command and control • Electronic warfare planning and integration 	<ul style="list-style-type: none"> • Cannon precision Fires/ Guided Multiple-Launch Rocket System • Targeting meetings, working groups and boards • Rehearsal/battle drills • Fire support coordinator trends 	<ul style="list-style-type: none"> • Field artillery operations • Fires Knowledge Network reach back • Training and Doctrine Command Capabilities Manager • Cannon, rockets and missiles, and sensors

served in a field artillery unit in two to three years. Couple this with numerous nonstandard missions, and many of these officers end up not performing field artillery core tasks in several years.

To combat this, the Fires Center of Excellence developed a “re-Redding” training program. This training is conducted one to two weeks prior to the start of the intermediate level education academic year and consists of a four-day training program designed to bring the incoming students up to speed on current doctrine; tactics, techniques and procedures; and field artillery operations (See the above figure for the program’s curriculum). It focuses on both fire support officer and field artillery operations skills that will prepare these officers better to act as the subject matter expert within their 16-person staff group during the academic year and, ultimately, their future assignments. Classes use the existing curriculum from the Fire Support Coordinator, Joint Fires, Electronic Warfare and Information Operation Courses currently taught at Fort Sill, Okla.

Intermediate Level Education Core and Advanced Operations Courses. Students spend the majority of their time in the Core and Advanced Operations Courses discussing doctrine, tactics and complex problems at the strategic, operational and tactical levels. Using both the joint operation planning and execution system, and military decision making process, officers employ current doctrine to analyze and develop solutions to complex problems embedded

in doctrine. Working as a member of a simulated joint and Army staff, each student analyzes and develops products from the Combined Forces Land Component Command to the brigade combat team perspective. These products include identifying the problem, mission analysis and development of an operations plan or order.

During the analysis, students discuss the various war fighting functions as well as the enablers that make a combined, division or brigade headquarters successful. Fires skills – both lethal and nonlethal fires – are discussed in various blocks of instruction at the macro level during both the Core and Advanced Operations Courses. The majority of the learning within each staff group occurs through discussions field artillery officers have with their fellow classmates as they work through complex and diverse problem sets. If an inbound field artillery officer is not well versed in lethal and nonlethal fires, then the staff group does not gain a full appreciation of how fires contribute to success in full-spectrum operations. It is, therefore, essential we bring each incoming officer up to speed on fire support matters so each staff group gets the full benefit of having a field artillery subject matter expert in its educational process. The “re-Redding” program significantly increases the skill set of each incoming field artillery officer and benefits not only the field artillery officer at intermediate level education, but, also, the entire staff group.

Electives. After completing the Core and

Advanced Operations Courses’ curriculum, officers are required to complete 192 hours of electives. They run the full gamut of full-spectrum operations and are taught by subject matter experts from within the college. In addition to supporting the students’ overall long-term professional development, the electives provide an opportunity to focus on the students’ educational needs for their upcoming assignments. The elective program supports the awarding of additional skill identifiers and is an integral part of the master of Military Art and Science Program. Electives also support the Command and General Staff School’s language program, prepare selected students for the Advanced Military Studies Program offered by the School of Advanced Military Studies and give students the opportunity to enroll in electives to support their own goals.

We are constantly updating the course material to ensure it remains relevant and current and, more importantly, provides master’s level expertise. Within the electives program, there are eight fires focused and related courses that field artillery officers entering intermediate level education should consider taking as part of their professional development. Senior artillerymen in the college challenge each incoming class to take these electives to build a strong foundation. Even with this challenge, the responsibility for self-improvement fully rests on each officer. All officers must look at their respective backgrounds and operational experiences, as well as their strengths and weaknesses, and select those

electives that will improve their professional knowledge base.

The courses outlined below all contain either a pure Fires curriculum or focus on critical aspects of both lethal and nonlethal fires that will assist students in developing into well-rounded officers.

“A307 Fires in Contemporary Operations” encompasses discussions on the planning and synchronizing of both lethal and nonlethal fires at the division level and below.

“A335 S3/XO Roles in Full Spectrum Operations” focuses on preparing students to become successful battalion and brigade operations and executive officers. Classes focus on the duties and responsibilities of an operations and executive officer in developing intelligence preparation of the battlefield; intelligence, surveillance and reconnaissance; and targeting at the brigade level and below.

“A532 Joint Targeting and Effects” covers in detail, joint planning using the joint targeting model, the six-step targeting cycle and the four-step ground targeting cycle.

“A866 Joint Firepower Control” is modeled after the Joint Firepower Control Course academic curriculum taught by the Air-Ground Operations School at Nellis Air Force Base, Nev. Students who complete this course earn the 5U Air Operations Officer Additional Skill Identifier.

“A544 Information Operations” examines this nonlethal fires capability at primarily the operational and strategic levels.

“A578 Fundamentals of Civil Affairs and Psychological Operations” explores the characteristics of psychological operations and civil affairs at the tactical and operational level as well as civil affairs units in global operations.

“A366 Joint Automated Deep Operations Coordination System Fundamentals” is designed as a hands-on class. It focuses on leadership and oversight skills required to understand the functions and capabilities of the Joint Automated Deep Operations Coordination System application in supporting the commander’s decision-making process.

“A368 Digital Fire Support Operations – Advanced Field Artillery Tactical Data System/Effects Management Tool” is another hands-on course that provides students with a general understanding of the functions, capabilities and battlefield architecture issues relating to the Advanced Field Artillery Tactical Data System and its client, the Effects Management Tool.

“Targeting in a Hybrid Environment”

is a new elective designed to study the integration and coordination of all nonlethal enablers in an era of persistent conflict. The hybrid environment encompasses multiple threats and is more than just information exchange, and command and control warfare, but, also, includes civil affairs, civil military operations, space operations, and psychological operations. This initiative is critical because nonlethal specialists always will be warfighters in persistent conflict and, for the most part, fire support officers as integrators always will be at war. The class uses the Tactical Information Operations Course currently taught at Fort Sill as the base for this new course and, also, includes more diverse topics.

The classes cover a wide range of topics: interagency operations, partner and host nation concerns and issues, information operations from a joint perspective, commander’s communications strategy, space support in the detect and deliver realm and working with contractors. The elective also discusses public diplomacy, theater security cooperation, intelligence support to nonlethal targeting, culture, religion and fires in support of U.S. Northern Command and homeland defense. This elective challenges the students to understand these complex issues fully and build a foundation to combat future adversaries.

Active participant. These are designed to improve lethal and nonlethal skills to make mid-level officers more successful across the full spectrum of operations. Now that these initiatives have been outlined in the Field Artillery Campaign Plan and become operational, the rest is up to field artillery officers across the force and, specifically, those officers about to attend intermediate level education.

Each field artillery officer needs to be an active participant in the “re-Redding” program at the beginning of intermediate level education to be the subject matter expert in his or her respective staff group. Each must be an advocate within his staff group for both lethal and nonlethal fires during the numerous joint operation planning and execution system and military decision-making process planning sessions throughout the academic year.

These officers must identify electives within the Fires realm that best benefit their background and experience. Using these initiatives and programs, mid-level field artillery officers can ensure they remain relevant and current as they go back to the field, combat the degradation of Fires skills and assume critical roles in fires battalions and brigades. ■

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The ground shakes dust loose in the aftermath as Soldiers of C Battery, 1-321 Airborne Field Artillery Regiment, Ft. Bragg, N.C., fire a 155-mm towed howitzer at Camp Wright, Afghanistan, Sept. 23. (Photo by TSgt Brian Boisvert, U.S. Air Force)



Military and rescue workers stand amongst the wreckage of the World Trade Center in New York City, N.Y., Sept. 16, 2001. (Photo by Andrea Booher, FEMA News Photo)

Winning World War IV

Part I of II

By MAJ David Haynes

The world is at war again; although, some would say it never stopped fighting. The geo- and sociopolitical factors of World Wars I and II combined with the effects of the Cold War created a climate conducive to proxy wars and limited the amount of states willing to wage open conventional conflict against regional and global powers. As the weaponry evolved and our adversaries found it too costly to wage open war, an age begun where transnational groups joined by a common ideology and enemy began using an asymmetric tactic to bypass the extant military advantage.

This tactic is terrorism, but we are not in a global war on terrorism. We are in a world war against an ideology born of a narrow interpretation of religion. Winning this war will not be quick and will be incredibly difficult. It will rely more on intelligence and policing at the local level — a task for which our military in Cold War vestiges is marginally suited.

Clashing cultures. The millennia old struggle of East versus West is in its latest iteration. While the hegemonic struggle between the Warsaw Pact and NATO commonly was referred to as the Cold War, it, indeed, was a world war as it was marked by a time of proxy wars that spanned the globe — so, in effect, “World War III.” The current war can, therefore, be seen as a “World War IV” and is as much a clash of societies, ideologies and religions as we have ever experienced.

The beginnings. This conflict has deep roots. While it was forced

into a conventional war in 2001 and 2003, it remains an unconventional fight with an amorphous enemy not bound by geopolitical lines. Thus, this enemy is not engaged effectively with military power.

To understand the key to winning this war, one first must understand why the tactic of terrorism has been adopted by the West’s adversaries and the source of radicalism and its direction toward the West. This enemy will not be vanquished with the development and employment of an increasingly sophisticated suite of weapons systems, but in the shadows of populations where terrorist ideology is fomented and terrorists recruit, supply, plan and operate. This is an environment where the blunt instrument of national power, general purpose military forces, is not always the most effective.

Ideological war. While the U.S. Government coined the term “Global War on Terrorism,” we are not at war with terror. Terror is an emotion experienced as a result of actual violent acts or the perceived threat of violent acts; terror is really the fruits of the terrorist act. The terrorist’s ultimate goal is to use fear to compel his adversary to meet a demand. So, we are not at war with terrorism either. You cannot wage war on a tactic.

While not declared, except by the enemy, the war is one of ideologies. The West is at war with a foe, al Qaeda. This foe does not regard geopolitical boundaries. The bulk of those boundaries was imposed by us upon them during the Age of Empire and Colonialism. They are a loosely linked and amorphously structured group of transnational actors who see the world as the battlefield. Terrorists — by U.S. Government definition — are politically moti-

vated to compel a government or people to do their will through the use of violent acts or the threat of violent acts (ojp.gov/nij/topics/crime/terrorism/welcome.htm). To really understand the nascent use of terrorism as a means to reach political ends, a short discussion about warfare's evolution is necessary.

Waging war. An examination of the innovations of Western warfare and the military revolutions, as posited by military historians MacGregor Knox and William Murray in their book *The Dynamics of Revolution*, show a thirst for innovation that set in motion a millennial saga that saw the creation of the deadliest of arms, nuclear weapons. These weapons, in retrospect, not only changed the nature of warfare by their existence, but, also, made their capabilities irrelevant and resigned the world to a state of proxy warfare, insurgency and terrorist attack.

The rise of the nation state coincided with the rise of Western warfare. As nation states began to coalesce and the nation began to fund warfare, professional armies began to appear with a significant amount of resources devoted to equipping and training the formations. As nation states could field larger and better equipped forces, Europeans began to congeal into nation states as a necessity for the protection of the people, but more so for the protection of those who intended to rule over the people.

Violence as a tool. The French Revolution brought the will of the people into the equation when military matters were at hand. Mass politics became irrecoverably important in the political dynamic as enlightened people began to protest their status as subjects. Violence became a tool to redress grievances against the established government and to overthrow it.

The effect of the revolution in France was to change politics, but, more importantly, throughout Europe and, indeed, the world. This began a push toward republicanism as a form of government where people had rights and were not subjects of the crown. This gave them representation and, thus, a say in their government.

Extending this to terrorists is done by simply exchanging the term revolutionary with terrorist. However, the ability of a terrorist organization to overthrow an established government today is very difficult, due to the innovations in military power that give governments the primary monopoly on the ability to inflict violence.

Continued conflict. The birth of armored forces and the ability to mass indirect fires and synchronize them on the battlefield became the next advantage in warfare. Although memories of World War I include trench warfare, combined arms warfare had its birth during this conflict. The continuation of the conflict in World War II saw the full application of combined arms warfare in three dimensions and the enhancement of strategic/operational reach through the aircraft carrier and submarine.

However, as the Western way of war continued to progress, we became very adept at killing voluminous amounts of our enemy while allowing the enemy ample opportunity to exact a similar toll on our own forces. The speed, violence and ferocity of battle had reached its highest level and grandest scale by WWII, and continued warfare of this type and scale would mean only more casualties. Nuclear weapons were not developed necessarily to achieve overmatch in this sense, but the first use during conflict did just that.

Nuclear deterrent. The development began out of fears the Nazis were building nuclear weapons. The first two nuclear devices detonated in conflict produced the intended effect of forced enemy capitulation, but at a horrific civilian and environmental cost. Their use precipitated the Arms Race of the Cold War. The nuclear weapons went from fission based to fusion based. Increasing the destructive power with drastic second- and third-order effects,

such as the fallout, would create something theorists called nuclear winter.

The Arms Race between NATO and the Warsaw Pact created such an inventory of nuclear weapons that the danger existed of a cataclysmic event based on our own doctrine of mutually assured destruction. The apocalyptic specter of global thermonuclear war created a situation where the superpowers as early as the Korean War were not willing to fight each other openly. Perhaps, this signaled a potentially unaddressed military revolution, but, for sure, a phenomenon of the rise of super power proxy wars. The unintended consequence of the effectiveness of nuclear weapons was to render their capabilities irrelevant as no government wanted to use them in anger. Nuclear weapons' deterrence still keeps relations somewhat civil amongst the nuclear-armed countries. However, the world has gone back to combined arms warfare.

Unconventional and illegitimate means. Adversaries with less sophisticated military equipment have embraced guerilla warfare and insurgency to conduct open conflict through proxies. Transnational clandestine groups have coalesced with political objectives and adopted asymmetric tactics against established governments. These groups do not have sufficient capability to field an army, dominate an opponent and impose their will. The military powers of the West and, indeed, most sovereign nations are too massive and powerful for politically motivated groups to defeat conventionally.

It is plain to see why a non-state actor group would not choose to wage conventional war against a nation or coalition based on the violence that can be brought with the range of weapons available to the modern nation state. But from a sociological perspective, the terrorist's adoption of asymmetric tactics can be explained by strain theory. The strain theory has roots taken from the theory of Anomie created by Emil Durkheim, a twentieth century French sociologist, and was later affirmed by Robert K. Merton, a twentieth century American sociologist. Anomie is the dismissal of societal acceptable norms for behavior when they do not meet one's needs. For example, criminals suffer from individual strain theory when they adopt the need to gain the societal norms for success, material wealth, but lack the means to gain them legitimately. The desire to gain the wealth overshadows the impetus to conform to societal norms. The criminal, therefore, abandons the behavioral norm as it is an impediment to his or her "success."

In the same manner, the terrorist desires to make political change, but does not have the patience, resources, legitimacy or ability to effect the change through the prescribed societal acceptable manner. The terrorist, therefore, resorts to violence.

The terrorist also wishes to compel his adversary to do his will. The terrorist or terrorist group lacks the ability to confront the adversary in a conventional military fight due to lack of manpower and resources. Therefore, the terrorist and/or terrorist group adopts asymmetric tactics to inflict casualties on the adversary. In accordance with strain theory, the individuals and the group are unable to reconcile their inability to meet the goals of society through legitimate means and, therefore, adopt unconventional, illegitimate means.

Criminal behavior can, in some part, be explained the same way by the strain theory. So, should terrorist be classified as combatants or criminals — perhaps both? We are at war with them and, in this case, they are motivated ideologically by a narrow view of religion and fueled by hatred. ■

Editor's note: The second half of this article in the January-February edition of Fires will examine the history behind a transnational Islamist group and present a comprehensive strategy to combat al Qaeda and its affiliates.

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Man versus Nature: surviving high altitude, cold weather battlefields



Snow covered mountains are shown just outside of Afghanistan's Salang tunnel, Jan. 30. (Photo by SPC Scott Davis, U.S. Army)

By CPT Coley D. Tyler, CPT Russell G. Nowels
and Dr. Phillip L. Henson

Throughout history, armies have fought more than just each other on the battlefield. They have faced geographical and meteorological challenges. Examples date back centuries and include the Second Punic War (218 B.C to 201 B.C.) when Hannibal crossed the Pyrenees and the Alps Mountains to attack the Romans. The devastation of Napoléon's Grande Armée during his invasion of Russia in the winter of 1812 is another example. The Punta San Matteo — a peak in the Ortler Alps, Italy, at more than 11,500 feet above sea level — tested the Italians and the Austro-Hungarians during the Battle of San Matteo in World War I. Later, Soldiers experienced harsh conditions during the Battle of the Bulge and Operation Barabossa in World War II, and the Battle of the Chosin Reservoir during the Korean War.

Neither British forces in the Falkland Islands (1982) nor Russian forces in Afghanistan (1980 to 1988) were exempt from unfavorable operating environments. In 1999, India and Pakistan fought the Kargil Conflict in terrain with peaks that ranged from 13,000 feet to 18,000 feet above sea level and valley floors upwards of 7,000 feet between India. Operation Anaconda is another example of man versus nature. Soldiers fought the Taliban and al Qaeda network on the 10,000 foot mountain of Takur Ghar, Afghanistan, in 2002. In these conflicts, a large portion of non-battle injuries were a direct result of cold weather.

This trend of conflicts at high altitude in the extreme cold likely is to continue due to "hot spots" like Iran, China, Russia (including its former republics) and North Korea. The possibility of future conflicts in these areas makes it imperative that Soldiers are aware of the associated risks and are prepared for them. However, most military weather-related planning and preparing currently focus on heat adaption for the extremely warm temperatures in the desert climate of the Middle East.

This article explains some of the physiological effects of altitude and cold weather on the body and the mitigating strategies the military uses to counter those effects. It is not enough for leaders to know what to do; Soldiers must know why they are doing it. Having this knowledge will prepare them for future battles in these harsh conditions.

Environmental conditions. Before any discussion of how the body physiologically adapts to altitude or how it responds to cold weather, one must understand exactly what is happening that characterizes these conditions. Because there are few negative physiological effects below 1,500 meters (4,921 feet), this article considers the term "at altitude" to be any elevation above this height. This stimulates the production of erythrocyte — red blood cells. High-altitude settings are referred to as hypobaric environments due to decreased barometric pressure — or the atmosphere's weight at a given altitude.

Air consists of approximately 79.04 percent nitrogen, 20.93 percent oxygen and 0.03 percent carbon dioxide. As altitude increases, the weight of the atmosphere decreases. This results in a proportional decrease in the partial pressure of oxygen (the amount of air that is oxygen).

Air temperature. The air temperature decreases at an approximate rate of 1 degree Celsius (1.8 degrees Fahrenheit) for every 150 meters (490 feet). Cold air cannot hold very much water. So, in addition to being cold at high altitudes, the partial pressure of water (or water vapor pressure) is also low. This creates a situation where a very large partial pressure of water gradient exists between the outside air and the skin, and the outside air and the air in the body. This increases the risk for dehydration at altitude. Therefore, it is very important to continue proper hydration strategies to prevent dehydration.

Characterizing cold weather varies for each individual. What is cold to one person is not necessarily considered cold to another. A good definition of cold weather is any environmental condition that causes a loss of body heat, threatening homeostasis mainly through air and water. Strong winds are very common at altitude and can make the air feel colder. This drastically intensifies the effects of cold weather by increasing convective heat loss and the rate of bodily cooling.

The presence of water greatly influences cold-weather effects as well. Water transfers heat much faster than air. Cold weather is not the only factor to consider. The implications of decreased barometric pressure and partial pressure of water at high altitudes also are related to solar radiation.

Less protection. At altitude, sunlight travels through less of the atmosphere before reaching Earth. There is less water vapor to absorb its radiation, increasing radiant exposure. Snow's reflective

properties also intensify solar radiation exposure. Therefore, skin protection, such as clothing, sun block, lip balm and sunglasses, is essential. The roofs of some peoples' mouths even have been sunburned because they breathed with their mouths open.

Effects and adaptations. One of the first and most noticeable responses to being at altitude is a respiratory response. Pulmonary ventilation (breathing) increases within seconds of exposure at altitude. Chemoreceptors (sensory nerve cells that respond to chemical stimuli) in the body detect the low partial pressure of oxygen and signal the brain to increase pulmonary ventilation. Ventilation remains elevated for several hours or days at a level proportional to the altitude. Increased breathing causes the body to expire lots of carbon dioxide, lowering the partial pressure of carbon dioxide in the blood. This raises the blood's pH (acidity or alkalinity) and is called respiratory alkalosis. If the pH is low, the blood is more acidic.

Respiratory alkalosis. Respiratory alkalosis helps offset hypobaric hypoxia (the state of breathing decreased levels of the partial pressure of oxygen, creating an oxygen deficiency to bodily tissues). This offset occurs as a result of oxygen's increased binding to hemoglobin (the oxygen carrying component of the red blood cell) from around 80 to 89 percent.

Respiratory alkalosis allows more oxygen to be carried to working tissue such as muscle to fuel work. However, respiratory alkalosis also makes unloading oxygen to working muscle more difficult. Eventually, the hypoxic drive (the need for oxygen) overrides respiratory alkalosis due to the kidneys' excretion of additional bicarbonate buffering carbonic acid, which is formed from carbon dioxide. This allows increased ventilation to continue.

Work. The 75 percent decrease in the diffusion gradient between arterial and tissue partial pressure of oxygen is more important than the decreased saturation of oxygen in the lungs at altitude. This gradient is responsible for driving oxygen from hemoglobin in the blood into muscle tissue for use. Greater gradients allow gases, such as oxygen, to pass from one area to another. Gases continuously move in the body according to these partial pressure gradients. Decreased gradients slow the diffusion of oxygen to the muscle, inhibiting work capacity.

Red blood cell production. Another way the body adapts to the conditions at altitude is by increasing levels of erythropoietin, a hormone produced by the kidney that promotes the formation of red blood cells in the bone marrow. This stimulates the production of erythrocyte — red blood cells. Erythropoietin levels drop back to normal in about a month, but increased red blood cells will remain up to three months or more. More red blood cells mean an

increased capacity for oxygen transport within the body.

Altitude-based mission planning. These physiological responses are the underlying causes of decreased physical capacity, motor ability and possible alterations in mood and personality at altitude. These responses must be considered in mission planning with as much time allowed for acclimatization as possible. A general rule is to allow around three weeks for acclimatization at moderate altitudes (2,500 meters) and an additional week for every 1,970 feet (600 meters) after that.

To avoid health risks such as acute altitude (mountain) sickness, high-altitude pulmonary edema and high-altitude cerebral edema, ascent should be slow and gradual, refraining from climbing more than 984 feet (300 meters) per day at elevations above 9,840 feet (3,000 meters). If proper time for acclimatization is not available (which is common with military operations), leadership must pay extra attention to the warning signs of high altitude physical and mental conditions. See the figure for signs and symptoms.

Physical responses. Cardiovascular and metabolic responses also take place at altitude. Initially, cardiac output increases due to an increased heart rate to pump more blood to active muscles to compensate for decreased oxygen per liter of blood. This peaks after about six to 10 days, after which cardiac output and heart rate begin to decrease.

Basal metabolic rate (the minimum calorific requirement needed to sustain life in a resting individual) also increases with altitude with a growing reliance on carbohydrates for bodily fuel. Decreased

appetite caused by being at altitude makes maintaining body weight and muscle mass very difficult.

The eyes, along with internal body parts, also have been shown to be affected by altitude — primarily a decrease in color discrimination of the tritan (blue) color vision axis. This has proven to be transient and is related to increased heart rate and decreased oxygen saturation.

Leaders can mitigate the extent of these conditions by stressing aerobic fitness. Aerobic adaptations are related to the physiological responses at altitude. Thus, emphasize aerobic fitness to prepare for altitude. Increased aerobic fitness before entering a high altitude environment improves a Soldier's maintainable performance level.

Psychological responses. The mind is affected by altitude as well. Decrements in individual performance in problem solving also have been demonstrated at altitude. IPPS is a psychological testing procedure developed by J. Tounge in 2007 that was used to evaluate how a person's decision-making process was affected in cold weather. However, these results seem to be more of a combination of altitude effects and anxiety problems faced at altitude.

“Leadership must pay extra attention to the warning signs of high altitude physical and mental conditions.”

Signs and symptoms of altitude and cold weather conditions

Acute Mountain Sickness (AMS)	High Altitude Pulmonary Edema (HAPE)	High Altitude Cerebral Edema (HACE)
Headache, lack of energy, insomnia, loss of appetite, nausea, dizziness, shortness of breath, fluid retention, vomiting	Breathlessness at rest, dry cough that may develop into pink froth, bluish lips, nausea or vomiting, headache	Headache, stumbling, inability to perform, memory loss, loss of hand coordination, disorientation, confusion, hallucinations, psychotic behavior, coma, death

These occurrences warrant attention. Ensure Soldiers eat regardless of a lack of appetite. They also should be aware of possible changes in their vision so they can operate at 100 percent without increased anxiety or fear. Also, leaders should consider relying more heavily on added input before making decisions. This helps to avoid dangerous errors in judgment that have happened in high altitude problem solving.

Cold weather-based mission planning. When dealing with cold weather, the goal is to maintain a core body temperature of around 37 degrees Celsius (98.6 degrees Fahrenheit). The body has three main responses when the weather is cold. The first response is peripheral vasoconstriction. Peripheral vasoconstriction decreases blood flow to the exterior of the body, reducing convective heat transfer between the body and the outside environment — thereby increasing insulation and heat conservation.

Next, the basal metabolic rate increases internal heat production (non-shivering thermogenesis). When both of these responses are not enough to maintain core body temperature, the body responds with shivering, an involuntary and rapid contraction and relaxation of the skeletal muscles that can increase heat production four to five times normal values.

These responses make the extremities (the hands and feet) of the body particularly susceptible to cold weather, severely retarding muscle function. The cooling of the body's exterior affects the neural recruitment of muscle fibers, force production and the viscosity of the fluid and tissues that are crucial to appendage movement and sensory perception. Cold temperatures affect the body's brain and central nervous system ability to recruit muscle fibers (signaling muscles they are needed for work) and when they are called upon to be used, cold temperatures inhibit muscles from generating as much force versus when used in warmer temperatures.

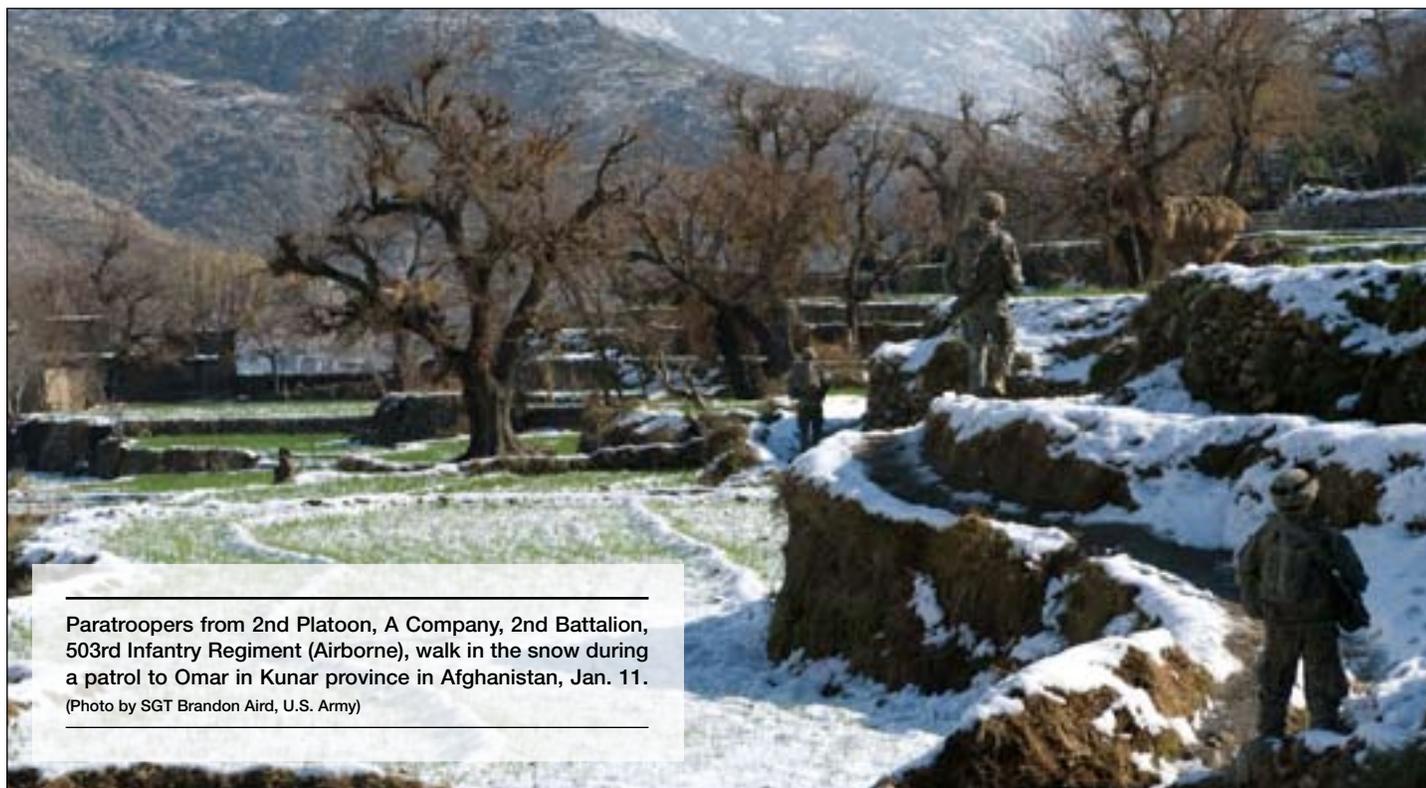
Physical tasks. This translates into decreased manual dexterity and makes fine motor movements much more difficult, such as knot tying. If military skills and task performance are to be maintained in cold weather, it is imperative those skills and tasks

be practiced in warm weather beforehand. There is some evidence that over time some acclimatization or habituation can take place in the hands through repeated exposure and a more effective cold-induced vasodilatation response, which is the ability for the body to open circulation to the extremities on a periodic basis to keep them from staying so cold. However, heavy loads, such as rucksacks, can impair blood flow to the hands and inhibit the cold-induced vasodilatation response. Cognitive performance also can be affected adversely by cold weather with performance deficits being shown with core body temperatures of around 34 to 35 degrees Celsius.

Studies. It appears race may be a factor in the occurrence of cold weather injuries as well. During a study conducted from 1980 to 1999, African-Americans experienced cold weather injuries at a disproportionately higher rate than Caucasians. However, another study in 1993 indicated that African-Americans did not show any difference in the incidences of non-freezing cold injuries compared to Caucasians. But, over time this trend has decreased. It appears that it does not play as much of a factor as it possibly did in the past. Instead, it found that a smoking history may play a bigger role. Regardless, whether or not smoking turns out to be a factor for an increased risk of cold-weather injuries (both freezing and non-freezing), smoking is not an advantageous habit in this environment.

Believe it or not, alcohol has a place in this discussion also. Alcohol restrictions, despite personal opinions, are warranted scientifically in a cold weather environment. Alcohol has been shown to impair shivering thermogenesis, helping lower core body temperatures and blunting cold perception.

Cold water immersion. Unlike the gradual cooling of the body on dry land, immersion in extremely cold water can cause death before the body has even experienced a drop in core temperature. It is known some individuals can be allergic to the cold, and sudden exposure can send them into anaphylactic shock. Sudden entry into cold water also can cause severe cardiovascular responses, leading to death by stroke or myocardial infarction (heart attack).



Paratroopers from 2nd Platoon, A Company, 2nd Battalion, 503rd Infantry Regiment (Airborne), walk in the snow during a patrol to Omar in Kunar province in Afghanistan, Jan. 11. (Photo by SGT Brandon Aird, U.S. Army)



An Afghan National Army machine gunner looks back after struggling over an obstacle in the snow during a patrol to Combat Outpost Warheit in Nuristan province, Afghanistan, March 2. (Photo by SSG Brandon Aird, U.S. Army)

Uncontrollable hyperventilation is also a response to the sudden contact of cold to the skin, which may lead to impaired consciousness (marked respiratory alkalosis), tetany (cramps) and a decrease in the ability to hold one's breath. This often leads to a person drowning before he or she ever experiences other effects such as hypothermia.

If the initial response to cold water is survived, it is very unlikely that someone could swim more than 50 to 100 meters to dry land due to decreased muscle function. Depending on body composition, the amount of a person's fat and muscle can affect the strategy chosen for survival in cold weather. Leaner people should stay put and move as little as possible to make the most of limited natural insulation (fat and muscle). If they attempt to use physical exertion to keep warm, they could lose heat quicker because their limited natural insulation would be unable to retain heat due to increased convective heat loss.

Larger people have a better chance of employing physical exertion in a helpful manner; however, they still are subject to diminished muscle function. Both types of people ultimately are subject to certain time constraints. They either must be removed from the cold water or heat the whole body of water to an acceptable temperature to prevent hypothermia and death.

This article just briefly touches some of the fundamental physiological occurrences at altitude and in cold weather. Although mitigating strategies and techniques to combat these environments were addressed, this article provides a base of knowledge for leaders so they can assess their actions in these environments, ensure everything is done to preserve combat power and take care of Soldiers. There is always room for improvement, and that is fueled by education. Dealing with being at altitude and cold weather is no exception. ■

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