

# THIS IS ARMOR



# The Combat Arm of Decision



# THIS IS ARMOR





*Ride with the Armor & Cavalry*



## **THE UNITED STATES ARMY ARMOR BRANCH IS THE COMBAT ARM OF DECISION.**

*We are the premier mounted maneuver force comprised of the best trained, best led, best equipped, and most lethal Tankers and Scouts in the world. Soldiers first, we are experts in the art of maneuver warfare; mounted and dismounted reconnaissance and security operations; and the employment of combined arms and joint capabilities on the battlefield.*

*Armor and cavalry troopers thrive in conditions of ambiguity, uncertainty, and complexity; comfortable away from the main body -- out front or on the flanks -- and decisive when leading it. We operate with a mission command mentality always seeking opportunities to seize, retain, and exploit the initiative; creating and preserving freedom of action for our force while denying the enemy options.*

*Armor and cavalry leaders combine the superior capabilities of our equipment with the ingenuity of our Troopers to find, fix, close with and destroy the enemies of our nation through combinations of mobility; precise, lethal, and overwhelming firepower; and devastating shock effect.*

*Armor branch is a team of teams ready to fight and win anytime, anywhere, under any conditions of battle.*

## **FORGE THE THUNDERBOLT!**



*Thunderbolt 7*

*Thunderbolt 6*



**Army Information**

# **THIS IS ARMOR**

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# **FORGING THE THUNDERBOLT**



# *United States Army Armor School Fort Benning, Georgia*





# *United States Army Armor School*

## *Fort Benning, Georgia*



### *Mission*

The Armor School educates, trains, and inspires America's Armored Soldiers and Leaders for a lifetime of service to the Nation; prepared to close with and destroy the enemy by fire and maneuver as part of a combined arms team.



### *Vision*

***The Army's premier community. Training, supporting, and protecting the strength of the Nation; our Soldiers, Families, and Civilians.***

# DEVELOPMENT OF THE ARMOR INSIGNIA



**This original triangular Armor insignia was designed in 1918 and was worn by the World War I Tank Corps and subsequent tank units of the Infantry. The colors of the shoulder patch were blue for Infantry, red for Artillery, and yellow for Cavalry-the three basic components of Armor. The insignia symbolized the union of the three forces. The basic design and combination of colors remain in today's Armor insignia. In 1940, the superimposed figures, taken from the shoulder insignia of the 7th Cavalry Brigade (Mechanized), were added to the triangular design. The tank track stands for mobility and armor protection, the gun represents firepower, and the lightning bolt denotes shock effect. These triple characteristics of the tank are embodied in Armor's striking power.**

**Armor School:** The Armor shoulder sleeve insignia was originally approved on 21 October 1954. It was redesignated for The Armor School on 26 June 1956. The insignia was amended on 16 July 1957 to change the wording in the description of the tab. On 3 December 1964 the insignia was redesignated for the U.S. Army Armor School. The shoulder sleeve insignia was amended on 5 November 1970 to revise the design to make the insignia and tab one piece.



# THE ARMOR CHALLENGE

This is a time of significant change in the Armor Force. Not since we traded in our horses for Tanks have we made such significant and far reaching changes to our formations, training and leader development. However, regardless of ongoing changes, the enduring mission sets that have made Armor and Cavalry forces the “Combat Arm of Decision.” Armor Branch will always be an indispensable part of combined arms maneuver!

There are key and dynamic areas of change that currently impact the Armor Force as of Fiscal Year 2020 (FY20): Armor force is growing due to the FY19 conversion of a Stryker Brigade Combat Team (SBCT) to an Armored Brigade Combat Team (ABCT). In FY20, Recoding of Combined Arms Battalion CSM positions to MOS 19Z, and the development of the Next Generation Combat Vehicle (NGCV).

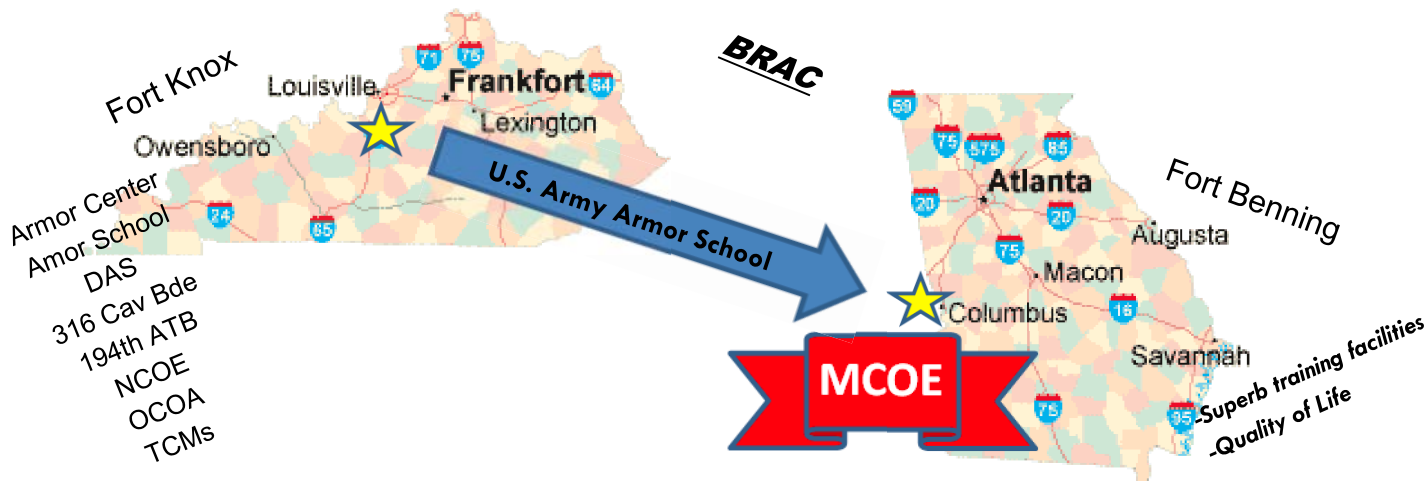
- Effective in Fiscal Year 2019 (FY19), the 1st SBCT of the 1st Armored Division was converted to an ABCT. In FY20, the 2d Infantry Brigade Combat Team (IBCT) of the 4th Infantry Division will be converted to an SBCT. Both, the new ABCT and SBCT will create additional Armor positions.

- During a 2017 FORSCOM-TRADOC review of SGM and CSM positions, a successful conversion of CAB CSM to MOS 19Z was implemented with MTOE documentation effective in FY20. This recoding of Armored formation leadership helps to ensure commanders have mounted maneuver force subject matter experts immediately available.

- During 2019, a Hard-Code Armor-Infantry Force Design Update (FDU), was submitted to convert officer 02B combat immaterial positions to 19A and 11A. Currently, there are no officer 19A coded positions within the Brigade Combat Teams at the rank of Major and above. If approved by HQDA, this FDU would create over 100 additional Armor field grade officer authorizations. This FDU will help ensure the correct officer is placed in critical positions for the leadership of our Armored force.



# THE MANEUVER CENTER OF EXCELLENCE



## Mission Statement:

The Maneuver Center of Excellence (MCoE) provides Trained, Adaptive, and Ready Soldiers and Leaders for an Army at War, while developing Future requirements for the Individual Soldier and the Maneuver Force, and providing a World Class Quality of Life for our Soldiers and Army Families!

The Base Realignment and Closure (BRAC) commission determined sweeping changes in selected Army installations with a completion date of 15 September 2011. One decision was that the United States Army Armor School would be moved in entirety to Fort Benning, Georgia. This action facilitated the integration of operations of both Armor and Infantry branches to establish the Maneuver Center of Excellence (MCoE).

As the Armor School left Kentucky, other organizations moved in to Fort Knox to include:

- 3d Brigade, 1st Infantry Division Brigade Combat Team (now deactivated)
- United States Army Human Resources Command
- United States Army Cadet Command
- Army Reserve Regional Training Command
- Louisville Army Reserve Center and 100th Division

### **What has Fort Knox transferred to Fort Benning?**

Military and Civilian Personnel

Abrams tanks, Bradley Fighting Vehicles, Strykers, Tactical Wheels, Small Arms, Simulators

Course Programs of Instruction (POI)

Soldier School Training

The National Armor and Cavalry Museum

*What the Maneuver Center of Excellence looks like at  
Fort Benning, Georgia.*



*Armor*



*Infantry*

**Trooper of the Plains Statue in front of Headquarters, Maneuver Center of Excellence**



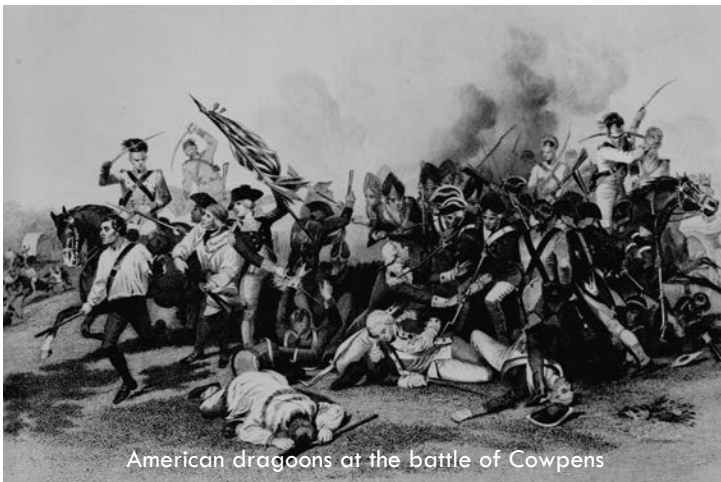
# The Heritage of Armor

## *The Horse Cavalry Heritage*

In the colonial era, America's mounted force consisted of militia mounted on horses to cope with Indian raids or serve with the British in their conflicts with the French in North America. In this early period the continent's heavily wooded terrain and small population limited the size of mounted units and the extent of their operations. During the Revolutionary War, a need emerged for permanent cavalry units to support the Continental Army. On 12 December 1776 the Continental Congress authorized the creation of the 1st Regiment of Light Dragoons. Authorization for an additional three regiments soon followed. Basic issue to each trooper included a coat, cap, leather breeches, and a pair of boots and spurs. Weapons consisted of a saber and flintlock pistol that each man provided for himself, while officers were further expected to supply their own mounts.

These dragoon units faced continuous problems in recruiting, finding suitable mounts, and securing supplies. Dragoons were intended to fight mounted or on foot, but their lack of a long range firearm made them vulnerable when dismounted. These problems led to the reorganization of the dragoons into legions, consisting of mounted dragoons and dismounted light infantry. Born of necessity, legions provided a more versatile battlefield force. They performed raiding, reconnaissance, screening, and foraging operations. Mounted militia units supported these activities through continuous attacks upon British supplies and outposts. In January 1781 dragoons played a central role in the destruction of British forces at the battle of Cowpens. This battle symbolized the growing effectiveness and potential value of a mounted force.

After the Revolutionary War, the dragoons disbanded. For the next fifty years, mounted units



American dragoons at the battle of Cowpens

were created only temporarily to cope with specific threats. Efforts to minimize military expenses and avoid unpopular taxation often left the fledgling U.S. Army with no cavalry at all in this period. Instead, volunteer mounted infantry operated on the frontier, although the War of 1812 witnessed the creation of a small cavalry force.

By the 1830s continued national expansion beyond the Mississippi River brought the United States into direct contact with the Plains Indian nations. Unlike the sedentary Indians encountered east of the river, the nomadic Plains Indians relied upon the horse for

mobility. To secure this ever-expanding frontier, the Army initially possessed few posts with only small garrisons of foot-mobile infantry and artillery. Therefore, in 1833 the Army organized the 1st Regiment of Dragoons. This unit's speed, mobility, and ability to fight mounted or dismounted made it ideal for frontier operations. However, the absence of cavalry doctrine forced the regiment to develop and train its own tactics. Expansion of the Army's mounted force soon followed, but confusion surrounding the role and purpose of cavalry plagued doctrinal and organizational development. Consequently, during the 1846-1848 Mexican War mounted forces were broken into small detachments to perform reconnaissance, pursuit, and administrative roles. In these limited functions, they performed well against the Mexican Army and earned a reputation for dash and vigor.

The war experience did not resolve the uncertainty over the function and composition of mounted units. In 1855, the Army added the 1<sup>st</sup> and 2d Cavalry Regiments to its mounted force, which now included an array of mounted riflemen, dragoons, and cavalry. Uniform doctrine and organization did not exist. Similarly, weapons varied among unit types. The new cavalry regiments, in particular, carried a variety of experimental muzzle and breech loading firearms.

# The Heritage of Armor

Nevertheless, the continuing westward expansion of the United States provided ample opportunities for the employment of mounted troops of all types. Scattered across the western plains, small detachments of dragoons, cavalymen, or riflemen escorted wagon trains, surveyed new territories, and served as a buffer between the Indian nations and the growing numbers of settlers. In the 1850s, two regiments also participated in the Army's unsuccessful effort to end violence in Kansas that occurred when the issue of slavery split the state's population into two armed camps.

The start of the Civil War in 1861 broke the integrity of the cavalry regiments. Many soldiers left their units to join the Confederate army. Initially, Union cavalry accompanied infantry divisions, operating in small numbers to provide details and escorts. Such dispersal nullified combat potential. Confederate cavalry, however, was organized in large formations and assigned at the corps and army level. It performed a variety of operations loosely categorized into raiding, reconnaissance, screening, pursuit, and delay. In addition Confederate cavalry also fought on the principal battlefields alongside infantry and artillery. Their larger size, versatility of mission, and aggressive, energetic leadership made Confederate cavalry far more effective than its Union counterpart in the first years of the war, despite nonstandard equipment that included an array of sabers, carbines, pistols, and shotguns. In 1862, for example, J.E.B. Stuart led a cavalry force that circumvented the Union lines, capturing prisoners, creating chaos in the enemy rear area, and securing information that helped shape the subsequent Seven Day's Battle. Following the battle of Shiloh, Confederate cavalry under the separate commands of Nathan Bedford Forrest and John Hunt Morgan helped stop a Union advance upon Chattanooga by continuously attacking the Union supply line and conducting sweeping raids through Kentucky. These actions also set the stage for the Confederate invasion of that state and the subsequent battle of Perryville. Similar cavalry raids against Union supply lines also temporarily halted Union operations against Vicksburg.

Union cavalry noticeably improved in 1863, when cavalry units were removed from infantry formations and grouped into divisions under a separate command. The creation of the Cavalry Bureau provided a central organization responsible for organizing and equipping cavalry units. These changes permitted Union cavalry to conduct raids of its own, symbolized by the Grierson Raid in which 1,000 troopers rode 600 miles through Confederate-held territory in Tennessee and Mississippi. In 1864 Major General Philip H. Sheridan became the principal influence upon Union Cavalry. He emphasized the creation of cavalry corps and independent operations. The larger organization possessed a formidable mix of firepower and mobility, enhanced further with the introduction of the Spencer Repeater, a seven-shot breech-loading weapon. Sheridan himself



demonstrated the power of the larger cavalry organization by leading a raid upon Richmond. In support of army operations, however, larger cavalry formations proved capable of independent action that could decisively influence the outcome of a battle. The actions of Union cavalry helped trigger and shape the pivotal battle of Gettysburg. Following the battle of Five Forks in April 1865, it was Sheridan's cavalry corps that blocked the Confederate army's retreat, captured its supply trains, and encouraged General Robert E. Lee's surrender at Appomattox Courthouse.

# The Heritage of Armor

The Civil War firmly established the basic cavalry missions of reconnaissance, security, economy of force, exploitation, pursuit, delay, and raid. The war also demonstrated the supremacy of firepower over the mounted charge. Cavalry units tended to use their horses for transport and fight dismounted, conducting mounted assaults only against surprised or broken forces. These same principles found widespread employment in the decades following the Civil War, especially during the numerous campaigns against Indian nations on the frontier.

The end of the Civil War resulted in a sharp decrease in the Army's size. Volunteers returned home at the same time the Army assumed responsibility for occupation of the ex-Confederate states and was called upon to intervene in labor disputes. In the West, expansion and settlement continued, which in turn triggered Indian resistance. Cavalry regiments again became the preferred means of providing security and stability throughout the western territories. Their combination of mobility and firepower made them more effective in dealing with the elusive and nomadic Plains Indians. However, the small numbers of mounted troops available to control a land mass that stretched from the Canadian to the Mexican border and from the Mississippi River to California resulted in regiments operating from multiple posts in squadron and troop-size increments.



Ceremonial Cavalry Charge, Fort Knox, KY (2009)

Cavalry soldiers, sometimes supported by infantry, sought to prevent violence between settlers determined to develop the West and Indian nations equally determined to resist encroachment upon their tribal lands. The Army became the principal tool for implementing the American government's reservation policy, which relocated Indian nations to designated areas protected from settlement. However, the harsh conditions of these reservations frequently triggered Indian resistance or efforts to avoid resettlement. The Nez Perce Indians, for example, attempted to flee to Canada rather than accept life on a reservation, necessitating a major military operation to apprehend them.

Despite their central role in eliminating Indian resistance, cavalry organizations labored under a number of handicaps. They remained tied to supply wagons, which sharply reduced their speed. Indian warriors exploited their own superior mobility to fight on their own terms. They proved elusive and difficult to fix in place long enough for superior Army firepower to prevail. Consequently, cavalry organizations began to rely upon Indian scouts to track and locate hostile forces. They also resorted to winter operations against Indian villages, which tended to remain in one location throughout the season. Through winter campaigning, many Indian nations surrendered after suffering devastating attacks by mounted forces in bitterly cold conditions.

In the Southwest, the Army faced a different Indian threat. There, warriors repeatedly left reservations to conduct raids before retreating to mountain hideouts. To apprehend these Indians, cavalry units utilized scouts to track the raiders and apply pressure upon them.

# The Heritage of Armor

Although contacts proved infrequent, the relentless pursuit tactics often forced the raiders to surrender, starve, or fight in unfavorable circumstances. In these campaigns, conducted under difficult conditions in an unforgiving climate, the 9<sup>th</sup> and 10<sup>th</sup> Cavalry Regiments played a prominent role. These regiments were composed of African-American soldiers and noncommissioned officers led by white officers. Their habit of wearing buffalo robes earned them the nickname “Buffalo Soldiers”.

For many soldiers service on the frontier was characterized by long periods of boredom and inactivity punctuated by short bursts of intense action and combat. On campaign, complacency and overconfidence, however, proved almost as dangerous as the enemy. In 1876, the 7<sup>th</sup> Cavalry Regiment sought a rapid conclusion to operations against the Sioux and Cheyenne in Montana. Noted for its dash and aggressiveness, the regiment finally located its quarry and immediately prepared to attack. Without waiting for infantry or artillery support from supporting columns, and without effectively determining the strength of the opposition, the unit attacked. It soon found itself fighting for survival against an unprecedented concentration of over 2,000 warriors. The ensuing battle of Little Big Horn resulted in the destruction of over half of the regiment, including its commander.

Despite this victory, the Indian nations could not stop the expansion of the United States. By the 1890s the frontier had closed and the Indian wars had come to an end. Cavalry units, however, continued to find employment as the nation began to transform into a global power. They fought in the Boxer Rebellion in China, the Spanish-American War, and the Filipino Insurrection. In these conflicts, mounted units faced the conventional forces of Spain, Filipino guerrillas, and the fanatical Boxer mobs intent on killing foreigners. However, cavalry units also provided humanitarian assistance to San Francisco in the wake of the great earthquake and fire of 1906, and they assumed occupational duties in Cuba.

These experiences shaped cavalry development, encouraging greater reliance upon modern firepower, maneuver, and rapid mobility. The principal weapon became a .30 caliber, magazine-fed rifle that used smokeless powder. Drill and service regulations underwent improvements, and new organizations were tested. Machine gun platoons also joined cavalry regiments. Symbolic of the growing importance of cavalry to the Army, permanent mounted divisions and brigades were also established.

In 1910 border unrest resulted from the outbreak of civil war in Mexico. Multiple factions vied for power and sought international support, including American aid. In 1916, the conflict spilled over the border when Pancho Villa, the leader of an anti-American faction, attacked Columbus, New Mexico. The United States responded by sending a 5,000-man column into northern Mexico after the raiders. The column included cavalry, trucks and aircraft to support ground troops. This action became known as the Punitive Expedition. After a pursuit over rugged terrain reminiscent of similar operations conducted during the Indian Wars, the column successfully launched a surprise attack upon Villa and his supporters.



Better known as Old Bill, this 1898 drawing of a trooper in the 3d Cavalry Regiment became an icon for the mounted branch

# The Heritage of Armor

The Punitive Expedition marked the last major action of American horse cavalry. It played only a minor role in World War I. However, the horse cavalry continued to modernize and experiment with new ideas and tactics. Cavalry leaders sought to retain the battlefield relevance of their branch amid an array of new technologies. In the 1920s and 1930s horse cavalry units incorporated a growing pool of motor vehicles for reconnaissance and logistical purposes and increased the number of organic automatic weapons. The horse was retained because no vehicle could yet match its cross-country mobility. Cavalry doctrine stressed the importance of operating in small, dispersed groupings. Coordinating the actions of these groups posed a challenge that encouraged increased use of the radio. In response to the growing threat of armored vehicles, the horse cavalry pioneered antitank tactics based upon firepower, depth, and mobility to channel and destroy enemy tanks. With the development of reliable armored fighting vehicles and the need for heavier weapons to defeat them, however, horse cavalry ceased to be a competitive force on the battlefield. World War II marked the final replacement of the horse with vehicles, and mechanized cavalry replaced the horse cavalry.



6th Cavalry River Crossing, June 1941

## ***The Tank Corps***

The onset of World War I in 1914 found the belligerents sharing expectations of a quick war. However, by year's end the German offensive into France had been halted along the Marne River by British and French forces. The combatants began entrenching and the conflict on the Western Front devolved into a war of attrition. Maneuver disappeared as the machine gun and ever-increasing masses of artillery drove the Soldier into elaborate trench networks. Offensives intended to breach these trenches often failed with heavy loss of life because of the advantages artillery, machine guns, and fortifications gave to the defender. Attacking troops that managed to reach the enemy's trenches suffered high casualty rates and breakdown of unit cohesion. They also found that they had overextended their artillery support and were vulnerable to counterattack.



# ***The Tank Corps***

After repeated futile assaults on German positions the British and French armies sought a technological solution to the trench deadlock. In Britain, Lieutenant Colonel Ernest D. Swinton developed the idea of a tracked armored vehicle that could deliver firepower directly upon the German trenches while protecting its crew from machine gun fire. He envisioned such a vehicle first reducing the defenses prior to the infantry's assault and then providing continuous fire support to the Soldiers once they had secured the trenches. Inspiring Swinton's vision of the tank was his observation of the American-made Holt caterpillar tractor moving through mud with relative ease in its role as a heavy gun tractor. Swinton found support for his vehicle from First Lord of the Admiralty Winston Churchill. With Royal Navy backing, development of the vehicle began amid great secrecy. Initially, the new vehicle received the designation "water tank" to confuse enemy agents. Later this designation was shortened to "tank" and the term remains in use to this day.



LTC Patton in 1918

The first British tanks intended for combat possessed a rhomboidal shape, two sets of tracks on the outside of the hull, and side turrets (sponsons) that carried either machine guns or 2-pounder guns. The tank made its combat debut during the British Somme offensive of 1916. Nearly 50 of the new vehicles were deployed to support the ongoing offensive, but only 18 actually passed through friendly lines and engaged the Germans. The rest succumbed to mechanical failure. Those tanks that did keep running provided invaluable experience that shaped subsequent doctrine and training development. Their presence on the battlefield panicked German soldiers, who found themselves helpless against a metal monster seemingly impervious to their weapons. Henceforth the psychological impact of the tank upon infantrymen became a factor in the tank's employment.

During the British Cambrai offensive of November 1917, tanks played a key role. Nearly 400 spearheaded the assault and rapidly breached German defenses in the first large-scale use of armor. Unprepared for the tank onslaught, resistance disintegrated, and the British found themselves moving into the open country behind the German trenches. This unprecedented success on the Western Front demonstrated the tank's value and spurred further development. The French, too, developed a tank force to provide direct support to infantry alongside the vehicles.

Tank operations attracted the attention of the United States Army. Following American's entrance into the war, the Army organized the Tank Corps to form and train American tank units. Colonel Samuel D. Rockenbach became chief of the new organization and served on the American Expeditionary Force staff as adviser on all tank matters. Lacking tanks and doctrine the Tank Corps borrowed from the French and British. While the British favored the use of tanks to crush resistance in advance of the infantry, the French used light tanks to accompany and support the infantry. American Tank Corps doctrine adopted both concepts, although the absence of heavy tanks resulted in the use of the light, 6-ton Renault FT-17 in both roles. The French-built Renault tank featured a 2-man crew, a 37-mm gun, and a top speed of 5 miles per hour. Its poor mechanical reliability led to its movement to and from the battlefield on rail cars and truck transporters. Nevertheless, the FT-17 became America's first battle tank. It featured a configuration that became standard for most subsequent tank designs: a main armament in a revolving turret, driver's position in the front hull, engine in the rear hull, and a fully tracked suspension system. Large numbers of these tanks participated in the American offensives at St. Mihiel and the Meuse-Argonne, disrupting the German defenses and supporting infantry attacks. A small number of Americans also served in heavy tank units on the British sector of the front.

# The Tank Corps



French FT-17 Machine-Gun (Hotchkiss Mde 1914, 8MM) Light Tank at the Macon Road Tank Detachment, Columbus, GA, Circa 1919.



M-1917 modeled on the FT-17, the 6-ton Light Tank was the most numerous tank in the US Army throughout the interwar era, despite its fragility. It could be immobilized by a crowbar.

American tank production focused upon a new design crafted by Ford Motor Company and a US-built version of the FT-17. The Army also pursued development of a heavy tank design with the British. Designated the Mark VIII, it incorporated British armor and armaments and the American Liberty aircraft engine. However, Liberty engine production remained slow, and those built went to meet Air Corps needs. No Mark VIIIs were completed by war's end, and in fact no American-built tanks entered combat. Lack of tank design experience, overly complex coordination between the Army and industry, and shortages of critical components contributed to exceptionally slow production. However, the lessons learned from these early efforts at tank design would be applied during the industrial mobilization for World War II.



Photo courtesy of the Patton Museum, Fort Knox, Kentucky

The Mark VIII heavy tank was the first international effort to build a tank. Completed too late For to see combat in WWI, it remained with the US Army until declared obsolete in 1932. the individual

tanker, service in the Tank Corps offered a mix of hardship and opportunity. Tanks represented a new approach to warfighting, but the nature of the early tanks posed difficulties for their crews. The tanks used by the Tank Corps proved prone to mechanical breakdown, necessitating constant work by their crews. Consequently, tankers became known as "rude mechanicals." In combat, tanks routinely operated with hatches closed. The resultant claustrophobic effect was unrelieved by poor visibility, the combination of engine and cordite fumes, and temperatures exceeding 100-degrees Fahrenheit. Crews carried ammonia ampoules to revive Soldiers who fainted. Despite the armor plating—little more than steel bolted onto a frame—small arms fire could still generate a spalling shrapnel effect on the tank's interior. To protect against this danger, heavy tank crews often wore a chain mail headpiece and slung chains on the inside of the vehicle to deflect metal shards.

# ***The Tank Corps***

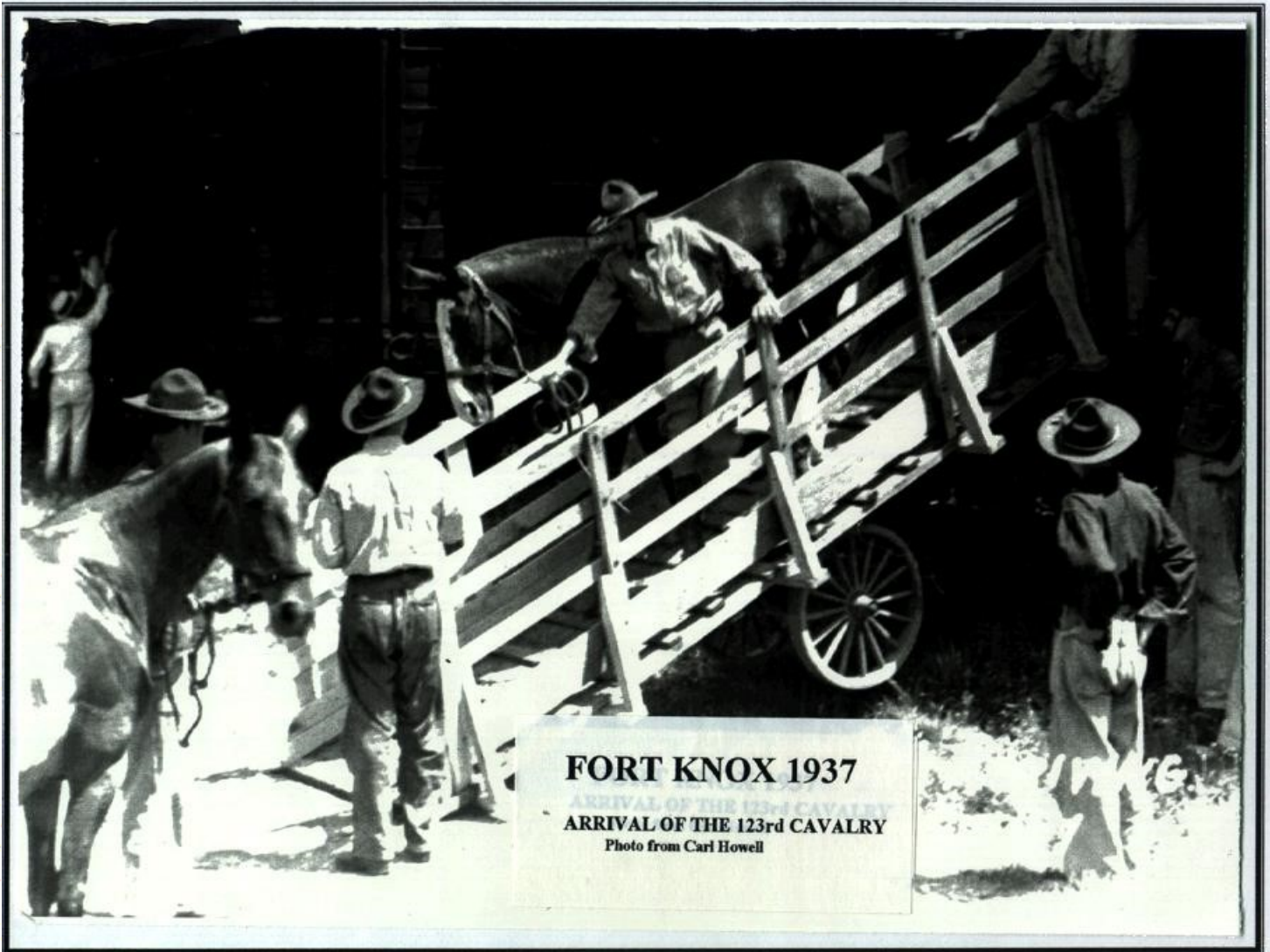
Effective command and control proved impossible. Tank commanders relied upon hand signals, flags, and pyrotechnics, but these measures could not be used once the tank buttoned up for battle. Hence, formations broke down and unit cohesion collapsed. Communication with distant headquarters generally occurred via assigned runners or carrier pigeons. Unfortunately, the pigeon cages often did not survive combat, crushed in the heat of battle by tank gunners intent upon engaging hostile targets. Without an effective means of coordination, the neat tank formations at an attack's start degenerated into a gaggle of vehicles blundering about the battlefield engaging targets of opportunity until they broke down or were knocked out. The employment of large numbers of tanks partially offset these problems. Moreover, despite the tactical limitations of tanks, they continued to attract willing crew members and became an important asset in the Army's arsenal.

## ***Redefining the Tank's Role in the Interwar Era***

After the war, Congress restructured the Army based upon a review of its wartime actions. The National Defense Act of 1920 resulted. It defined the Army's organization and operation throughout the interwar period, and it abolished the separate Tank Corps. The tank's wartime infantry support role suggested its alignment with the dismounted branch. Therefore, the Infantry received exclusive responsibility for developing new tank designs and the related training and doctrine. While the 1920s would witness significant innovation in tank usage by other nations, American tank development occurred within the relatively narrow confines of the Infantry mission of seizing and holding ground.

The Infantry developed the tank as one of several support weapons for the rifleman. In particular, it sought the close integration of tanks and infantry at the small unit level. This capability suited infantry needs and constituted an important role for the tank. In the early 1920s Rockenbach continued to lead the tank force. He supported efforts to build a more powerful and reliable medium tank. However, prototype models tended to be too heavy, and the desired balance of firepower, mobility, and protection proved beyond the technology available. This failure coupled with the Army's interest in fighting a war of maneuver rather than trenches shifted tank design emphasis to light, fast tanks that leveraged major advances in suspension, track, and engines.

British experimentation with the use of tanks in multiple roles finally prompted similar testing in the United States. Between 1928 and 1931 the Army created two experimental units that mixed tanks with other combat and support elements. Each one comprised a motley collection of vehicles and weapons with limited tactical value. However, the experience acquired by these organizations prompted Army-wide discussion of new roles and tactical organizations for the tank. The notion of a separate mechanized arm emerged, but in the absence of additional funding and personnel, the Army could only create such a force by diverting resources from the existing combat arms. This course of action met with resistance that intensified with the Great Depression's onset and Congressional unwillingness to increase military spending.



**FORT KNOX 1937**

ARRIVAL OF THE 123rd CAVALRY

Photo from Carl Howell

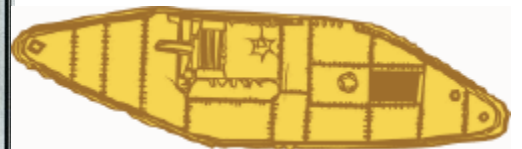
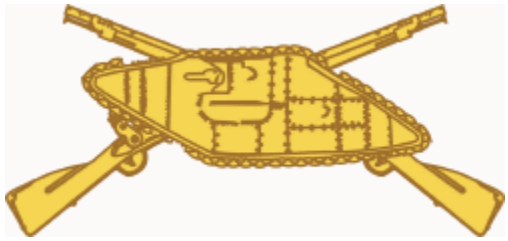
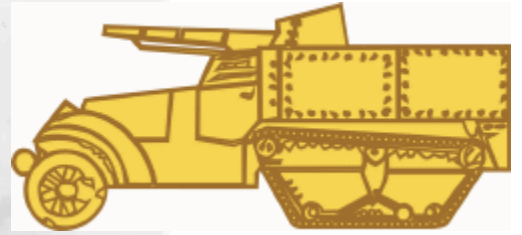
# ***Redefining the Tank's Role in the Interwar Era***

The impasse between creating a new mechanized arm and resourcing it was resolved in 1931 by Army Chief of Staff General Douglas MacArthur. In a new mechanization policy, he directed the combat arms to pursue separate mechanization efforts using their own resources. No longer would each combat arm face the specter of losing funding and personnel to a rival organization. This decentralization proved less efficient than the centralized mechanized programs of Germany and Russia, but MacArthur's policy ensured that the Army would adopt mechanization rather than be threatened by it.

The new mechanization policy had little effect on Infantry tank development, but it permitted the Cavalry to begin experimenting with tank usage. Throughout the 1920s, the mounted arm had had to limit its interest in motor vehicles to armored cars, which proved mechanically fragile and road bound. In 1931, however, the Cavalry established the 7<sup>th</sup> Cavalry Brigade (Mechanized). Initially little more than a paper organization, the brigade included the 1<sup>st</sup> Cavalry Regiment (Mechanized). This unit exchanged its horses for vehicles, and relocated from the Texas border to Fort Knox, Kentucky, in 1933. This post was one of the largest in the United States, but other than summer training by National Guardsmen and reservists, it lay unused. With the arrival of the 1<sup>st</sup> Cavalry, Fort Knox began its long association with mechanized development.



Fast and mobile, this M2A4 Light Tank represented the emphasis given to mobility. Its chassis served as the basis for the later M3 Light Tank.



# ***Redefining the Tank's Role in the Interwar Era***

The 1<sup>st</sup> Cavalry initially served as a tactical laboratory to help determine the optimal organization, doctrine, and materiel for a cavalry organization built around vehicles. Through maneuver participation, field exercises, and analysis, its personnel evolved the unit into a flexible organization, capable of performing the full range of Cavalry missions. By the mid-1930s, the regiment had been joined at Fort Knox by the 13<sup>th</sup> Cavalry Regiment (Mechanized) and attachments of artillery and engineers. Collectively, these forces transformed the 7<sup>th</sup> Cavalry Brigade (Mechanized) from a paper organization into a powerful, combined arms force. Tanks assigned to this unit received the designation “combat cars.” This nomenclature change ensured that the mechanized cavalry adhered to the letter of the National Defense Act of 1920 and left the Infantry’s exclusive responsibility for tanks unaltered.

Cavalry doctrine envisioned mounted elements operating in small groups dispersed over a broad frontage. To offset the vulnerability of small numbers of tanks operating alone, they were supported by troopers, engineers, and mortar teams. Continued experimentation and field exercises led to the integrated action of these elements and the beginnings of a modern American combined arms tactical doctrine. Rapid movement of these teams reinforced Cavalry emphasis upon outmaneuvering the enemy rather than engaging in sustained and costly firefights. Hence, mobility and speed became critical attributes. In armored vehicle design, the mechanized cavalry consistently opted for speed and mobility over firepower and armor protection. Organizational and tactical concepts that slowed operational tempo were discarded.

In its efforts to coordinate the actions of multiple fast-moving combined arms teams, the 7th Cavalry Brigade (Mechanized) revolutionized command and control procedures. Visual signals and wire-based communications proved too slow to facilitate rapid decision making and sustain the high operational tempo desired. Therefore the mechanized cavalry embraced widespread radio usage. It established radio nets that conformed to a unit’s tactical organization, and abandoned the Army’s rigid emphasis upon encoded transmissions. Before a mission began, key participants were briefed on the overall objectives and their specific tasks. When operations began, subordinate leaders received short radio messages sent in the clear to update them on changing conditions. While these transmissions might be intercepted, mechanized cavalry personnel believed that rapid communication coupled with fast action outweighed potential security risks. Moreover the cryptic nature of radio traffic provided a degree of signal security, since an opponent lacked the context of the mission order. The pioneering efforts of the 7<sup>th</sup> Cavalry Brigade (Mechanized) at Fort Knox marked the introduction of mission-type orders and fragmentary orders (FRAGOS) into the Army.

In maneuvers and field exercises the mechanized cavalry discovered that it could increase its battlefield effectiveness by altering the composition of its combined arms teams to meet changing tactical conditions. The 7th Cavalry Brigade (Mechanized) and its subordinate regiments rarely operated as a single mass. Instead, they operated as a collection of combat teams, each one organized according to their objective, expected enemy resistance, and terrain. The composition of these teams changed according to the tactical situation and gave the mechanized cavalry a high degree of organizational flexibility. Task organization marked a departure from the Army’s traditional reliance upon rigid tactical groupings and marked the foundation for the later World War II-era combat command.

# ***Redefining the Tank's Role in the Interwar Era***

A principal player in these developments was Adna R. Chaffee, Jr. an outspoken advocate of mechanization in the interwar years. Commissioned in the Cavalry, he served on the American Expeditionary Forces staff in World War I. Afterward, he became an instructor at Fort Leavenworth's Command and General Staff School and attended the Army War College. In 1927 Chaffee became a staff officer in the G3 Section of the War Department General Staff, where he became immersed in the study of tanks. Through a personal friendship with the American military attaché to Britain, he acquired accurate information regarding the latest British mechanized developments. In the 1930s, he became closely associated with mechanized cavalry development, commanding the 1<sup>st</sup> Cavalry and later the 7<sup>th</sup> Cavalry Brigade (Mechanized). In 1940, he became the first chief of the Armored Force, shaping the nature of American future armored doctrine before his death in 1941.

Chaffee commanded the 7<sup>th</sup> Cavalry Brigade (Mechanized) during the First Army maneuvers of 1939. This event demonstrated how a fast-moving mechanized force could decisively influence a battle. The critical action occurred when the unit conducted a sixty-mile night road march under blacked-out conditions to launch a dawn flanking attack. The brigade burst into the rear area of the opposing force, creating sufficient mayhem to trigger the end of the maneuvers. Within days of the maneuvers' conclusion, Germany invaded Poland. The high profile use of combined arms formations in that campaign served to vindicate the tactical ideas developed by the 7<sup>th</sup> Cavalry Brigade (Mechanized) and spurred efforts to expand that unit into a mechanized division. Increasing the Army's mechanized might, however, suffered from lack of funds and materiel. Only small numbers of new combat vehicles were produced before 1939. Numerically, the most significant vehicle in the Army's inventory remained the Mark VIII heavy tank and an American version of the FT-17, both dating from World War I and obsolete. The inability to secure newer tanks in quantity led one tank officer to conclude: "The best solution for the present mechanized means for the US Army is to get the biggest transport we have, load it all on it, and dump it into the middle of the Atlantic Ocean." However, the interwar years did witness steady improvements in the reliability and durability of tracks, engines, and suspension systems. By 1939, the prospect of another war in Europe led the Army to order the production of over 300 M2A4 light tanks equipped with 37-mm guns. For mechanization, this action signaled the end of the Great Depression's lean years.



*1st Cavalry Division,*

*Fort Bliss, TX*

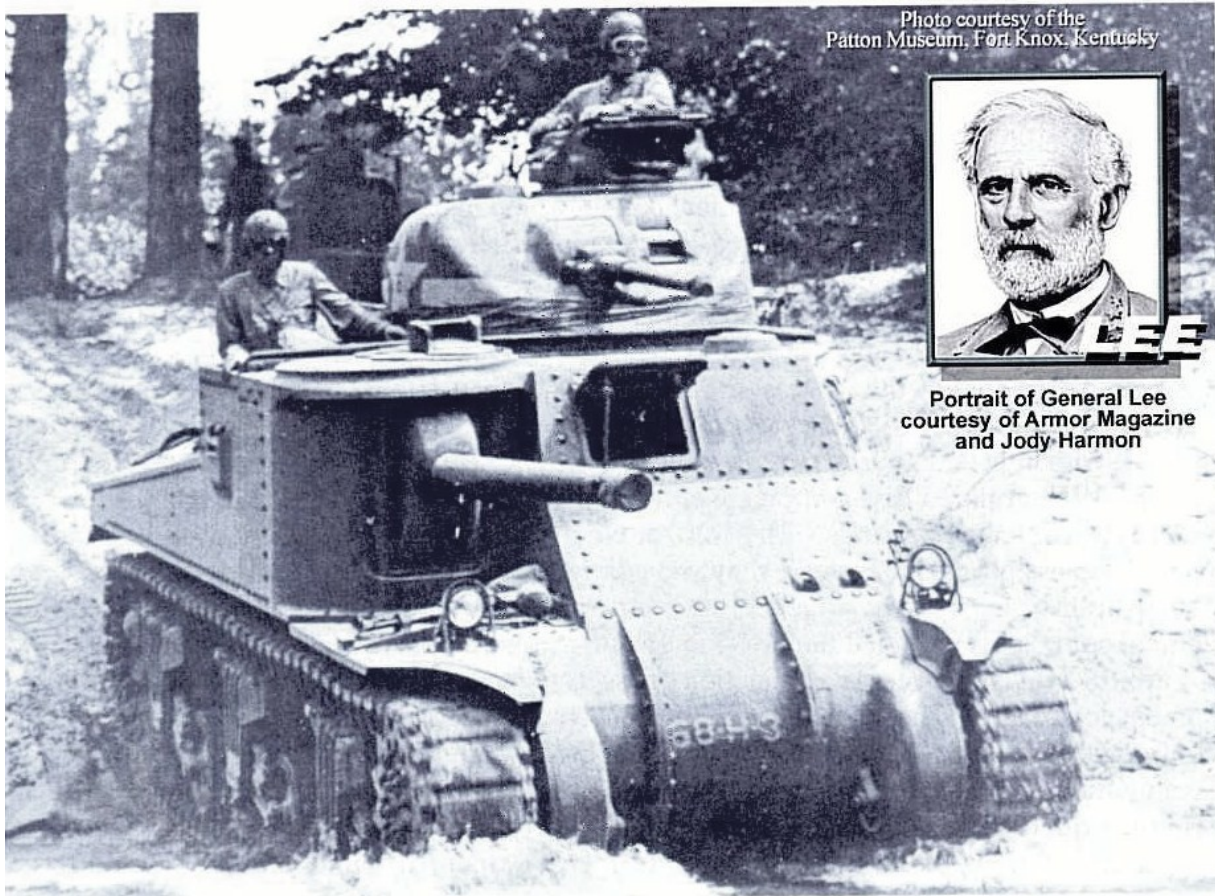
1941



# Armor on Fort Benning



# THE ARMORED FORCE AND WORLD WAR II



Germany's invasion and defeat of France prompted American efforts to mount a 75-mm gun on a tank. American tanks had not carried such a large armament, and a major turret design was required. As an interim vehicle, the M3 Medium Tank was built, carrying a 75-mm gun in the hull and a 37-mm gun in its turret. The hull weapon had a limited traverse, requiring the vehicle to move to engage each new target.

On 10 May 1940, German armored formations spearheaded an invasion of France, triggering that country's surrender within six weeks. This conquest shocked the American Army, which had held the French military in high regard. However, through the efforts of the American military attaché staff in Berlin, headed by Major Truman Smith from 1935-1939, the US Army possessed considerable information regarding the organization and operation of the German panzer division. After France's defeat, German armored trends became the standard of comparison for American mechanized development. The absence of American armored divisions and corps fueled interest in merging mechanized cavalry and infantry tank development under a single organization. The War Department responded by establishing the Armored Force on 10 July 1940. This organization bore responsibility for building a credible American armored capability. Fort Knox, home of the mechanized cavalry, became the location of the Armored Force's headquarters. Infantry tank units and the 7th Cavalry Brigade (Mechanized) merged to form the 1st and 2d Armored Divisions and the separate 70th Tank Battalion.

# THE ARMORED FORCE AND WORLD WAR II

The Armored Force reflected the influence of the mechanized cavalry. Chaffee was selected as the first Chief of the Armored Force, and other officers with cavalry or mechanized cavalry backgrounds served in key command positions. Consequently, the Armored Force stressed maneuver and speed in its operations. Armored divisions would envelop the enemy and engage soft targets in his rear rather than engage in deliberate assaults upon his strongest positions. Tank versus tank combat was to be avoided if possible, since it wasted armored resources in costly firefights. The Armored Force also assumed responsibility for organizing and training separate tank battalions for infantry support, though its initial focus lay upon the more powerful armored divisions and corps.

The Army embarked upon a major expansion of its mechanized capability simultaneous with implementation of Selective Service and widespread efforts to improve combat readiness. It took time to train the new armored formations, manned as they were largely with soldiers and officers unfamiliar with mechanized operations. Consequently, large-scale maneuvers late in 1941 did not showcase a mature Armored Force capable of emulating German successes abroad. Instead, armored operations demonstrated the steep learning curve facing mounted Soldiers of all ranks. Poor tactical decisions resulted in unsupported tank attacks upon towns, fortified positions, and antitank guns with consequent high loss. Reconnaissance became noticeable by its absence, while logistical, air defense, and traffic management issues underscored the complexity of maneuvering combined arms mobile divisions. However, the maneuvers provided invaluable experience in the integration of artillery, infantry, engineers, and tanks.

During the course of the war, the Armored Force grew from its initial 2 to 16 armored divisions. Much of this expansion occurred in 1941 and 1942, years in which the Armored Force worked to establish an effective training base and develop optimal organizations for mounted units. The division became the primary focus of this attention. It became the largest American armored formation fielded in World War II, despite early interest in creating an armored corps. The division underwent continuous modification until the establishment of a permanent structure in September 1943. Basic components included three armored battalions, three armored infantry battalions, three artillery battalions, one engineer battalion, one reconnaissance battalion, one medical battalion, and one maintenance battalion.

The size of the division reflected the Armored Force emphasis upon organizational flexibility and deployability. Deliberate efforts were made to keep the formation from becoming too bulky or unmanageable. To facilitate command and control, the new division dispensed with rigid brigade and regimental headquarters. Instead, it relied upon subordinate combat commands that possessed a permanent staff but no fixed troop assignments. They were assigned units according to their mission, and their composition changed with the tactical situation or the division commander's intent. Each combat command in turn organized its assets with up to four task forces, similarly flexible in their structure and operation.

Exploitation of the combat command concept initially suffered from a shortage of officers familiar with combined arms operations and comfortable with the absence of organizational rigidity. Armor officer training therefore focused upon fundamentals to ensure a basic competency level. Standard combat command organizations and solutions for "typical" tactical situations provided essential guidance, but too often they became rigidly applied in combat theaters. A deeper understanding of combined arms operations and the utility of the combat command structure tended to occur only as a result of combat experience. The Army did not truly possess a combined arms culture when it entered the war, but it recognized the importance of combined arms action by war's end.

# THE ARMORED FORCE AND WORLD WAR II



**STUART**

Photo courtesy of the Patton Museum, Fort Knox, Kentucky.



The M3 Light Tank became the American tank in the early years of WWII. Noted for speed, mobility, and reliability, it symbolized the Armored Force's early emphasis upon speed and maneuver over firepower and armor.



**CHAFFEE**

Photos courtesy of the Patton Museum, Fort Knox, Kentucky.



The M24 Light Tank entered service in December 1944. It represented a significant improvement over the M3/M5 Light Tanks that it replaced. Popular with its crews, its 75mm gun was initially designed for aircraft use, proving only of limited utility against heavily armored targets.

# THE ARMORED FORCE AND WORLD WAR II

The fighting around Arracourt in September 1944 represented a high point in this learning curve. The battle was part of the Lorraine Campaign in which the German LVIII Panzer Corps mounted a series of counterattacks to stem the avalanche of Allied troops that had poured across France following their breakout from the Normandy beachhead. The principal fighting involved elements of the 4th Armored Division led by Lieutenant Colonel Creighton Abrams. The flexible organization and combined arms nature of this formation permitted it to attach and detach units as necessary to meet enemy threats. This flexibility allowed US forces to employ combined arms teams to outmaneuver and outfight German forces equipped with superior tanks whose frontal armor could not be penetrated easily by American tank guns. The 4th Armored Division shifted forces as much as 8 to 10 kilometers to meet German probes. American forces also launched local attacks wherever possible against flanks and weak points thereby retaining the element of surprise. The battle concluded with the repulse of the German attack and the destruction of two entire panzer brigades at a cost in materiel of only 21 American tanks.

The Armored Force focus upon developing and fielding armored divisions resulted in less attention devoted to the separate tank battalions intended for infantry support. These armored units were not permanently assigned to infantry formations and had few opportunities to train with riflemen. Many tank battalions were broken into company teams and assigned to support different infantry units. Tank-infantry coordination thus became a battalion and company commander's problem, made worse by the early lack of doctrine for the operation of tanks in urban and complex terrain. In the Normandy hedgerows, for example, the close terrain reduced engagement ranges and forced the employment of tanks in small groups rarely larger than a company and more often a platoon or section. Communication between tank units and supported infantry too often degenerated into a company commander banging on a tank commander's hatch. The need for better communications between tanks and infantry resulted in tanks being equipped with a field phone on the outside rear of the vehicle. This permitted a direct link between infantry and tank commanders. To facilitate tank movement through hedgerows, many benefited from the attachment of steel prongs made from German beach obstacles.

The tanks that equipped armored units reflected the intended role of the armored division. This formation was designed to envelop enemy positions and operate throughout an opponent's rear area. Tank designs therefore emphasized maneuver and mobility over firepower and armor protection. Indeed, light tanks constituted much of the tank strength of the early armored divisions. The M3 light tank (Stuart), later upgraded to the M5, carried a 37-mm. gun, could achieve tactical speeds of 35 miles per hour, and proved easy to maintain. However, as the war progressed and the armor and armament of German tanks and self-propelled guns increased, the light tank became increasingly vulnerable. It became relegated to reconnaissance and security roles, and its numbers within the armored division fell in favor of more medium tanks.

The M4 medium tank (Sherman) became the principal American tank of World War II. Over 70,000 were built during the war, equipping both American and Allied armies. Like the M3/M5 light tanks, it proved mechanically reliable and mobile. It became the workhorse of the US Army, providing close infantry support, spearheading armored attacks, performing antitank missions, and acting as auxiliary artillery. However, its 75-mm main gun lacked sufficient armor-piercing ability, and it sacrificed firepower and armor for greater mobility. Even when

# THE ARMORED FORCE AND WORLD WAR II

upgraded to a 76-mm, the M4's armament could not penetrate the frontal armor of the more heavily armored German tanks and assault guns. Standard tactics for a five-tank platoon engaging German Tiger and Panther tanks required one section to draw the Germans' fire, while the other section maneuvered to the flank and engaged the German tanks from the side or rear. Such tactics were not morale builders for tank crews. Nor could the M4's armor protect it from the high velocity 75-mm and 88-mm guns commonly carried on German tanks. In such engagements, American tank units relied upon support from aircraft, artillery, and tank destroyers. Efforts to field a more powerful tank finally resulted in the M26 (Pershing) Heavy Tank, but only 20 entered combat before the war's end. For most tank units, combined arms tactics became vital to success against German armor.



Portrait of General Sherman courtesy of Armor Magazine and Jody Harmon

The M4 Medium Tank was the most manufactured American tank during WWII. Its principal assets were mobility and reliability, the exact attributes required to implement Armored Force doctrine. Unfortunately, its gun and armor were inferior to the German Tiger and Panther tanks with which it did battle.

Although the Armored Force considered the German Army its principal opponent, tank operations also occurred throughout the Pacific Theater of Operations. During the initial Japanese invasion of the Philippines in 1941, the 192d and 194th National Guard Tank Battalions formed the Provisional Tank Group and became the first American tank units to enter combat. They conducted a series of freewheeling counterattacks against Japanese forces to cover the American withdrawal to Bataan. The Tank Group was finally forced to surrender in April 1942 along with the remaining survivors of the American Philippines garrison. When the United States began its island-hopping campaign across the Pacific Ocean, tank units participated in nearly every operation. Several such units belonged to the Marine Corps, and they developed and practiced effective close support tactics in conjunction with Marine riflemen. Tank firepower helped to neutralize Japanese machine gun nests, while flamethrower-equipped tanks proved exceptionally effective in destroying bunkers and fortifications.

# THE ARMORED FORCE AND WORLD WAR II



1941 Aerial View

***Extract from letter written by GEN Patton to son, Cdt Patton, 6 June 44:***

*“To be a successful soldier you must know history. Read it objectively—  
...What you must know is how man reacts. Weapons change but man who uses  
them changes not at all. To win battles you do not beat weapons—you beat  
the soul of man of the enemy man.... You must read biography and especially  
autobiography. If you do it you will find that war is simple. Decide what will  
hurt the enemy most within the limits of your capabilities to harm him and  
then do it. TAKE CALCULATED RISKS. That is quite different from being  
rash. My personal belief is that if you have a 50% chance, take it because the  
superior fighting qualities of American soldiers led by me will surely give you  
the extra 1% necessary.”*



**WORLD  
WAR  
II**



A break in the action provides a good time for pulling maintenance. Dog Company, 761st Tank Battalion before they left England for combat. (27 September, 1944 Wimbourne England)



# THE ARMORED FORCE AND WORLD WAR II

Mechanized cavalry also served in large numbers in World War II, but their nature and composition differed from the general purpose organization represented by the interwar 7<sup>th</sup> Cavalry Brigade (Mechanized). Instead, mechanized cavalry groups and squadrons provided reconnaissance at the corps and division levels. These units were optimized for stealthy reconnaissance and lacked combat power. These characteristics reflected their Cavalry alignment. The Armored Force assumed responsibility for mounted maneuver combat actions, leaving reconnaissance as the primary function for mechanized cavalry units. Unfortunately, once deployed, they were often thrust into a much broader range of missions, requiring considerable improvisation. Mechanized cavalry units included a collection of armored cars, light tanks, jeeps, and half-tracks. These platforms generally proved weak in armor protection and antitank capability, although they performed effectively against non-tank targets. Despite their light nature, mechanized cavalry organizations proved versatile and served in every major campaign from the Normandy landings to the conquest of Germany.



When the war ended, armored organizations had demonstrated their value in every theater in which American forces fought. The armored division constituted a powerful, mobile combined arms mix. Its organizational flexibility, combat power, high operational tempo, and command arrangement ensured it a place in the postwar Army. The tank was considered the optimum antitank system, and its versatility led to the abolition of specialized tank destroyer units and the emergence of the main battle tank concept. Conversely, the mechanized cavalry experience revealed a universal desire for more effective reconnaissance organizations and equipment that would ultimately result in the creation of the armored cavalry regiment and more robust divisional cavalry squadrons.



Tank maintenance in Belgium, 1944

# THE ARMORED FORCE AND WORLD WAR II

August 1944



Silver Star awarded by LTG George S. Patton, Jr., to Private Ernest A. Jenkins.



1st Armored Division (November 1942)



M4 medium tank heading for Nancy, France 1944

# Constabulary to Cold Warrior

The years immediately after World War II were marked by efforts to analyze the wartime experience and incorporate lessons learned into mounted maneuver training, organization, materiel, and doctrine. In 1946 Fort Knox hosted the first of many annual conferences dedicated to armor issues. Future development, however, hinged upon the creation of a permanent armored branch. The Armored Force had been created by the Army leadership in World War II as a “service test” to permit the rapid creation of the mechanized forces considered necessary for the war effort, but the organization lacked the legal foundation found of the other combat arms. Hence, Army leaders now focused upon the creation of a permanent branch, its impact, and whether it would include the Cavalry. In 1948, the Patton Museum of Cavalry and Armor opened on Fort Knox to train and educate Soldiers. Its name reflected both a desire to honor General George S. Patton Jr. and the uncertain branch status. Similarly, the Cavalry Journal became the Armored Cavalry Journal.

In 1950 the Army Organization Act resolved the branch question. Under this legislation, a single Armor Branch emerged to govern both tank and cavalry development. A separate Cavalry branch ceased to exist. A single command now bore responsibility for the development of armored formations, separate tank battalions, and cavalry units. The Armored Cavalry Journal became Armor and the branch’s birthdate became 12 December 1776 to reflect its combined cavalry and armored heritage.

The years following the end of World War II provided a different type of challenge for mounted maneuver organizations. In Europe, the Army found itself responsible for governing a large section of Germany and Austria. The war-induced chaos in these areas coupled with a potentially hostile population generated the need for a means of providing security and maintaining order. To assist in these tasks the Army created the Constabulary in July 1946. It bore responsibility for providing area security throughout the American Zone of Occupation. Through reliance upon mounted patrols, it sought to maintain a presence to deter acts of violence and sabotage. Its basic missions included maintenance of law and order, checkpoint operations, the interdiction of black market activities, and apprehension of Nazi and SS personnel.

The Constabulary initially comprised nine Constabulary regiments organized into three brigades. Component elements came largely from mechanized cavalry squadrons and armored divisions due to their familiarity with mobile, dispersed operations. However, the police function assigned to the Constabulary differed markedly from traditional combat actions. Moreover, new recruits constituted much of the force’s enlisted strength, following the demobilization of many combat veterans. The creation of a Constabulary School modeled upon the Armored School at Fort Knox helped to immerse Soldiers in German language, culture, and the legal responsibilities associated with their duties.

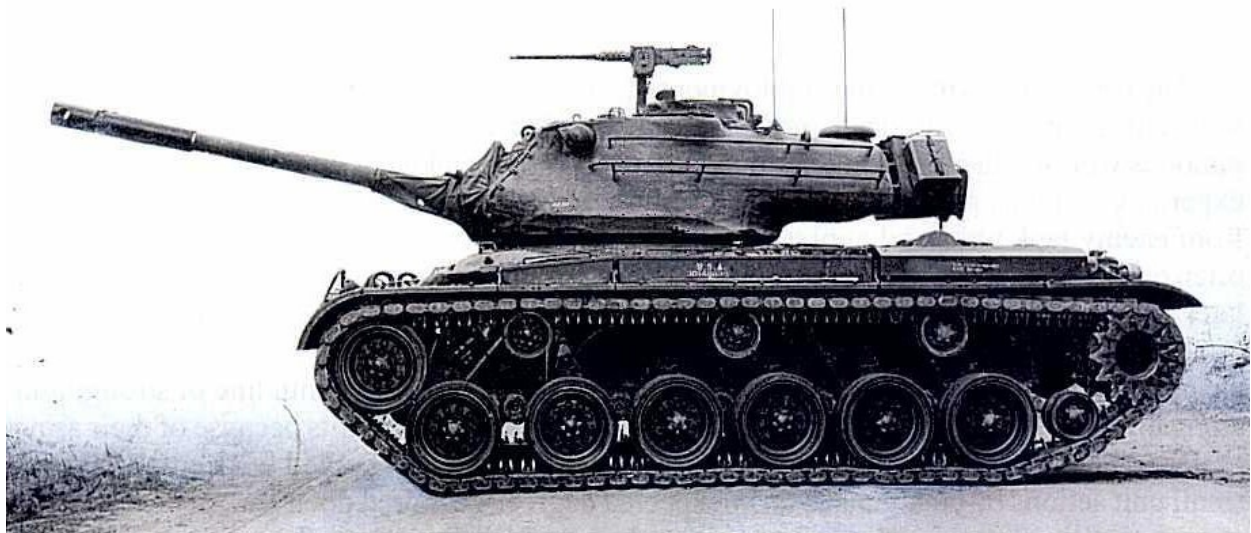
# Constabulary to Cold Warrior

By 1948 a reorganized German police force began to assume many of the functions initially conducted by the Constabulary. The onset of the Cold War and the growing threat of Soviet aggression triggered a change in the Constabulary's mission and organization. A number of Constabulary units were restructured to form the Army's first armored cavalry regiments. Patrols along the East German border assumed much greater importance. The Constabulary continued to support major law enforcement activities, but it also began to increase its combat capability through the acquisition of medium tanks and increased tactical training. These changes reflected a growing desire for more combat power in Germany to protect Central Europe from Soviet aggression. The Constabulary headquarters was finally inactivated in November 1950, although two Constabulary squadrons remained in service until 1952.

Growing Soviet might and the creation of the Warsaw Pact posed new challenges to the Army in Europe. American military planners envisioned a possible Third World War opening with a rapid Soviet/Warsaw Pact invasion of West Germany on a massive scale. Stopping this mechanized avalanche quickly became the dominant concern of the U.S. Army. American armored forces were expected to play the principal ground role in what was likely to be a fast-paced war of maneuver. Yet American armored formations continued to field the same platforms used in World War II, while Soviet tanks steadily improved in number and capability. Similarly, the rapid demobilization that followed World War II left the Army with only 10 divisions on active service by 1948. Only one was an armored division. Readiness also eroded, leaving the Army with limited means with which to confront Soviet aggression.

With the Army focused upon Europe, North Korea invaded South Korea in 1950, just days after the establishment of the Armor Branch. North Korean columns of tanks and infantry quickly overran the small US contingents in their path and routed South Korean forces. Within weeks, the remnants of the American military presence had been driven into the southeast corner of the Korean peninsula, where they formed a final defensive position with surviving South Korean Soldiers—the Pusan Perimeter. There American and United Nations reinforcements

The M47 Medium Tank was rushed into production in 1952, but it suffered from too many troubles to see action in the Korean War. Although it possessed good cross-country mobility and a top speed of 37 mph, its gasoline engine permitted a maximum operating range of only 85 miles. Most M47s produced were exported.



# Constabulary to Cold Warrior

began to arrive, including several US Marine Corps and Army tank battalions. These mounted units initially performed defensive actions, counterattacking North Korean breakthroughs and strengthening key positions. They then spearheaded a counteroffensive synchronized with large-scale landings at Inchon. The ensuing drive to the 38<sup>th</sup> Parallel witnessed several tank-versus-tank actions that generally favored American tank crews and resulted in the destruction of much of the North Korean mounted force.

When offensive operations continued into North Korea, tank units and divisional reconnaissance companies again found themselves in the forefront. Although these units lacked the capabilities inherent to an armored division or armored cavalry regiment—none of which served in the Korean War—they proved versatile and effective. When Chinese Communist Forces intervened in late 1950, they quickly infiltrated through the widely dispersed United Nations forces and created several pockets. Again, tank battalions and reconnaissance companies played a central role in the efforts of isolated units to escape down routes subjected to repeated ambushes. Armored vehicles provided the firepower and mobility to protect the United Nations columns as they retreated southward. At times they conducted local counterattacks to permit friendly forces to make good their escape.

When United Nations military organizations returned to South Korea, they continued to experience heavy fighting. Chinese and North Korean formations launched several major offensives in 1951 that were matched in intensity by American-led operations. In these bloody engagements, tank battalions provided fire support, bolstered the defenses of frontline outposts, counterattacked when necessary, and acted as supporting artillery. American tanks found themselves employed in companies and platoons working in close conjunction with infantry, sometimes carrying supplies and wounded Soldiers. Terrain and the nature of the conflict resulted in an emphasis upon small unit actions by tank units to an unexpected degree. Armored doctrine oriented upon the use of tank masses in a European setting had to be adjusted to the realities of Korea. Nevertheless, American armor performed effectively and demonstrated an ability to operate in rugged terrain.



The Korean War did not result in American armored divisions sweeping across the Korean countryside. Instead, tanks found themselves working in close cooperation with infantry in a variety of support roles.

# Constabulary to Cold Warrior

Reconnaissance elements gathered information regarding enemy dispositions and intent, surveyed terrain, acted as a reserve, and provided general security. Their ability to engage enemy armor in the early stages of the conflict remained sharply limited by their reliance upon M24 light tanks, which proved no match for North Korean T34/85s. The war also marked the first operational employment of the new combined arms reconnaissance platoons adopted as a result of analysis of the World War II experience. These platoons possessed great versatility, but their mix of jeeps, light tanks, and armored personnel carriers made command in rugged terrain difficult due to the differences in mobility among these platforms. At times, the tanks of different platoons were combined to form a more powerful armored strike force. Similar actions with the mortar and infantry elements could provide a concentration of fire support or an enhanced ability to operate in complex or urban terrain.

Combat operations in Korea and lingering fears of an outbreak of war in Europe triggered efforts to field new materiel to armor and cavalry organizations. Initially, mounted units dispatched to Korea entered combat with the same M4 and M26 tanks that had fought in World War II. Indeed, the need for tanks in the summer of 1950 became so intense, that vehicles only recently placed on display at Fort Knox as monument vehicles were pressed back into service.

An upgraded version of the M26 also made its debut in Korea—the M46. The Army, however, also undertook the rapid design and production of a new tank, the M48. Development began in 1950 and by 1953 the new platform was in full rate production. The rapid pace of development resulted in numerous teething troubles, but the Army considered it more important to field quickly a satisfactory tank rather than await perfection of the design. The M48 featured a dome-shaped turret that improved ballistic protection, a 90-mm gun, and an improved fire control system. Continuous improvements based upon engineering reviews and soldier feedback resolved early problems, resulting in a tank both reliable and popular.

After the Korean War American armored development focused upon building tanks superior to Soviet designs. Throughout the 1950s and 1960s, Soviet tanks became more effective and continued to outnumber their American and NATO counterparts. Hence, the continuous evolution of Soviet tank designs spurred the US to experiment with advanced technologies and accelerate the pace of tank development. American armored units anticipated being outnumbered in any conflict in Central Europe. Therefore tank systems that improved the ability to hit and kill a vehicle at long range received priority development. This emphasis resulted in a fire control system that included a rangefinder, ballistic computer, ballistic drive, and gunner's periscope. Such fire control systems marked a major improvement over the optical sights used in WWII, where the gunner's ability to gauge distance and mentally calculate the impact of wind, cant, and movement largely determined accuracy. Fire control systems underwent continuous improvement throughout the Cold War, thereby establishing the technological basis for the fire control and stabilization of the later Abrams tank. Related developments focused upon improving guns and ammunition. American tanks also tended to be more spacious and comfortable than Soviet ones. Crew stations were designed to minimize fatigue and prevent the rapid erosion of combat ability through discomfort.

# Constabulary to Cold Warrior

By the late 1950s, the Army had begun design work upon a successor to the M48, using proven components and technologies. The resultant M60 matched a 105-mm gun and diesel engine with the M48's turret and chassis. Combat units first received the M60 in December 1960. Subsequent modifications gave the M60 a distinctive look and resulted in the M60A1. The M60A1 proved popular and largely free of the major teething troubles encountered with the early M48s. The M60-series reflected a steady qualitative increase in component development and armor protection that could be traced to World War II. The M60A3 became the final version of this series and constituted a major systems upgrade that incorporated technologies also used on the M1 Abrams tank.



The M48A3 incorporated a series of design improvements to the original M48 model that increased reliability and effectiveness. It especially benefitted from the incorporation of a diesel engine that doubled its range.

The evolutionary nature of American tank designs resulted in increasingly reliable tanks generally popular with their crews. However, several efforts were made to build revolutionary designs incorporating leap-ahead technology. In the 1950s, for example, the Army developed the T95 as a potential replacement for the M48. It featured a variety of new concepts, including the Optical Tracking, Acquisition and Ranging system. This device measured the time taken for a pulse of light to travel to and from the target to provide an accurate range. It was the precursor to the laser rangefinder, but suffered from being too fragile and prone to generating multiple returns. The MBT 70 design of the 1960s featured an autoloader, a dual gun/missile main armament, a three-man crew located in the turret, and hydro pneumatic suspension. Both the T 95 and the MBT 70, however, proved too expensive and complex. Although they never advanced beyond a developmental stage, they did pioneer new technologies later brought to maturity in the Abrams tank.

# Constabulary to Cold Warrior

Fort Knox Trainer, 1950s era



Cavalry and reconnaissance organizations benefited first from the fielding of the M41 light tank, which carried a 76-mm gun and improved armor compared to the M24. Efforts to field a satisfactory armored car, however, failed.

Achieving the right combination of desired qualities proved elusive as did parallel actions intended to generate a more survivable jeep that did not sacrifice the vehicle's low silhouette and quietness. The M114 armored command and reconnaissance vehicle offered armored protection and tracked mobility, but it proved mechanically unreliable and never met expectations. Organizationally,

armored cavalry assigned to divisions and armored cavalry regiments retained their combined arms nature, adding air cavalry components equipped with helicopters. Maneuver battalions continued to include a scout platoon, but the configuration of this unit underwent continuous change in the years following World War II, fluctuating between combined arms organizations and pure scouts intended for information collection over a broad frontage.

## The Vietnam War

Despite its focus upon countering the Soviet threat to Central Europe, in the 1960s the Army found itself embroiled in a war in Southeast Asia. In 1965 the United States committed to a major deployment of ground troops to South Vietnam to ensure that nation's continued independence from North Vietnam. Initial terrain assessments suggested little role for armored units. Jungles, swamps, paddy fields, and other topographical features seemed to reduce vehicular operations to a marginal role. The Army also considered difficult terrain and counterinsurgency the domain of the rifleman, not the tanker. Hence the first mounted units to arrive in South Vietnam initially found themselves greatly restricted in their operations, often performing base security. Over time these restraints disappeared, and armored vehicles became commonly used in many roles, fully exploiting their combination of firepower, protection, and mobility.



# The Vietnam War

Doctrinal guidance, however, remained oriented upon a European battlefield. Basic principles of combined arms operations had to be applied to the fundamentally different operational environment of Southeast Asia. Armor and cavalry organizations therefore developed through trial and error their own tactics, techniques, and procedures suited to South Vietnam and counterinsurgency. In doing so, they stressed the use of firepower and mobility to counter Viet Cong guerrilla tactics. Tanks often accompanied infantry units, frequently leading their advance. They provided fire support, created jungle paths, cleared areas for helicopter landings, performed bunker-busting, and carried supplies to forward units. To disrupt ambush and sabotage of principal roads, armor units conducted “Thunder Runs.” In these operations armored columns intentionally entered areas known for ambush activity. They deliberately sought contact with enemy forces. Upon contact the column dashed through the ambush area, regrouped, and assaulted the hostile force. Throughout the operation armor relied upon its firepower, armor, and speed to obtain a rapid, decisive result. More mundane but vitally important missions included convoy escort and route security to sustain the flow of supplies throughout South Vietnam.

Mounted units sought to force battle upon elusive enemy forces. Armor and cavalry units used a search pattern in which platoons moved in a clover leaf formation. Once hostile forces were discovered, “pile-on” became the principal tactic. All friendly units in the vicinity of the target raced toward the contact area, assaulting from multiple directions and employing maximum firepower. To provide security during road marches, armored units adopted the herringbone formation when halted. This formation provided all-round security and minimized the chances of being surprised.

For tank and cavalry units, the M48A3 tank and the M113 armored personnel carrier represented the principal armored fighting vehicles. The M48A3 benefited from several improvements over the original M48, including the incorporation of features developed for the M60-series. Crews especially appreciated the M48A3’s survivability. Mines tended to throw tracks without destroying the vehicle, while rocket-propelled grenades needed to hit a vital area to destroy the tank. Crews regularly continued to fight their vehicle long after being immobilized or otherwise damaged. The M113 did not possess the same level of protection, but its superior mobility permitted it to operate throughout South Vietnam. It was often used in a tank-like role, with its crew fighting from the vehicle rather than dismounting to attack on foot. After initial engagements in which M113s suffered heavy crew losses while operating the exposed .50-caliber machine gun, the vehicle underwent modification in the field. Two additional machine guns were mounted and gunshields added to all positions. Thus reconfigured, the vehicle proved a more effective combat platform and became known as the armored cavalry assault vehicle (ACAV). Against enemy infantry, it relied upon its armor and mobility to attack at close range, where its machine guns proved deadly. However, it remained vulnerable to mines and RPGs, resulting in a variety of improvised measures intended to boost survivability.



# The Vietnam War



M113s in action, 1966



Armored Cav in action



# The Vietnam War

The M551 (Sheridan) also made its combat debut in Vietnam. It evolved from efforts to build a light tank for air assault operations that could also engage armor. To achieve this goal, the vehicle carried the Shillelagh gun/missile launcher. The missile promised the ability to destroy any known tank, while the 152-mm gun provided a powerful weapon against soft targets. The gun, however, used caseless ammunition that often left smoldering debris in the gun tube, resulting in the premature detonation of subsequent rounds. It took several years to eliminate this problem. The gun's recoil also lifted the front road wheels off the ground and damaged the delicate missile fire control system. Nevertheless, the M551 deployed to Vietnam in the expectation that it would provide a powerful weapon system to troops entering combat, even though it required further development and testing. It proved a partial success. Its 152-mm gun proved devastating to enemy personnel, but the vehicle's light, aluminum chassis provided only limited protection. Mine explosions tended to rip open the chassis, detonating the ammunition and destroying the tank.

Armor played an important role throughout the Vietnam War. From an initial minimal presence mounted combat elements increased until they represented a significant percentage of the Army's ground combat forces. Armor capitalized on its own mobility and firepower and the reconnaissance capabilities of the newly developed Air Cavalry to find and engage an elusive opponent. The resultant destructive power became evident in offensive actions like those performed during Operations Cedar Falls and Junction City. Armor also provided a rapid response to hostile actions. During the 1968 Tet Offensive armor provided relief and counterattack forces that contributed to the overall American military victory. The combined arms nature of division cavalry squadrons and the 11<sup>th</sup> Armored Cavalry Regiment also proved highly effective in a counterinsurgency environment, validating the organizational and doctrinal principles embedded in their design.



M551 Sheridan advancing through a rubber plantation

# The Vietnam War



M48 tank crew, 2/1st Cav



# From Cold War to Gulf War

After the Vietnam War, the Army's focus returned to countering the Soviet threat in Central Europe. Lessons learned in Vietnam tended to be lost or neglected as "special cases." The continued evolution of Soviet capability encouraged this abandonment of the Vietnam experience. In 1973, the outbreak of war between Israel and its Arab neighbors provided the US Army an opportunity to study the capabilities of new Soviet weapons used by the Arab armies. The war included the largest clashes of armor since WWII and witnessed the combat employment of American M60 tanks in Israeli hands. This tank did not prove invulnerable. Israeli tankers preferred the British Centurion tank, since rupture of the M60 hydraulic lines tended to burn crews and turret hits too often ignited the ammunition stored there. Moreover, the high tank loss rates on both sides indicated that the battlefield had become much more lethal, in part because of the widespread use of antitank guided missiles and more powerful rocket propelled grenades.

This war forced the US Army to review critically its assumptions of superiority over the Soviets. The emergence of the T62, BMP, and Sagger antitank missile suggested that the U.S. Army might be losing its technical and qualitative edge. By the mid-1970s, the Soviet Union was fielding a new generation of armored vehicles, capitalizing on technical and doctrinal developments since World War II. To US planners, it became clear that the next war would occur with little warning, negating US plans that assumed several months of advance notice in which to mobilize and deploy additional forces overseas. The Army would enter combat with whatever forces were on hand. These realizations led to a series of sweeping military reforms intended to improve Army readiness and ensure its battlefield superiority. A revolution in training began with the establishment of the Training and Doctrine Command in 1973. Training became more realistic and focused upon meeting high readiness standards, epitomized by the opening of the National Training Center (Ft. Irwin) in 1980.

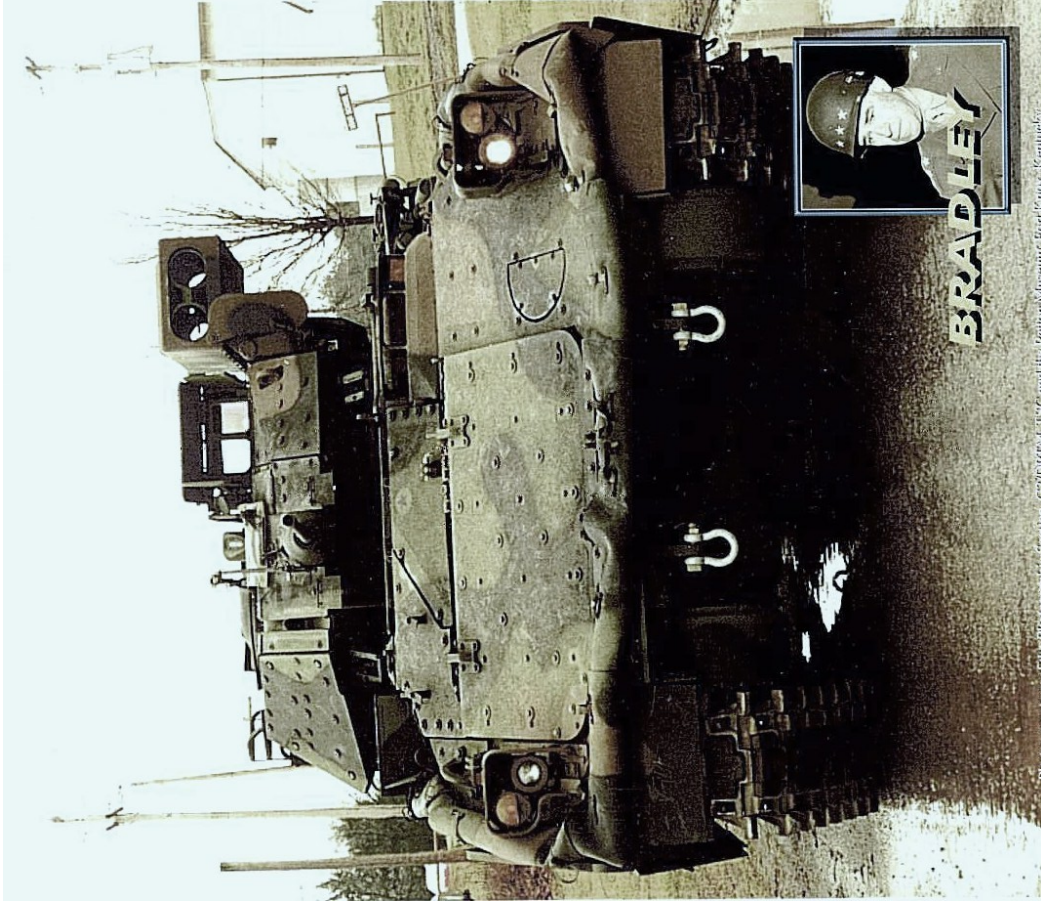
A parallel shift in doctrine and organization generated more capable and combat-ready organizations collectively described as the Army of Excellence. On the battlefield, implementation of AirLand Battle doctrine oriented combat units toward the destruction of enemy forces throughout their depth through the integrated use of air and ground assets. Central to applying this doctrine at the tactical level lay the fielding of the M1 Abrams tank and the M2/M3 Bradley Fighting Vehicle in the early 1980s. Designed to operate together in an environment dominated by Soviet armor and mechanized infantry, these new platforms possessed much greater armor protection, carried more powerful weapons, and proved more mobile than their predecessors.

The M1 Abrams was optimized to fight in Central Europe against a Soviet-style threat. Its design reflected the combination of lessons learned in mounted combat since World War II and the most advanced technology available for fielding. Consequently, the M1 represented a major advance in capabilities, particularly in the areas of lethality and survivability. Armor protection derived from the British development of Chobham composite armor—layers of armor separated by various materials whose precise composition has remained classified. Its gas-turbine engine ensured sufficient power to achieve a high cross-country speed. The use of blow-off panels, an automatic fire suppression system, and the provision of an armored bulkhead separating fighting compartment and main gun ammunition all served to ensure the crew's survival. The original 105-mm main gun was subsequently upgraded to a 120-mm weapon in the M1A1.

Photos courtesy of the DOD Joint Combat Camera Center, AF151D 71 and the Patton Museum, Fort Knox, Kentucky



The M1A1 represented the culmination of a back-to-basic design philosophy that fielded one of the most powerful and effective tanks in Armor's history. The M1A1 still constitutes the bulk of the Army's tank fleet.



Following the Vietnam War and the emergence of the Soviet BMP, the US Army began work on a more powerful and better protected replacement for the M113. The Bradley Fighting Vehicle resulted with Cavalry and Infantry versions.

# From Cold War to Gulf War



The M1A1 proved a war-winner in Operation Desert Storm.



1-4 Cavalry Squadron, 1st Infantry  
Division Orders Group meeting,  
Operation Desert Storm



# ARMOR



(Each Armor Regiment has its own regimental insignia and coat of arms)

**Branch Insignia:** The front view of an M-26 tank, gun slightly raised, superimposed on two crossed cavalry sabers in scabbards, cutting edge up, 13/16 inch in height overall, of gold color metal.

The Armor insignia, approved in 1950, consists of the traditional crossed sabers (originally adopted for the cavalry in 1851) on which the M-26 tank is superimposed. The design symbolizes the traditional and current roles of armor.

**Branch Plaque:** The plaque design has the branch insignia, letters and border in gold. The background is green.

**Regimental Insignia:** Personnel assigned to the Armor branch affiliate with a specific regiment and wear the insignia of the affiliated regiment.

**Regimental Coat of Arms:** There is no standard armor regimental flag to represent all of the armor regiments. Each regiment of armor has its own coat of arms which appears on the breast of a displayed eagle. The background of all the armor regimental flags is yellow.

**Branch Colors:** Yellow. 65002 cloth; 67108 yarn; 123 PMS.

In March 1855, two regiments of cavalry were created and their trimmings were to be of "Yellow". In 1861, the designation of dragoon and mounted rifleman disappeared, all becoming Cavalry with "yellow" as their colors. Armor was assigned the colors green and white by circular 49 on 21 February 1947. When the Cavalry branch was abolished, the present Armor was assigned the former Cavalry color yellow by SR 600-60-1 dated 26 October 1951.

**Birthday:** 12 December 1776. The Armor branch traces its origin to the Cavalry. A regiment of cavalry was authorized to be raised by the Continental Congress Resolve of 12 December 1775. Although mounted units were raised at various times after the Revolution, the first unit in continuous service was the United States Regiment of Dragoons, organized in 1833. The Tank Service was formed on 5 March 1918. The Armored Force was formed on 10 July 1940. Armor became a permanent branch of the Army in 1950.



# CAVALRY



**Collar Insignia:** Two crossed sabers in scabbards, cutting edge up, 11/16 inch in height, of gold color metal.

The cavalry insignia was adopted in 1851. Officers and enlisted personnel assigned to cavalry regiments, cavalry squadrons or separate cavalry troops are authorized to wear the cavalry collar insignia in lieu of their insignia of branch when approved by the MACOM commander. Some of the armor and aviation units are designated cavalry units.

**Branch Plaque:** The plaque design has the Cavalry insignia and rim in gold. The background is white and the letters are scarlet.

**Regimental Insignia:** Personnel assigned to cavalry units affiliate with a specific regiment of their branch or cavalry unit and wear the insignia of the affiliated regiment.

**Regimental Coat of Arms:** Each cavalry regiment has its own coat of arms that is displayed on the breast of a displayed eagle. The background of all cavalry flags is yellow.

**Colors:** Although cavalry is not a branch, yellow is used as a branch color for personnel assigned to cavalry units. In March 1855, two regiments of cavalry were created and their trimmings were to be "yellow." In 1861, the designation of dragoon and mounted rifleman disappeared, all becoming cavalry with "yellow" as their colors. Yellow was continued as the color for cavalry units subsequent to abolishment as a branch. Although the regimental flags for cavalry units are yellow, the troop guidons are red and white without an insignia on the guidon.

# From Cold War to Gulf War

M1A1. An array of sophisticated electronics provided much more effective stabilization and permitted a true fire on the move capability. Indeed, when the M1 first participated in NATO maneuvers, it received the nickname “Whispering Death,” because of its ability to maneuver quietly and destroy targets consistently without stopping.

Development of the Bradley Fighting Vehicle began in response to the limitations of the M113 and ACAV. The appearance of the Soviet BMP further encouraged a vehicle with greater combat capabilities than the earlier personnel carriers. Initially designed as an infantry fighting vehicle, a modified version was adopted for cavalry usage and designated the M3 Cavalry Fighting Vehicle. Both versions carried a 25-mm cannon, a machine gun, and a TOW missile launcher. The infantry version carried an infantry squad, while the cavalry fighting vehicle carried a scout team and additional TOW missiles. The M3 entered service in 1984.

Initially, every scout and cavalry platoon was to be equipped with the M3. However, concerns about the vehicle’s size, noise, and heavy firepower resulted in a desire for a smaller platform better suited to stealth and the avoidance of combat. A series of tests at the NTC during the 1980s finally encouraged the Army to adopt the High Mobility Multi-Wheeled Vehicle (HMMWV) for scout platoons. Initially designed as a general utility vehicle and replacement to the jeep, the HMMWV’s relatively small size, quietness, and ease of sustainment made it attractive as a scout platform, although its lack of armor protection raised concerns about its survivability. Nevertheless in 1990, the Army leadership directed the fielding of HMMWVs to all scout platoons. Armored cavalry platoons retained the M3.

In 1990, the U.S. responded to Iraq’s invasion of Kuwait with a massive buildup of American and allied forces in Saudi Arabia. In Operation Desert Storm, this force liberated Kuwait and advanced into Iraq, destroying much of that nation’s conventional military arsenal. This military action provided the Army an opportunity to apply AirLand Battle concepts and measure the effectiveness of the training reforms and materiel improvements implemented in the 1980s. The result proved a stunning success. The Iraqi army was outmaneuvered, engaged throughout its depth, and destroyed in a series of rapid engagements. The application of powerful ground forces, spearheaded by armored units proved decisive in achieving victory.

The Gulf War demonstrated the effectiveness of the Abrams tank and Cavalry Fighting Vehicle. Despite pessimistic forecasts of their ability to function in a desert environment, both vehicles proved popular with their crews and generally reliable. Indeed, many potential problems were identified during pre-war rotations in the desert conditions of the National Training Center. The combat power and survivability of both platforms tended to surpass expectations. Cavalry Fighting Vehicles proved capable of engaging most targets encountered, including Iraqi tanks. The Abrams tank proved greatly superior to the Soviet-built T-72 in combat. It engaged Iraqi tanks in all weather conditions and at night, thanks to the use of thermal sights. Abrams crews repeatedly began engagements at longer ranges than expected by Iraqi tank crews. Without having to stop to fire, Abrams tanks scored a high rate of first-round kills and simply drove through Iraqi positions. At 73 Easting, the 2d Armored Cavalry Regiment drove into an ambush established by the Iraqi Republican Guard in conditions of poor visibility. Within a short time the Iraqi tanks had been destroyed and the armored cavalry continued its advance. For many Iraqi tank crews, the first indication of the American presence came from the explosion of their wingman’s tank.

# **From Cold War to Gulf War**

Armored cavalry organizations performed reconnaissance, security, and economy of force operations. The combined arms nature of both armored cavalry regiments and division cavalry squadrons again proved effective both in determining Iraqi defenses and in overcoming them. Battalion scouts still equipped with the M3 proved robust, but those employing HMMWVs operated under leadership-imposed constraints. Concerns about the vehicle's vulnerability led to their use in roles that minimized their exposure to hostile fire.

## **Armor in the 1990s**

After the Gulf War, the Army's structure and mission set began to change. No longer did defeat of the Warsaw Pact dominate military thinking. The Soviet Union ceased to be a threat, and in fact ceased to exist, but the Army's deployment rates reached unprecedented levels for a nation at peace. Humanitarian aid, peacekeeping, stability, and support operations became regular activities. The use of armor in such missions seemed unnecessary, and in the absence of the Soviet threat, critics questioned the need for a heavy mounted force at all. However, Armor adapted to the changed circumstances and deployment patterns of the 1990s. The tactical agility and versatility that made mounted units effective on the battlefield proved readily applicable to missions other than high intensity combat. In peacekeeping roles, the commitment of heavy forces proved a powerful demonstration of America's national will. The presence of armor and cavalry units served to deter potential attacks and provide support to lighter troops responsible for security, checkpoint operations, escort duties, and weapons inspections. The heavier mounted forces possessed the firepower and mobility to destroy those threats undaunted by the simple presence of American Soldiers.

The reorientation of Armor away from the Cold War's Central European focus started before the Gulf War. In 1989, Armor participated in Operation Just Cause, which removed Panamanian strongman Manuel Noriega from power and permitted the establishment of a more democratic government in Panama. Sheridans from 3-73 Armor provided fire support, using their 152-mm guns to blast Noriega supporters out of concrete buildings. They also eliminated roadblocks, evacuated wounded, and used their presence and firepower to discourage escape and counterattack efforts.

In 1994, American forces intervened in Haiti to prevent widespread violence and ensure a peaceful transition to a democratic government. Subsequently, US forces supported a multinational force that remained to ensure peace. The 2d Armored Cavalry Regiment deployed to Haiti as part of this effort. The potential for sudden outbreaks of violence remained high. Therefore, the regiment's primary role became one of locating and defusing trouble spots before they escalated into a crisis. Reorganized after the Gulf War into a light cavalry force equipped primarily with HMMWVs, the 2d ACR performed a variety of security missions that included round-the-clock security patrols in the capital city of Port-au-Prince, convoy security, and protection of key sites. Its activities required a mix of mounted and dismounted operations. It also maintained quick reaction forces possessing additional firepower and manpower ready to respond to a sudden eruption of violence.

# Armor in the 1990s

Operation Restore Hope placed mounted troops in Somalia on the opposite side of the world in a much more volatile environment. Intended to ensure the safe arrival of food convoys to starving masses, this operation pitted American and United Nations Soldiers against a mix of bandits and armed factions. The 3-17 Cavalry deployed with its parent formation, the 10th Mountain Division. It helped to provide a military presence intended to deter interruption of the relief effort. It established visible checkpoints intended to control traffic and conduct searches for weapons, and it conducted reconnaissance patrols in its area of operations. In addition, the unit was required to be capable to mount raids, armed reconnaissance, and air assault operations should fighting flare up.

Political considerations initially blocked the deployment of American tank units to Somalia. However, in October 1993, fighting broke out in Mogadishu when a raid by Ranger forces escalated into sustained combat. Extraction and relief columns encountered difficulties negotiating hostile streets in unarmored wheeled vehicles. The absence of American tanks resulted in delays before an international armored force could be assembled and dispatched into the city. This experience resulted in the subsequent deployment of heavy forces, including a company team from the 24<sup>th</sup> Infantry Division (Mechanized) and 1-64 Armor. Nevertheless, in the wake of the fighting in Mogadishu, the US opted to withdraw from the Somali relief effort.



2 ACR in Haiti

It is to prevent such events or intervene decisively that Armor participates in operations other than war. Hence, tanks were among the first elements to cross the Sava River into Bosnia in December 1995 as part of Operation Joint Endeavor, intended to end the ethnic violence there. It was no accident that the 1st Armored Division constituted a major part of the American military presence. In Bosnia, tank and cavalry units again symbolized American intent to enforce adherence to the peace terms agreed upon by the ethnically divided population.

While M3 Cavalry Fighting Vehicles conducted patrols throughout the countryside, quick reaction forces built around the M1A1 tank supported them. The same vehicle, equipped with mine rollers, also cleared roads of anti-tank mines. The rugged terrain of Bosnia posed difficulties to mobile operations, but it did not prevent them. In 1999 Serbian ethnic cleansing in the Yugoslavian province of Kosovo triggered the outbreak of hostilities between Yugoslavia and NATO. The latter mounted an air campaign designed to erode Serbian combat power and force a Serbian withdrawal from Kosovo.



Officer Advanced Course training, Fort Knox

# Armor in the 1990s

These objectives were met and combat operations ceased. Although ground forces played little active role in the war itself, afterward they assumed responsibility for maintaining peace within Kosovo. The challenge lay in the instability, continued ethnic violence, and the absence of an effective government. Armor personnel deployed to Kosovo to promote peace quickly found themselves in an environment characterized by violence. However, the sustained presence of American ground troops helped to stabilize the province and permit rebuilding and reconstruction efforts.

Despite Armor's growing involvement in peacekeeping and relief operations, the need for sharply honed combat skills remained high. Nowhere did this become more apparent than in Korea, where elements of North Korea's mass army stood poised close to the demilitarized zone and within 20 kilometers of the most advanced American tank positions. The simultaneous presence of Armor in Bosnia and Korea symbolized the branch's versatility and continuing importance. It also fed efforts to increase the combat effectiveness of Armor.

## Toward a Digitized Force

In the wake of the Gulf War the Army faced a series of new challenges. With the Cold War ended and military threats to American national interest diminished, downsizing and budget reductions followed. The Army's stance changed from forward deployment from bases overseas to force projection from the United States. Peacetime deployments reached an unprecedented high as troops deployed to support peace and humanitarian actions worldwide. These commitments placed a drain on the ability of the Army to respond to a large-scale conventional conflict. In the absence of more troops and money, the Army needed to increase significantly the combat effectiveness of its available forces.

The Army initiated a reengineering of its institutional and operational forces. Known as Force XXI, this process sought to exploit new technology -- especially information technology -- and command concepts. In particular, it sought to apply new information technology to increase the situational awareness of battlefield leaders. Through reliance upon global positioning systems, a tactical internet, and digital communications, commanders would receive more accurate and timely information regarding friendly and enemy forces. It would then be possible to conduct precision maneuver, massing combat power upon critical targets and weak points without necessarily massing men and materiel. Continuous and near real time updates of battlefield information would permit operations to occur at a pace faster than the enemy's ability to react.

The inherent Armor characteristics of mobility and firepower lent themselves easily to this environment. Indeed, many early Force XXI initiatives focused upon integrating digital technologies into heavy force organizations. Digitization possessed the dual potential of improving overall combat effectiveness and reducing the danger of fratricide.

Force XXI concepts were tested during a series of Advanced Warfighting Experiments that occurred throughout the 1990s. In 1994 Desert Hammer VI tested a digitized battalion task force at the National Training Center (NTC). This unit was thrust into the experiment with a variety of prototype equipment and limited training time. Its performance suffered accordingly, but the results proved sufficient to encourage further testing of digital materiel and concepts. In 1995 the Army designated a brigade of the 4<sup>th</sup> Infantry Division at Fort Hood, Texas, as a permanent Experimental Force (EXFOR) to provide continuity to subsequent digital

# Toward a Digitized Force

developments and warfighting experiments. The same year witnessed Focused Dispatch, which demonstrated the ability to link live and virtual forces at different locations in a single maneuver environment. By 1997, several years of development had resulted in more robust and effective digital equipment and their incorporation into more refined and viable doctrinal concepts. These were tested during Advanced Warfighting Experiment Task Force XXI. This event featured an NTC rotation by the EXFOR, using updated equipment and personnel trained in digital concepts. The results clearly demonstrated the increased effectiveness of a digital combat force, particularly in situational awareness, tactical maneuver, and the ability of commanders and staffs to track battlefield events. The same year the Division Advanced Warfighting Experiment focused upon the operation of a digital division and related command and control issues. Collectively, these experiments established the baseline for the creation of a digital force with an enhanced ability to influence the battlespace.

Force XXI concepts remained in a developmental state throughout the 1990s, but tangible evidence of their adoption could be found in the M1A2. This platform constituted the Army's first tank intended to fight in a digital environment. Fielded in 1993, it outwardly resembled the M1A1. However, the M1A2 proved unique in its internal electronics. Its automated architecture comprised multiple linked subsystems associated with navigation, tactical operations, and fire control. This information was displayed automatically to the crew and to other electronically linked vehicles. The M1A2 also ran continuous self-diagnostic tests to determine mechanical or electronic failures. The commander's independent thermal viewer permitted the gunner and commander to search separately for targets, greatly increasing the speed at which targets could be identified and acquired.

An upgraded version, the M1A2 System Enhancement Program (SEP) appeared in 1999. It incorporated multiple improvements over the original M1A2. Heavier armor improved survivability, while overall operability increased with a pulse jet system. Lethality increased by upgrading the commander's independent thermal viewer to include a second generation forward looking infrared imaging capability. Communications also benefited from the addition of Force XXI Battle Command Brigade and Below (FBCB2). This device automatically shared information among elements of a brigade combat team and gave them an identical view of the battle area. It dramatically improved the ability to track battlefield developments and share a wide range of data, including graphics. FBCB2 also provided connectivity to a wide range of digital communication systems used by division and brigade components.

The expense associated with procuring new vehicles ensured that the Abrams tank would remain in service for the foreseeable future. Hence, sustaining its combat effectiveness became a priority focus. In 1999, the Abrams Integrated Management program resulted. Under this program, tanks were rebuilt, worn parts replaced, and new components inserted. At Anniston Army Depot in Alabama, each tank was disassembled and its turret shipped to the Lima Army Tank Plant in Ohio. Both turret and hull were separately overhauled and then reassembled at Anniston. This process returned tanks to near brand new condition and greatly extended their service life.



# *Maneuver Center of Excellence Fort Benning, Georgia*

Current Headquarters of MCoE in McGinnis-Wickam Hall  
Named for Medal of Honor recipients:  
SPC Ross A. McGinnis (IN) and CPL Jerry W. Wickam (AR)



**Brave Rifles Field, Harmony Church**



**Abrams Hall Lodging, Main Post**



**Fiddler's Green, Benning Club, Main Post**



**Armor Museum Restoration Shop, Sand Hill**



# Toward a Digitized Force

Light armored platforms did not fare as well. The M551 Sheridan finally left active service, although it continued to equip the OPFOR at the National Training Center. Its replacement, the M8 Armored Gun System, was ready for fielding in 1996 when budgetary considerations resulted in its cancellation. The loss of both platforms eliminated armor support for airborne/air assault units altogether, symbolized by the deactivation of 3-73 Armor, which performed this role. Similarly, AGS cancellation ended plans to modernize the HMMWV-equipped 2d Armored Cavalry. An up-armored version of the HMMWV began to enter service in 1996. It provided greater protection for its crew and passengers, but it could not replace the capabilities associated with the AGS.

In addition to its support for Force XXI and platform upgrades, the Armor Branch played a leading role in the design of a contingency reaction force. The prevalence of stability and support operations in the 1990s often led to the creation of ad hoc task forces built from units taken from different division and corps. This solution proved an effective temporary measure, but it disrupted the training activities of those formations involved. The Army therefore sought to create a permanent Strike Force to which units could be assigned for a given mission. Built upon the 2d Armored Cavalry, the Strike Force incorporated the concepts and materiel emerging from the Force XXI process and related advanced warfighting experiments. Plans for this organization remained in development when they were superseded by Army Transformation.

## Army Transformation

In 1999, The Chief of Staff of the Army, General Eric K. Shinseki, unveiled a new vision for adapting the Army to the expected operational environment of the 21<sup>st</sup> century. He was particularly concerned about the Army's ability to deploy forces into a real or potential crisis in a timely fashion. He believed that early intervention in a crisis could prevent its escalation and reduce overall troop commitments. However, the Armored force possessed combat power, but could not deploy rapidly. Light forces lacked survivability, especially if faced with an armored threat. Therefore, work began on a medium interim force that merged rapid deployability with lethality and survivability. This force initially named as an Interim Brigade, evolved into the current Stryker Brigade Combat Team (SBCT). The first Strykers were delivered to the Army in 2002, and the first SBCT became fully operational in 2003. In 2014, the Combined Arms Command (CAC), at Fort Leavenworth, KS changed the doctrinal term for all U.S. "motorized" wheeled platform forces to the term "Stryker."





# Army Transformation



The SBCT did not replace the need Armored or Infantry Brigade Combat Teams! Optimized for contingency and low intensity combat, the new SBCT organization could not function in a high intensity combat environment without significant augmentation. The SBCT was designed to be self-sufficient for 72 hours—enough time to shape its environment. It possessed a much reduced logistical footprint, but it exploited digital communications and the tactical internet to provide an unprecedented level of situational awareness. The bulk of SBCT combat power lay in its three infantry battalions. Armor bore responsibility for developing the brigade’s Cavalry Squadron for reconnaissance and security. The Cavalry Squadron in the SBCT proved unique among cavalry organizations of other brigades as it was not configured to perform traditional operations without support.

The wheeled Stryker vehicle made the SBCT distinct from other mounted combat units. It marked a break with the Army’s traditional reliance upon tracked vehicles. Moreover, the Stryker did not carry the maximum ballistic protection. Its survivability was embedded in the combined arms nature of the brigade and the ability to secure accurate, timely information on enemy dispositions. The bulk of the Stryker vehicles carried Infantry Soldiers in M1126 variant. Combat developers also worked to develop the M1127 Reconnaissance Vehicle (RV). The RV possessed a suite of sensors and surveillance equipment to assist information gathering. The MGS carried a 105-mm cannon to support dismounted Infantry actions. However, only 33% of initial MGS requirements were manufactured with fielding to Stryker Brigades delayed until 2007. This delay and lack of production left several MOS 19K Soldiers in MGS platoons without a vehicle and at the mercy of their Infantry Battalions.

To overcome the lack of M1128 production, the MCoE CG, MG McMaster, directed a Force Design Update (FDU) to change all MOS 19K positions inside the SBCT to MOS 19D. Also, the FDU moved all MGS Platoons from the three SBCT Infantry Battalions, into a Weapons Troop under the Cavalry Squadron. Additional actions included the conversion of Scout Platoons within the SBCT to change from MOS 11B positions to MOS 19D. Additional FDU’s affected the SBCT Cavalry Squadrons to change from two company-sized Troops with three Scout Platoons of 24 Soldiers each to only two Scout Platoons with 36 Soldiers each. This change is to match the doctrinal 6 x 36 Scout Platoon structure.

# Army Transformation

Simultaneous with SBCT development, the Army began work upon a brigade-size force that could be tailored to fit varied environments and designed to close with and destroy enemy forces. The projected use of unmanned ground and air vehicles, unattended sensors, and smart munitions made it possible to envision far fewer personnel simultaneous with improvements in combat effectiveness. The Future Combat System (FCS) constituted the centerpiece of this futuristic brigade combat team. The FCS included 18 different systems all connected through an advanced communications network. Robotic assets and a variety of line of sight, non-line of sight, and beyond line-of-sight weaponry completed the ensemble of technologies. The FCS intended to package lethality equivalent to or better than that of the Abrams tank with a reduced logistical support into a platform capable of air deployment.

Armor played a central role in developing the FCS. The importance attached to Transformation, however, resulted in increased funding for the SBCT and FCS at the expense of more conventional forces. Planned upgrades to the Abrams and Bradley fleets, for example, were either cancelled or scaled back. This shift in emphasis also narrowed the focus of digitization from the entire fleet of armored vehicles to those organizations in a single corps. In effect, digitized forces would be consolidated in lieu of extending the full range of digital capabilities to all platforms.

## The Global War on Terror



On September 11, 2001, Al Qaeda terrorists attacked the World Trade Center and the Pentagon, killing over 3,000 Americans. This event resulted in widespread efforts to improve security and forestall other terrorist actions. It also led to the declaration of a global war on terror and related actions intended to thwart terrorism world-wide. Faced with the brutality of terrorist action, the United States adopted a policy of preemptive strikes against known enemies considered likely to use violence to oppose American interests.

Within a month Afghanistan became the focal point of the new American policy. There military operations began to overthrow the ruling Taliban regime and destroy the Al Qaeda cells that it harbored. Initially, Special Forces operatives working with local anti-Taliban forces and supported by airpower played a key role. However, these efforts alone proved insufficient to accomplish American objectives. The commitment of more conventional forces followed, and by the end of 2002 the Taliban ceased to be a major influence in Afghanistan. Roadside bombings, ambushes, kidnappings, and intermittent mortar barrages continued throughout the country, but they failed to prevent the emergence of a new government or derail efforts to transition toward a democratic state.

# The Global War on Terror

Armor Soldiers played minimal direct role in combat operations, but they did serve as advisers to the Afghan government and army, particularly in the creation of an Afghan mounted force.

While operations in Afghanistan continued, tension between the United States and Iraq increased. American intelligence considered the regime of Saddam Hussein a likely sponsor of terrorism. Already suspected of violating United Nations' resolutions and secretly building a stockpile of weapons of mass destruction, its apparent link with terrorism made Iraq an especially dangerous threat. While American diplomats waged a campaign to convince NATO allies and the United Nations to take strong measures against Iraq, the US began preparations for possible military action.

On March 19, 2003, following the failure of diplomatic initiatives, American and coalition forces attacked Iraq. Operation Iraqi Freedom aimed to overthrow Saddam Hussein's government, destroy his military forces, find and secure weapons of mass destruction, and facilitate Iraq's transition to a democratic state. Military action sought to employ overwhelming military power to shock and awe opposition. Planning envisioned a key role for American heavy forces, with the 3d Infantry Division leading a drive toward Baghdad from Kuwait and the 4<sup>th</sup> Infantry Division invading Iraq from Turkey. The Turkish government, however, refused to allow the 4<sup>th</sup> Infantry Division to move through its country, necessitating its redeployment as a follow-on force in the drive to Baghdad. The US Marine Corps and British also employed armored units to support their related operations.

## OPERATION IRAQI FREEDOM

2003



# The Global War on Terror

The 3d Infantry Division's drive to Baghdad captured international attention. Led by the 3d Squadron, 7<sup>th</sup> Cavalry Regiment, the formation advanced toward the capital. It confronted and overcame a variety of threats, including Iraqi army forces, the paramilitary Saddam Fedayeen, pickup trucks loaded with armed men, and civilian vehicles that tried to ram American combat platforms. Ambushes with small arms, rocket propelled grenades, and mortars became frequent occurrences. These attacks often occurred at close range with little warning.

The continuous attacks upon the 3d Infantry Division did not stop its advance. The division generally bypassed major urban areas, leaving them to be cleared by the 101<sup>st</sup> Air Assault and 82d Airborne Divisions. It reached and penetrated the Karbala Gap, a natural chokepoint that channeled movement onto only two principal roads. Aggressive action seized a bridge across the Euphrates River that permitted direct access to Baghdad. Although initial plans called for the capital's encirclement, the speed with which the city was reached led to an armored reconnaissance in force into the city to test opposition. Dubbed "thunder runs," two such operations were conducted by the 2d Brigade Combat Team, 3d Infantry Division. Despite periodic intense fighting, these actions demonstrated the ability of American armor to move at will inside the Iraqi capital.

By April 10, just three days after the second thunder run, organized resistance in Baghdad collapsed together with Saddam Hussein's government. The US forces began to move into northern Iraq. Although the 4<sup>th</sup> Infantry Division had been barred from entering Iraq from Turkey, an airborne brigade had been inserted into the region to work with Special Forces and the Kurds. This force seized the cities of Mosul and Kirkuk. South of Baghdad, the 2d Armored Cavalry Regiment assumed responsibility for securing lines of communication under the operational control of the 82d Airborne Division. Additional forces moved west of the capital toward the Syrian border, while the 3d Armored Cavalry Regiment and the 4<sup>th</sup> Infantry Division prepared to enter Iraq.

With the war apparently ending, operations shifted to stability and support. On May 1, major combat operations were declared ended in Iraq. The nation lay in disarray, with its political machinery and economy destroyed. Saddam Hussein no longer held sway, but the threat of sectarian violence soon began to emerge among Sunni and Shiite Muslims. Providing security and restoring—in some cases rebuilding—basic services became priority missions for the coalition forces. The Coalition Provisional Authority assumed leadership over the nation, pending the creation of a new Iraqi government.

Violence continued. Periodic shootings, criminal activity, random attacks on coalition forces, and roadside ambushes occurred amid the chaos of postwar Iraq. At first these actions lacked organization and purpose. Yet over time the frequency of these incidents rose. A resistance movement had arisen, aimed at removing Coalition forces from Iraq. Foreign terrorists joined with ex-Saddam Hussein supporters to incite further violence and undermine American-led nation building efforts. Improvised explosive devices became the trademark of this resistance, but shootings of government officials, attacks on police stations, and ambushes of convoys from Kuwait became regular occurrences.



# The Global War on Terror

Armor personnel found themselves helping to rebuild communities and infrastructure. Civilian interaction occurred simultaneous with counter terror operations. In the latter case, missions often included convoy security, cordon and search, raids against suspected terrorist strong points, and the apprehension of known terror leaders. Senior members of Saddam Hussein's regime were also tracked down and arrested. The most significant capture was made in December 2003 by members of the 4<sup>th</sup> Infantry Division. In Tikrit, they found and captured Saddam Hussein.

Rebuilding Iraq's police and military forces required time. Equipment proved in short supply. American and allied Soldiers provided training, but they could not entirely prevent Iraqis serving in these nascent institutions from being the targets of terror. Civilians waiting outside police and government buildings seeking employment too often became victims of suicide bombers. Checkpoints and roadside searches interfered with but did not stop terrorist action.

In 2004, however, several locations considered terrorist strong points became the target of major operations by American forces. Fallujah, An Najaf, and Sadr City all witnessed significant fighting. In these instances, terrorists sought to use the urban landscape to offset the technological superiority of American troops. The resultant battles occurred at short range amid streets, houses, and market places. Terrorists sought to use mosques and holy sites as shields. Such tactics failed when confronted with the intelligent use of combined arms tactics and aggressive maneuver.

In these battles the Abrams and Cavalry Fighting Vehicle team fared well. Tactics were developed to exploit the superior armor protection of both vehicles. Their firepower and survivability made them the weapon of choice to lead attacks into urban areas. They provided effective fire support to the Soldiers charged with clearing individual structures. In locations where artillery and air support could not be employed without significant risk to civilians, armor was used to provide precision fires.

The proven value of these platforms, even in urban areas, resulted in renewed Army interest. Heavy force programs began to receive greater attention and funding than they had before the war. Development work upon the FCS continued, but its pace slowed as funding shifted to support more conventional combat vehicles. Upgrade programs previously in danger of cancellation were now restored. Platform modifications based on the Iraq experience resulted, and a canister round for the Abrams main gun entered the theater in 2005.

The Stryker also proved effective in Iraq. It began operations there in late 2003. Its speed and quietness of operation made it ideal for rapid raids upon terrorist safe havens at unexpected times. To provide improved protection against rocket propelled grenades, Strykers in Iraq were fitted with slat armor, which caused the premature detonation of shaped charge projectiles. Mine and suicide bomber attacks tended to damage rather than destroy the Stryker, enhancing crew survivability.

# The Global War on Terror



# The Global War on Terror

The HMMWV proved too vulnerable to terrorist attacks, particularly IEDs. Increased fielding of the up-armored version helped to improve survivability of the crew but the vehicle itself often suffered extensive damage. The Army sought a better protected vehicle, especially for use in supply convoys, which became frequent insurgent targets. The Mine Resistant Ambush Protected (MRAP) platforms resulted. These vehicles were fielded in different configurations, but all shared much better ballistic protection and a unique shape that made them less vulnerable to IED attacks. However, these platforms were not intended for tactical operations. Armor sought a more effective scout platform to replace the HMMWV. In the interim, survivability was improved by integrating the HMMWV and M3 Cavalry Fighting Vehicle in the same platoon.

Platform modifications did not alter the nature of operations undertaken by Armor soldiers in Iraq. They continued to execute both combat missions against known terrorist targets simultaneous with helping the Iraqi populace rebuild their nation and transition to a government no longer dominated by a single strongman. Elections in 2005 established a transitional Iraqi government, but violence continued. The following year sectarian violence between Shiite and Sunni groups threatened to plunge Iraq into chaos. American and coalition forces struggled to suppress this violence while sustaining reconstruction projects.

A surge of American forces into Iraq began late in 2006 and continued into 2007. Their focus lay in reasserting coalition control over the capital. This objective was accomplished in part through combat operations and the establishment of combat outposts throughout the city, which inserted coalition Soldiers into neighborhoods on a permanent basis. In addition, efforts to work with Sunni leaders disenchanted with the brutality of Al Qaeda terrorists resulted in growing Sunni support for a more stable Iraq. American soldiers benefited from the support of Sunnis in their counterinsurgency efforts, while the Iraqi government began to assert its authority. Conditions in Iraq improved dramatically. By 2010, American forces had begun to withdraw from the country, transferring primary responsibility for security to Iraqi forces trained by coalition personnel. Further force reductions continued in accordance with an agreement between the US and Iraqi governments that mandated the withdrawal of all American combat troops by 2011.

Armor played a key role in these positive developments. Armor and cavalry organizations became more adept at apprehending insurgents and preventing IED attacks. Often Armor Soldiers conducted dismounted operations, interacting with the local populace and helping with a host of reconstruction projects in their areas of operation. They also actively supported and trained Iraqi Soldiers. These activities contrasted sharply with the execution of combat operations, and they highlighted the versatility of the mounted Soldier and his adaptability. In Iraq, Armor demonstrated its relevance to counterinsurgency and reconstruction operations, which complemented its more traditional combined arms maneuver capabilities.

# Into the Future

As combat operations in Iraq became less frequent, the Army's focus shifted to Afghanistan. There the Taliban and their Al Qaeda allies had begun to reestablish their presence through suicide bombings, conventional attacks upon American and NATO positions, and a continuous campaign of terror aimed at undermining the credibility of the Afghan government and discouraging loyalty to it. The complex ethnic landscape of Afghanistan coupled with a poor economy and a harsh landscape complicated efforts to eradicate terrorism and build a new, viable state. The US committed itself to this goal, increasing its military forces by 30,000 additional Soldiers. It also worked directly with Pakistan to stop cross-border operations by terrorists while pursuing the deployment of more civilians to assist in rebuilding Afghanistan and assist in the creation of a more effective government.

Armor Soldiers continued to train elements of the Afghan National Army and served as advisers to their Afghan counterparts. They also began to see service in Afghanistan with light units, including a Stryker Brigade Combat Team. With the projected increase in US forces deployed to Afghanistan, the likelihood of more Armor Soldiers serving there became certain. Stateside training therefore began to reflect a greater orientation toward Afghanistan rather than Iraq, although basic combined arms skills remained central to mounted force training. Clearly the basic principles associated with armor and cavalry organizations would be applicable to Afghanistan together with the lessons learned from Iraq.

The Army's continued focus upon counterinsurgency operations and the immediate needs of Soldiers serving overseas led to the cancellation of the FCS. Although many of the technologies associated with this program continued to evolve, the family of vehicles that constituted its backbone did not. Instead, the senior military leadership sought a new ground combat vehicle with greater applicability to the types of conflicts in which the Army was already engaged and would likely continue to be into the foreseeable future. This decision underscored the importance of the proven Abrams/Bradley Fighting Vehicle team, supplemented by the Stryker platform.

These vehicles also reinforced Armor training efforts intended to ensure that mounted Soldiers retained the ability to execute combined arms maneuver even as they mastered counterinsurgency principles and applied them in Iraq and Afghanistan. This balance found reflection in doctrinal developments and in organizational changes intended to ensure that Armor retained its traditional versatility and decisiveness. Army Transformation efforts included the creation of standard brigade combat teams intended either for independent action or as part of a larger formation. These modular organizations made the brigade combat team rather than the division the Army's principal maneuver unit. Armored brigade combat teams included armor and mechanized infantry integrated into combined arms battalions and supported by a reconnaissance squadron, while infantry and Stryker brigade combat teams provided capabilities suited for light force requirements. These new brigade elements shaped the nature of training programs and doctrinal developments and helped establish the Armor's path of future development.



# Basic Missions of Armor and Cavalry

## Role

Tanks are the primary offensive weapons in mounted warfare. Using firepower, protection and speed, they create the shock effect necessary to disrupt the enemy's operations and to defeat him. The following sections describe fundamental doctrine that constitutes tactical and operational concepts of armor and reconnaissance units. The information is derived from current available Army field manuals. Whether assigned to an Abrams tank, Bradley or HMMWV, Armor leaders and Soldiers will participate in some, if not all, of these operations.

### Offensive Operations (from FM 3-90, Tactics)

Offensive operations aim at destroying or defeating an enemy. Their purpose is to impose US will on the enemy and achieve decisive victory (ADRP 3-0). A commander may also conduct offensive operations to deprive the enemy of resources, seize decisive terrain, deceive or divert the enemy, develop intelligence, or hold an enemy in position.

The four types of offensive operations are movement to contact, attack, exploitation, and pursuit. Entry operations, while offensive in nature, are one of the six subordinate forms of force-projection operations.

*Movement to contact* is a type of offensive operation designed to develop the situation and establish or regain contact (ADRP 3-0). The commander conducts a movement to contact (MTC) when the enemy situation is vague or not specific enough to conduct an attack.

An *attack* is an offensive operation that destroys or defeats enemy forces, seizes and secures terrain, or both (ADRP 3-0). Movement, supported by fires, characterizes the conduct of an attack. An attack differs from a MTC because enemy main body dispositions are at least partially known, which allows the commander to achieve greater synchronization. This enables him to mass the effects of the attacking force's combat power more effectively in an attack than in a MTC. Special purpose attacks are ambush, spoiling attack, counterattack, raid, feint, and demonstration. The commander's intent and the factors of METT-TC determine which of these forms of attack are employed. He can conduct each of these forms of attack, except for a raid, as either a hasty or a deliberate operation.

*Exploitation* is a type of offensive operation that rapidly follows a successful attack and is designed to disorganize the enemy in depth. The objective of an exploitation is to complete the enemy's disintegration.

A *pursuit* is an offensive operation designed to catch or cut off a hostile force attempting to escape, with the aim of destroying it (JP 1-02). A pursuit normally follows a successful exploitation. However, if it is apparent that enemy resistance has broken down entirely and the enemy is fleeing the battlefield, any other type or subordinate form of offensive operation can transition into a pursuit.

# Basic Missions of Armor and Cavalry

## Defensive Operations

Defensive operations defeat an enemy attack, buy time, economize forces, or develop conditions favorable for offensive operations. Defensive operations alone normally cannot achieve a decision. Their purpose is to create conditions for a counteroffensive that allows Army forces to regain the initiative (ADRP 3-0). Other reasons for conducting defensive operations include—

Retaining decisive terrain or denying a vital area to the enemy.

Attrite or fixing the enemy as a prelude to offensive operations.

Surprise action by the enemy.

Increasing the enemy's vulnerability by forcing him to concentrate his forces.

There are three basic types of defensive operations: the area defense, the mobile defense, and the retrograde. These three types have significantly different concepts and pose significantly different challenges. Although the names of these types of defensive operations convey the overall aim of a selected defensive operation, each typically contains elements of the other and combines static and mobile elements.

The *area defense* is a type of defensive operation that concentrates on denying enemy forces access to designated terrain for a specific time rather than destroying the enemy outright (ADRP 3-0). The focus of the area defense is on retaining terrain where the bulk of the defending force positions itself in mutually supporting, prepared positions. Units maintain their positions and control the terrain between these positions. The decisive operation focuses on fires into EAs possibly supplemented by a counterattack. The reserve may or may not take part in the decisive operation. The commander can use his reserve to reinforce fires; add depth, block, or restore the position by counterattack; seize the initiative; and destroy enemy forces. Units at all echelons can conduct an area defense.

The *mobile defense* is a type of defensive operation that concentrates on the destruction or defeat of the enemy through a decisive attack by a striking force (ADRP 3-0). The mobile defense focuses on defeating or destroying the enemy by allowing him to advance to a point where he is exposed to a decisive counterattack by the striking force. The decisive operation is a counterattack conducted by the striking force. The striking force is a dedicated counterattack force constituting the bulk of available combat power. A fixing force supplements the striking force. The commander uses his fixing force to hold attacking enemy forces in position, to help channel attacking enemy forces into ambush areas, and to retain areas from which to launch the striking force. A mobile defense requires an AO of considerable depth.

The *retrograde* is a type of defensive operation that involves organized movement away from the enemy (ADRP 3-0). The enemy may force these operations, or a commander may execute them voluntarily. The higher commander of the force executing the retrograde must approve the retrograde operation before its initiation in either case. The retrograde is a transitional operation; it is not conducted in isolation. It is part of a larger scheme of maneuver designed to regain the initiative and defeat the enemy.

# Basic Missions of Armor and Cavalry

## Reconnaissance

Field Manual 3-20.98 (Reconnaissance and Scout Platoon) provides basic tactics, techniques, and procedures (TTP) for the tactical employment of the reconnaissance and scout platoons of the reconnaissance squadrons in the Armor, Infantry, and Stryker brigade combat teams (ABCT, IBCT, and SBCT) as well as the Reconnaissance & Surveillance Brigade's (RSB) reconnaissance and surveillance squadron.

Reconnaissance and scout platoons will conduct reconnaissance to provide their commander with information that has tactical value concerning the enemy, terrain, weather, and civil considerations within an AO. Scouts reconnoiter terrain to determine current and future movement and maneuver conditions. Once contact with the enemy is made, they determine the enemy's disposition, strengths, and weaknesses in detail. The platoon provides the information necessary to allow combined arms forces to maneuver against the enemy, strike where the enemy is most vulnerable, and apply overwhelming power to defeat it. In addition, scouts must be able to perform the multidimensional aspect of reconnaissance to gather the information needed for execution of stability operations and civil support operations.

Scouts reconnoiter terrain to determine movement and maneuver conditions relevant to both friendly and enemy forces. Scouts must thoroughly understand how the enemy deploys its reconnaissance and security forces, as well as the sequence and timing of their entry into the AO. When they find the enemy, scouts determine its disposition, strengths, and weaknesses in detail. The scouts' accurate and timely reporting of enemy locations and strength can make the difference between success and failure of the operation.

The seven fundamentals are common to all successful reconnaissance operations. Scout leaders must ensure that their planning, preparation, and execution of reconnaissance missions adhere to these fundamentals. These fundamentals are covered in the following discussion during the execution of reconnaissance missions. For additional information, refer to ADRP 3-20.96 and ADRP 3-90:

- Ensure continuous reconnaissance.
- Do not keep reconnaissance assets in reserve.
- Orient on the reconnaissance objective.
- Report all information rapidly and accurately.
- Retain freedom of maneuver.
- Gain and maintain threat contact.
- Develop the situation rapidly.

# Basic Missions of Armor and Cavalry

## Stability Operations

The overarching goal of stability operations is to promote and sustain regional and global stability. Because of this, US forces do not conduct these operations independently of other operations; but to complement and reinforce offensive and defensive operations. There are times, however, when stability operations are the dominant operations. Army forces conduct stability operations in crisis situations and before, during, and after offensive or defensive operations. In a crisis, a stability operation can deter conflict or prevent escalation. During hostilities, it can help keep armed conflict from spreading, and assist and encourage committed partners. Following hostilities, a stability operation can provide a secure environment in which civil authorities can work to regain control. Demonstrating the ability to conduct offensive and defensive operations underlies successful stability operations. The purpose of stability operations is to:

- Isolate adversaries from the local population.

- Gain support for the indigenous government.

- Provide the necessary security and control for the host nation and inter-agency elements to function.

- Develop an indigenous capacity for securing and providing essential services, a viable market economy, rule of law, and democratic institutions.

Stability operations are inherently complex and place greater demands at the small unit level. Junior leaders are required to develop engagement skills (such as cultural awareness, negotiating techniques, tactical questioning and critical language phrases) while maintaining warfighting skills. Especially critical to success are capable, trained, disciplined, and high quality leaders, Soldiers, and teams. Soldiers and units at every level must be flexible and adaptive. Stability operations often require the mental and physical agility to shift from noncombat to combat operations and back again.

Armor forces, as part of larger military forces, conduct stability operations to accomplish one or more of the activities listed below. These operations demonstrate the United States' resolve through the commitment of time, resources, and forces to establish and reinforce diplomatic and military ties. Stability operations can:

- Protect national interests, promote peace and deter aggression.

- Satisfy treaty obligations or enforce agreements and policies.

- Reassure allies and friendly governments.

- Maintain or restore order and protect life and property.

- Demonstrate resolve.

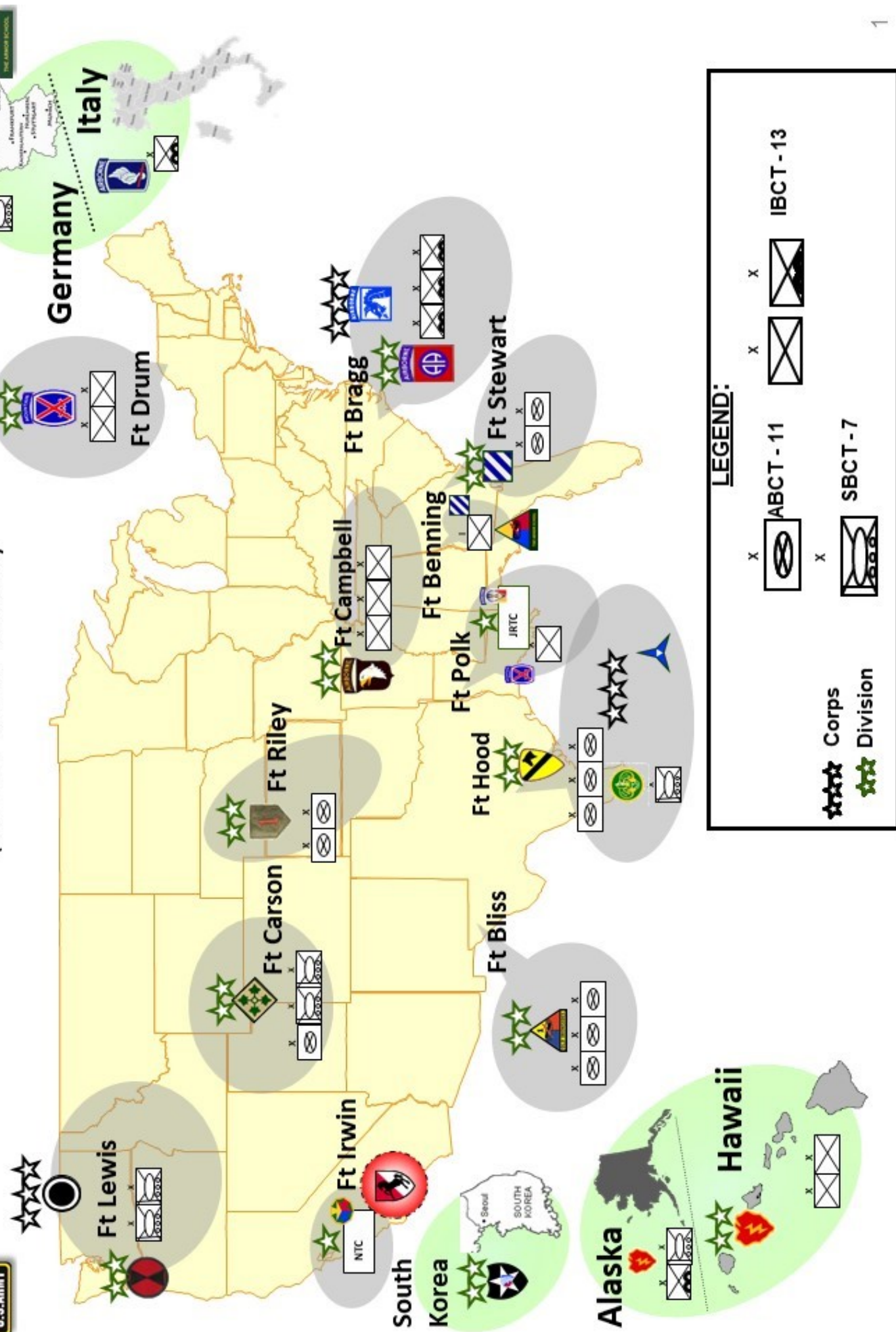
- Prevent, deter, or respond to terrorism.

- Reduce the threat of conventional arms and weapons of mass destruction (WMD) to regional security.

- Protect freedom from oppression, subversion, law.

# ARMOR LOCATIONS

(Endstate 2020)



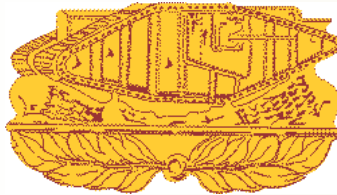
**LEGEND:**

- X [Symbol] ABCT - 11
- X [Symbol] IBCT - 13
- [Symbol] Corps
- [Symbol] Division
- X [Symbol] SBCT - 7

# Historical Branch Insignia



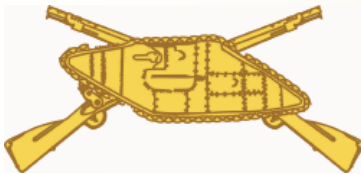
Paragraph 36, Change 1 to War Department Special Regulations No. 42, dated 29 December 1917, stated that "the insignia on the collar of the coat for Tank Service would be a conventionalized tank, 1 inch high, with the number of the regiment attached to the bottom". The approved design was a front view of a French tank



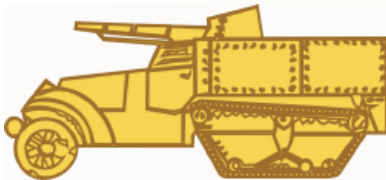
The insignia approved in 1917 was not well received and a new design was announced for the Tank Corps per Change 2 to Service Regulation 42, dated 7 May 1918. The new design showed the side view of a Mark VIII Tank above two stylized dragons breathing fire over a wreath. War Department Circular 72, dated 16 March 1921, eliminated the insignia of the Tank Corps.



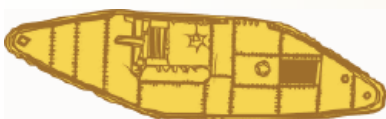
When the Tank Corps was abolished, tankers assigned to the Infantry were authorized this insignia from October 1921 until February 1923.



In a letter dated 21 March 1922, The Adjutant General approved a new design for Infantry (Tanks). Change 2, AR 600-35, dated 28 March 1922, prescribed the insignia for Infantry (Tanks) to be "The Infantry insignia with tank superimposed.



Change 15, AR 600-35, dated 13 March 1943, added the insignia for Tank Destroyer Forces. This change specified the design was a "75-mm gun, motor carriage M3, in gold color metal." The insignia was rescinded by Change 2, AR 600-35, dated 28 November 1944.



A new insignia for the Armored Forces was authorized by War Department Circular 56, dated 25 February 1942. This insignia was the side-view of the Mark VIII Tank used in World War I. The insignia was continued in use until the Armor Branch was established in February 1951. The new insignia was the result of the Army Reorganization Act of 1950 as announced in Army Bulletin No. 9. The Armored Forces and Cavalry were combined into a single branch called Armor. The Armored Forces insignia was no longer used; however, the Cavalry was continued in use as a collar insignia for personnel assigned to Cavalry Units.

# RESERVE COMPONENT

The Reserve Components (RC) of the United States Army are the US Army National Guard (ARNG) and the US Army Reserve (USAR). The nation's security requirements in the past decade have clearly demonstrated that the Army National Guard and the Army Reserve are full partners in America's Total Army. The Guard and Reserve quickly transformed from the role of Strategic Reserve Forces to Operational Reserves, serving in Operations Noble Eagle, Enduring Freedom, and Iraqi Freedom. More than 225,000 Reserve Component Soldiers were mobilized and have served in direct combat with another 150,000 Soldiers mobilized in mission support roles across the globe. In all theaters, Reserve Component Citizen-Soldiers served with distinction and answered the nation's call to defend the ideals of freedom and democracy.

## THE ARMY NATIONAL GUARD

The Army National Guard is our nation's oldest military force. It traces its lineage to the three Regiments formed in the Massachusetts Bay Colonies in 1636. National Guard Soldiers are Citizen-Soldiers, who fulfill dual roles as ordinary citizens and as members of the Armed Forces of the United States. The ARNG's Citizen-Soldiers have been mobilized and fought in every one of our Nation's wars. The Guard is a community-based military organization and, as such, is prepared to assist cities and towns in times of natural or man-made disaster. The Guard has a unique distinction in that it must be prepared to respond to both State and Federal missions.



Today the ARNG, as part of the U.S. Army, is transforming itself to better prosecute overseas contingency operations while remaining a ready and relevant force that is prepared to defend our homeland and provide emergency relief against natural disasters. The ARNG is transforming into a modular force that will provide more flexible, responsive, and capabilities-based units that will seamlessly integrate into the larger Army. As the Army transforms itself from the Current Force to the Future Force, so will the Army National Guard.

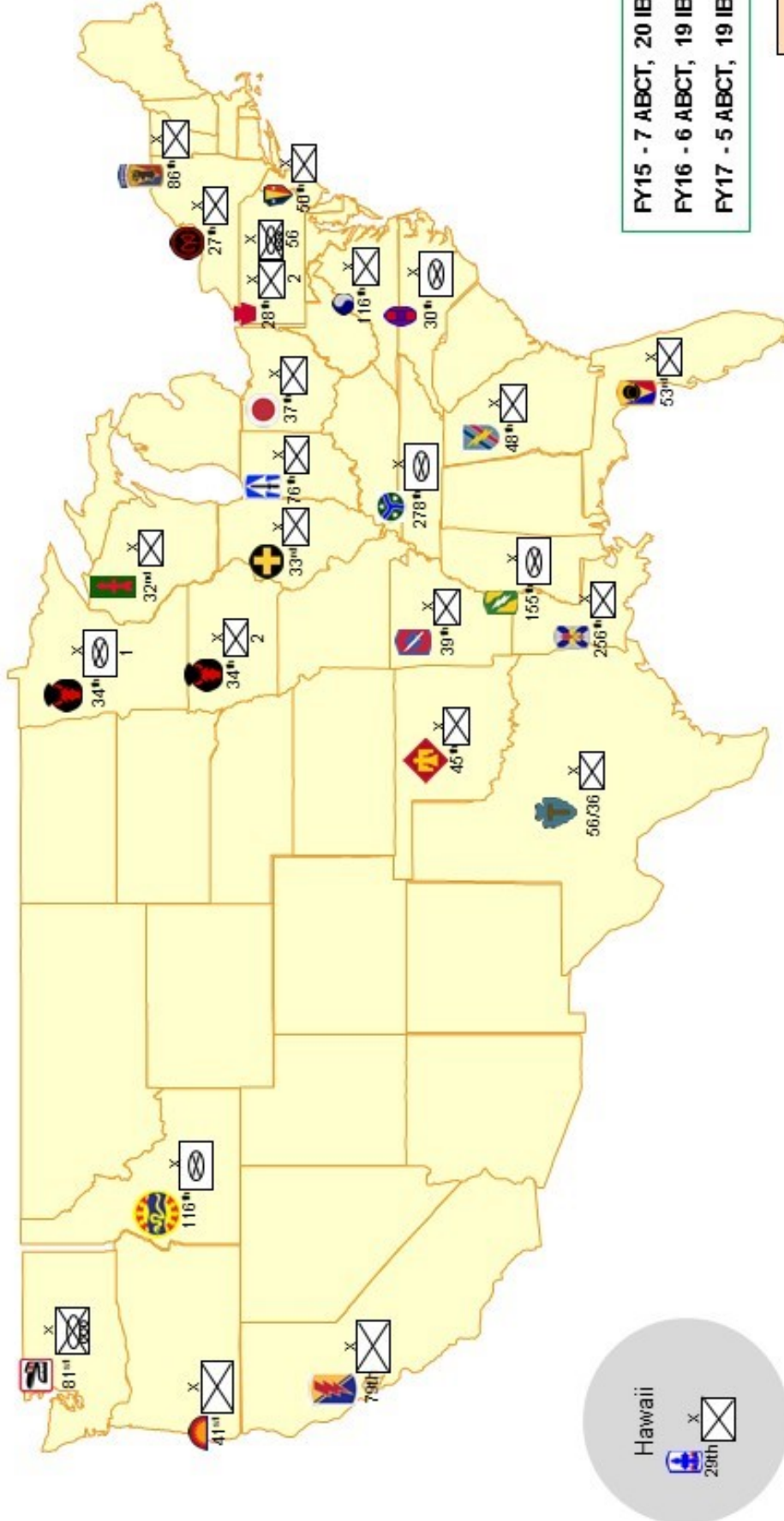
The map illustrates the primary building block of the modular force, the Brigade Combat Team (BCT). The ARNG Armored BCTs (ABCT) have both 19Ds and 19Ks serving in their Combined Arms Battalions (CAB) and Cavalry Squadrons. Infantry BCTs (IBCT) and Stryker BCTs (SBCT) have 19Ds serving in their Cavalry Squadrons.

## THE ARMY RESERVE

The US Army Reserve was organized in 1908 to provide a pool of physicians to support the Medical Department of the US Army in response to shortages in the Spanish-American War. From those modest beginnings, the Reserve has grown to a force of over 200,000 unit members who serve in all branches of the Army in combat, combat support, and combat service support units. The USAR's 100th Division (Institutional Training) directly supports the Armor and Cavalry force by providing Officers and NCOs who train Soldiers at the US Armor Center. The USAR also has Training Support Brigades and Battalions that integrate Active, Guard, and Reserve Soldiers into a training support element that supports ARNG and USAR Units collective training for mobilizations.



# ARNG Brigade Combat Teams



FY15 - 7 ABCT, 20 IBCT, 1 SBCT (28)  
 FY16 - 6 ABCT, 19 IBCT, 1 SBCT (26)  
 FY17 - 5 ABCT, 19 IBCT, 2 SBCT (26)

**BCTs**

- Armored BCT
- Infantry BCT
- Infantry BCT (Airborne)
- Stryker BCT

**Changes**

- Convert ARNG ABCT to SBCT in FY17
  - SBCT HQ and two battalions in WA; one battalion in CA; cavalry squadron in OR



# Armor's Principal Combat Vehicles

## Light Tanks



<b>Vehicle</b>	<b>6-Ton Light Tank</b>
<b>Entered Service</b>	1918
<b>Weight</b>	7.25 tons
<b>Armament</b>	37mm or 1xMG
<b>Max Speed</b>	5 mph
<b>Cruising Range</b>	30 miles
<b>Power</b>	42 hp
<b>Crew Size</b>	2
<b>Height</b>	7ft. 5in.

<b>Vehicle</b>	<b>M2A3 Light Tank</b>
<b>Entered Service</b>	1938
<b>Weight</b>	10.5 tons
<b>Armament</b>	.50 MG, 2x.30 MG
<b>Max Speed</b>	36 mph
<b>Cruising Range</b>	100 miles
<b>Power</b>	250 hp
<b>Crew Size</b>	4
<b>Height</b>	7ft. 8in.



<b>Vehicle</b>	<b>M1 Combat Car</b>
<b>Entered Service</b>	1935
<b>Weight</b>	9.5 tons
<b>Armament</b>	4xMG
<b>Max Speed</b>	45 mph
<b>Cruising Range</b>	75 miles
<b>Power</b>	250 hp
<b>Crew Size</b>	4
<b>Height</b>	7ft. 9in.

<b>Vehicle</b>	<b>M3</b>
<b>Entered Service</b>	1940
<b>Weight</b>	14 tons
<b>Armament</b>	37mm, 5xMG
<b>Max Speed</b>	34 mph
<b>Cruising Range</b>	100 miles
<b>Power</b>	220 hp
<b>Crew Size</b>	4
<b>Height</b>	8ft. 8in.



# Armor's Principal Combat Vehicles

## Light Tanks



<b>Vehicle</b>	<b>M3A1</b>
<b>Entered Service</b>	1942
<b>Weight</b>	14 tons
<b>Armament</b>	37mm, 3xMG
<b>Max Speed</b>	34 mph
<b>Cruising Range</b>	100 miles
<b>Power</b>	220 hp
<b>Crew Size</b>	4
<b>Height</b>	7ft. 10in.

<b>Vehicle</b>	<b>M5A1</b>
<b>Entered Service</b>	1943
<b>Weight</b>	16 tons
<b>Armament</b>	37mm, 3xMG
<b>Max Speed</b>	40 mph
<b>Cruising Range</b>	105 miles
<b>Power</b>	220 hp
<b>Crew Size</b>	4
<b>Height</b>	7ft. 6.5in.



<b>Vehicle</b>	<b>M24</b>
<b>Entered Service</b>	1944
<b>Weight</b>	20 tons
<b>Armament</b>	75mm, 3xMG
<b>Max Speed</b>	34 mph
<b>Cruising Range</b>	100 miles
<b>Power</b>	220 hp
<b>Crew Size</b>	5
<b>Height</b>	7ft. 3in.

<b>Vehicle</b>	<b>M41A3</b>
<b>Entered Service</b>	1956
<b>Weight</b>	26 tons
<b>Armament</b>	1x76mm, 2xMG
<b>Max Speed</b>	45 mph
<b>Cruising Range</b>	110 miles
<b>Power</b>	440 hp
<b>Crew Size</b>	4
<b>Height</b>	9ft.



# Armor's Principal Combat Vehicles

## Medium/Heavy Tanks



<b>Vehicle</b>	<b>Mark VIII</b>
<b>Entered Service</b>	1919
<b>Weight</b>	44 tons
<b>Armament</b>	2x6-pounder guns, 5xMG
<b>Max Speed</b>	5.5 mph
<b>Cruising Range</b>	40 miles
<b>Power</b>	338 hp
<b>Crew Size</b>	11
<b>Height</b>	10ft. 2.5in.

<b>Vehicle</b>	<b>M2A1</b>
<b>Entered Service</b>	1940
<b>Weight</b>	23.5 tons
<b>Armament</b>	37mm, 8xMG
<b>Max Speed</b>	26 mph
<b>Cruising Range</b>	130 miles
<b>Power</b>	400 hp
<b>Crew Size</b>	6
<b>Height</b>	9ft. 4.5in.



<b>Vehicle</b>	<b>M3A1</b>
<b>Entered Service</b>	1941
<b>Weight</b>	31 tons
<b>Armament</b>	75mm, 37mm, 4xMG
<b>Max Speed</b>	21 mph
<b>Cruising Range</b>	100 miles
<b>Power</b>	340 hp
<b>Crew Size</b>	6
<b>Height</b>	9ft. 11in.

<b>Vehicle</b>	<b>M4A3</b>
<b>Entered Service</b>	1942
<b>Weight</b>	35 tons
<b>Armament</b>	75mm, 3xMG
<b>Max Speed</b>	26 mph
<b>Cruising Range</b>	100 miles
<b>Power</b>	500 hp
<b>Crew Size</b>	5
<b>Height</b>	9ft. 2in.



# Armor's Principal Combat Vehicles

## Medium/Heavy Tanks



<b>Vehicle</b>	<b>M4A3E8</b>
<b>Entered Service</b>	1944
<b>Weight</b>	37 tons
<b>Armament</b>	76mm, 3xMG
<b>Max Speed</b>	26 mph
<b>Cruising Range</b>	100 miles
<b>Power</b>	450 hp
<b>Crew Size</b>	5
<b>Height</b>	9ft. 7in.

<b>Vehicle</b>	<b>M26</b>
<b>Entered Service</b>	1945
<b>Weight</b>	46 tons
<b>Armament</b>	90mm, 3xMG
<b>Max Speed</b>	30 mph
<b>Cruising Range</b>	92 miles
<b>Power</b>	500 hp
<b>Crew Size</b>	5
<b>Height</b>	8ft. 1in.



<b>Vehicle</b>	<b>M46</b>
<b>Entered Service</b>	1948
<b>Weight</b>	46 tons
<b>Armament</b>	90mm, 3xMG
<b>Max Speed</b>	30 mph
<b>Cruising Range</b>	92 miles
<b>Power</b>	500 hp
<b>Crew Size</b>	5
<b>Height</b>	9ft. 1in.

<b>Vehicle</b>	<b>M47</b>
<b>Entered Service</b>	1953
<b>Weight</b>	48 tons
<b>Armament</b>	90mm, 3xMG
<b>Max Speed</b>	37 mph
<b>Cruising Range</b>	93 miles
<b>Power</b>	810 hp
<b>Crew Size</b>	5
<b>Height</b>	9ft. 8in.



# Armor's Principal Combat Vehicles

## Medium/Heavy Tanks



<b>Vehicle</b>	<b>M48</b>
<b>Entered Service</b>	1953
<b>Weight</b>	49.5 tons
<b>Armament</b>	90mm, 2xMG
<b>Max Speed</b>	28 mph
<b>Cruising Range</b>	75 miles
<b>Power</b>	810 hp
<b>Crew Size</b>	4
<b>Height</b>	9ft. 10in.

<b>Vehicle</b>	<b>M48A2/A3</b>
<b>Entered Service</b>	1956
<b>Weight</b>	49.5 tons
<b>Armament</b>	90mm, 2xMG
<b>Max Speed</b>	40 mph
<b>Cruising Range</b>	160 miles
<b>Power</b>	825 hp
<b>Crew Size</b>	4
<b>Height</b>	9ft. 10in.



<b>Vehicle</b>	<b>M103</b>
<b>Entered Service</b>	1958
<b>Weight</b>	62.5 tons
<b>Armament</b>	120mm, 2xMG
<b>Max Speed</b>	21 mph
<b>Cruising Range</b>	80 miles
<b>Power</b>	810 hp
<b>Crew Size</b>	5
<b>Height</b>	11ft. 8in.

<b>Vehicle</b>	<b>M60</b>
<b>Entered Service</b>	1960
<b>Weight</b>	51 tons
<b>Armament</b>	105mm, 2xMG
<b>Max Speed</b>	30 mph
<b>Cruising Range</b>	310 miles
<b>Power</b>	750 hp
<b>Crew Size</b>	4
<b>Height</b>	10ft.



# Armor's Principal Combat Vehicles

## Medium/Heavy Tanks



<b>Vehicle</b>	<b>M60A1</b>
<b>Entered Service</b>	1962
<b>Weight</b>	53 tons
<b>Armament</b>	105mm, 2xMG
<b>Max Speed</b>	30 mph
<b>Cruising Range</b>	310 miles
<b>Power</b>	750 hp
<b>Crew Size</b>	4
<b>Height</b>	10ft. 9.5in.

<b>Vehicle</b>	<b>M60A2</b>
<b>Entered Service</b>	1974
<b>Weight</b>	53 tons
<b>Armament</b>	152mm gun/missile, 2xMG
<b>Max Speed</b>	30 mph
<b>Cruising Range</b>	310 miles
<b>Power</b>	750 hp
<b>Crew Size</b>	4
<b>Height</b>	10ft. 8in.



<b>Vehicle</b>	<b>M60A3</b>
<b>Entered Service</b>	1979
<b>Weight</b>	53 tons
<b>Armament</b>	105mm, 2xMG
<b>Max Speed</b>	30 mph
<b>Cruising Range</b>	298 miles
<b>Power</b>	750 hp
<b>Crew Size</b>	4
<b>Height</b>	10ft. 7in.

<b>Vehicle</b>	<b>M1</b>
<b>Entered Service</b>	1981
<b>Weight</b>	60 tons
<b>Armament</b>	105mm, 3xMG
<b>Max Speed</b>	42 mph
<b>Cruising Range</b>	288 miles
<b>Power</b>	1500 hp
<b>Crew Size</b>	4
<b>Height</b>	8ft.



# Armor's Principal Combat Vehicles

## Medium/Heavy Tanks



<b>Vehicle</b>	<b>M1A1</b>
<b>Entered Service</b>	1985
<b>Weight</b>	68 tons
<b>Armament</b>	120mm, 3xMG
<b>Max Speed</b>	42 mph
<b>Cruising Range</b>	288 miles
<b>Power</b>	1500 hp
<b>Crew Size</b>	4
<b>Height</b>	8ft.

<b>Vehicle</b>	<b>M1A2</b>
<b>Entered Service</b>	1992
<b>Weight</b>	68.7 tons
<b>Armament</b>	120mm, 3xMG
<b>Max Speed</b>	42 mph
<b>Cruising Range</b>	298 miles
<b>Power</b>	1500 hp
<b>Crew Size</b>	4
<b>Height</b>	8ft.



## Other Armor Combat Vehicles



<b>Vehicle</b>	<b>M3 Half-Track</b>
<b>Entered Service</b>	1941
<b>Weight</b>	10 tons
<b>Armament</b>	1xMG
<b>Max Speed</b>	45 mph
<b>Cruising Range</b>	200 miles
<b>Power</b>	147 hp
<b>Crew Size</b>	3
<b>Height</b>	8ft. 2in.

<b>Vehicle</b>	<b>M59 APC</b>
<b>Entered Service</b>	1954
<b>Weight</b>	21 tons
<b>Armament</b>	1xMG
<b>Max Speed</b>	32 mph
<b>Cruising Range</b>	102 miles
<b>Power</b>	127 hp
<b>Crew Size</b>	2
<b>Height</b>	7ft. 10in.



# Armor's Principal Combat Vehicles

## Other Armor Combat Vehicles



<b>Vehicle</b>	<b>M113 APC</b>
<b>Entered Service</b>	1964
<b>Weight</b>	12.3 tons
<b>Armament</b>	1xMG
<b>Max Speed</b>	40 mph
<b>Cruising Range</b>	200 miles
<b>Power</b>	215 hp
<b>Crew Size</b>	2
<b>Height</b>	8ft. 2in.

<b>Vehicle</b>	<b>ACAV</b>
<b>Entered Service</b>	1965
<b>Weight</b>	12.3 tons
<b>Armament</b>	3xMG
<b>Max Speed</b>	40 mph
<b>Cruising Range</b>	200 miles
<b>Power</b>	215 hp
<b>Crew Size</b>	3
<b>Height</b>	8ft. 2in.



<b>Vehicle</b>	<b>M551A1</b>
<b>Entered Service</b>	1969
<b>Weight</b>	18 tons
<b>Armament</b>	152mm gun/missile, 1xMG
<b>Max Speed</b>	43 mph
<b>Cruising Range</b>	373 miles
<b>Power</b>	255 hp
<b>Crew Size</b>	4
<b>Height</b>	7ft. 5in.

<b>Vehicle</b>	<b>M3 CFV</b>
<b>Entered Service</b>	1982
<b>Weight</b>	29.8 tons
<b>Armament</b>	25mm, TOW missile, 1xMG
<b>Max Speed</b>	43 mph
<b>Cruising Range</b>	373 miles
<b>Power</b>	500 hp
<b>Crew Size</b>	3
<b>Height</b>	9ft. 1in.





# Armor's Principal Combat Vehicles

## Other Armor Combat Vehicles



<b>Vehicle</b>	<b>Stryker RV M1127</b>
<b>Entered Service</b>	2003
<b>Weight</b>	38 tons
<b>Armament</b>	1xMG/1x40mm MK 19, LRAS3
<b>Max Speed</b>	62 mph
<b>Cruising Range</b>	300 miles
<b>Power</b>	350shp
<b>Crew Size</b>	2
<b>Height</b>	9ft

<b>Vehicle</b>	<b>Stryker MGS M1128</b>
<b>Entered Service</b>	INA
<b>Weight</b>	41 tons
<b>Armament</b>	105mm, 2xMG
<b>Max Speed</b>	60 mph
<b>Cruising Range</b>	330 miles
<b>Power</b>	350shp
<b>Crew Size</b>	3
<b>Height</b>	9ft



<b>Vehicle</b>	<b>M1114 Up-Armored HMMWV</b>
<b>Entered Service</b>	1996
<b>Weight</b>	1 1/4 tons
<b>Armament</b>	3xMGS/40mm MK 19/LRAS3
<b>Max Speed</b>	78 mph
<b>Cruising Range</b>	274 miles
<b>Power</b>	190 hp
<b>Crew Size</b>	2 to 4
<b>Height</b>	76 in



# **CHIEFS OF ARMOR**

## *“Thunderbolt 6”*



- |                                 |                                |
|---------------------------------|--------------------------------|
| 1. MG Adna R. Chaffee, Jr.      | November 1938 - August 1941    |
| 2. MG Jacob L. Devers           | August 1941 - May 1943         |
| 3. MG Alvan C. Gillem, Jr.      | May 1943 - November 1943       |
| 4. MG Charles L. Scott          | December 1943 - October 1945   |
| 5. MG Hugh Gaffey               | October 1945 - June 1946       |
| 6. MG John W. Leonard           | July 1946 - June 1948          |
| 7. MG William G. Livsey         | June 1948 - June 1950          |
| 8. BG Thomas L. Harrold         | July 1950 - February 1951      |
| 9. MG Ira P. Swift              | February 1951                  |
| 10. MG David G. Barr            | February 1951 - July 1951      |
| 11. BG A.R. Walk                | July 1951 - August 1951        |
| 12. MG Issac D. White           | August 1951 - August 1952      |
| 13. MG John H. Collier          | August 1952 - July 1954        |
| 14. MG George W. Read, Jr.      | July 1954 - July 1955          |
| 15. MG Charles V. Bromley       | July 1955 - March 1956         |
| 16. BG William H. Wood          | April 1956                     |
| 17. MG John L. Ryan, Jr.        | April 1956 - March 1959        |
| 18. MG W. Paul Johnson          | April 1959 - July 1961         |
| 19. MG Samuel L. Meyers         | August 1961 - October 1961     |
| 20. MG Joseph E. Bastion, Jr.   | October 1961 - September 1964  |
| 21. MG Andrew J. Boyle          | September 1964 - November 1965 |
| 22. BG Albin F. Irzyk           | November 1965 - January 1966   |
| 23. MG Alexander D. Surles, Jr. | January 1966 - April 1968      |
| 24. MG J. W. Sutherland, Jr.    | June 1968 - March 1970         |
| 25. MG Richard L. Irby          | March 1970 - March 1971        |
| 26. MG W. R. Desobry            | April 1971 - May 1973          |
| 27. MG Donn A. Starry           | June 1973 - February 1976      |
| 28. MG John W. McEnery          | February 1976 - January 1978   |
| 29. MG Thomas P. Lynch          | January 1978 - June 1980       |
| 30. MG Louis C. Wagner, Jr.     | June 1980 - January 1983       |
| 31. MG Frederic J. Brown III    | January 1983 - June 1986       |
| 32. MG Thomas H. Tait           | June 1986 - August 1989        |
| 33. MG Thomas C. Foley          | August 1989 - July 1992        |
| 34. MG Paul E. Funk             | July 1992 - October 1993       |
| 35. MG Larry R. Jordan          | October 1993 - June 1995       |
| 36. MG Lon E. Maggart           | June 1995 - October 1996       |
| 37. MG George H. Harmeyer       | October 1996 - July 1999       |
| 38. MG Burwell B. Bell III      | July 1999 - August 2001        |
| 39. MG Steven Whitcomb          | August 2001 - January 2003     |



# **CHIEFS OF ARMOR**

## *“Thunderbolt 6”*



40. MG Terry L. Tucker	January 2003 - October 2005
41. MG Robert M. Williams	October 2005 - January 2008
42. MG Donald M. Campbell, Jr.	January 2008 - April 2009
43. COL David A. Teeples	April 2009 - August 2009
44. MG James M. Milano	August 2009 - May 2010
45. BG Theodore D. Martin*	July 2010 - June 2011
46. BG Thomas S. James Jr.	June 2011 - July 2012
47. BG Paul J. Laughlin	July 2012 - April 2013
48. BG Leopoldo A. Quintas	August 2013 - August 2014
49. BG Dennis S. McKean	September 2014 - May 2016
50. BG John S. Kolasheski	June 2016 - April 2017
51. BG David A. Lesperance	April 2017 - August 2019
52. BG Kevin D. Admiral	September 2019 - Present

\*First Chief of Armor and Armor School Commandant on Fort Benning, Georgia



# ***ARMOR CENTER and SCHOOL CSMs***

***“Thunderbolt 7”***



1. SGM Carson I. Cassidy	April 1959-July 1965
2. SGM S.G. Poe	July 1965-January 1966
3. CSM Daniel J. Mulcahey*	January 1966-June 1968
4. CSM W.H. Strickland	June 1968-July 1969
5. CSM D.F. Ernest	July 1969-October 1969
6. CSM F. Cillo	October 1969-1970
7. CSM Arnold E. Orr	1970 - 1973
8. CSM B.G. Belcher	1973 - 1974
9. CSM H.F. Wren	1974 - 1977
10. CSM W.R. Price	1977 - 1980
11. CSM John W. Gillis	1981 - 1983
12. CSM John M. Stephens	August 1983 - September 1990
13. CSM Jake C. Fryer	September 1990 - May 1992
14. CSM Richard L. Ross	May 1992 - October 1993
15. CSM Ronnie W. Davis	February 1994 - June 1997
16. CSM David L. Lady	June 1997 - February 2000
17. CSM Carl E. Christian	March 2000 - November 2001
18. CSM William J. Gainey	February 2002 - April 2003
19. CSM George DeSario	April 2003 - July 2005
20. CSM Otis Smith	July 2005 - July 2008
21. CSM John W. Troxell	July 2008 - April 2009
22. CSM Ricky W. Young**	April 2009 - February 2012
23. CSM Miles S. Wilson	February 2012 - July 2013
24. CSM Michael S. Clemens	July 2013 - September 2015
25. CSM Alan K. Hummel	September 2015 - March 2018
26. CSM Kevin J. Muhlenbeck	March 2018 - Present

\* First Armor Center and Post CSM on Fort Knox, KY

\*\* First Armor School CSM on Fort Benning, GA

# GENERAL FREDERICK M. FRANKS, JR WRITING AWARD

## CRITERIA AND EVALUTATION

GEN Fred M. Franks Jr. Writing Award will evaluate and recognize outstanding contributors, from across the Army, who demonstrate clarity and vision on the future of the Armor force through clear and concise writing.

Officers, NCOs, Soldiers and DA Civilians write about the future of the Armor branch and offer insightful, forward-thinking concepts to improve the force.

The applicant will offer ideas and recommendations for improvement within Doctrine, Organization, Training, Materiel, Leadership, Personnel, Facilities, and Policy (DOTMLPF-P) for consideration and/or implementation by the Chief of Armor.

The selection board consists of, but is not limited to, representatives from the following organizations: USAARMS HQ, Office of the Chief of Armor, Armor Historian and **ARMOR** magazine.

The winning manuscript will be announced annually during Fort Benning's Armor Week.

## ELIGIBILITY

Open to all active and reserve component Soldiers and Department of the Army Civilians. Soldiers of all ranks, regardless of Area of Concentration (AOC) or Military Occupational Specialty (MOS), are eligible for nomination.

## AWARDS

Enshrinement will include the production a professional portrait including significant contributions and a biography, which will be displayed at Armor School Headquarters at Fort Benning.

## AWARDEES:

Inaugural 2019 Writing Award: MAJ Nathan A. Jennings





# Order of St. George

## Gold Medallion Recipients

1986 GEN James Polk  
1986 LTG Robert Baer  
1986 MG Ernest Harmon  
1986 COL Jimmy Leach  
1987 GEN Donn Starry  
1987 MG Lawrence Schlanser  
1988 GEN Bruce Clark  
1988 COL Hap Haszard  
1988 1SG Patrick J. Rocco  
1989 GEN William A. Knowlton  
1989 LTG William R. Desobry  
1989 LTG Julius W. Becton Jr.  
1989 CSM William Price  
1990 GEN Glenn Otis  
1990 BG Philip Bolte  
1991 GEN Michael Davison  
1991 MG George Patton  
1992 COL William Marshall  
1992 CSM Donald E. Horn  
1993 COL Jim Spurrier  
1994 BG Albin F. Irzyk  
1994 LTC Burton Boudinot  
1995 MG Edward Bautz  
1995 MG Elmer L. Stephens  
1995 COL Fred Greene  
1996 MG Ronald J. Fairfield  
1996 MG Robert J. Sunnell  
1997 LTG Walter F. Ulmer Jr.  
1997 MG Thomas H. Tait  
1997 Mr. Richard P. Hunnicut  
1998 LTG Frederic J. Brown  
1998 MG Stan Sheridan  
1998 CSM John Stephens  
1999 MG Peter McVey  
1999 COL Donald W. Williams  
1999 Dr. Lewis Sorley  
2000 LTG John J. Yeosock  
2000 MG James C. Smith  
2000 BG John C. Bahnsen  
2001 LTG Paul E. Funk  
2001 Mr. George F. Hofmann  
2001 Mr. Jack Eubanks (NPA)  
2002 GEN Gordon R. Sullivan  
2002 CSM Don Devine  
2003 LTG John W. Woodmansee Jr.  
2003 LTG Dave R. Palmer  
2004 LTG David K. Doyle  
2004 COL Donald E. Appler  
2005 GEN Crosbie E. Saint  
2006 MG George H. Harmeyer  
2006 MG Thomas P. Lynch  
2007 MG Thomas F. Cole  
2007 SGM Christopher N. Trammell  
2008 MAJ Jerry Headley  
2008 SMA Jack Tilley  
2009 LTG Larry R. Jordan  
2009 CSM Jake Fryer  
2010 GEN Ronald H. Griffith  
2010 GEN John H. Tilelli  
2010 LTG John B. Sylvester  
2010 MG Terry L. Tucker  
2010 LTC Michael M. Turner  
2010 CSM George DeSario  
2010 COL (CH) Larry Haworth (NPA)  
2011 CSM William Joe Gainey  
2011 COL William Hansen  
2012 BG John S. Crow  
2012 LTC William Bewley  
2013 COL James G. Snodgrass  
2013 CSM Carl Christian  
2014 COL Robert Westholm  
2014 LTC Philip Linn  
2014 Mrs. Joanne Patton (NPA)  
2015 MG Robert Goff  
2015 CSM Dennis Webster  
2015 Mr. Jody Harmon (NPA)  
2016 GEN Frederick M. Franks Jr.  
2016 SMA Kenneth O. Preston  
2017 COL Alan Mosher  
2017 SGM Don Wicks  
2018 COL David M. Cowan  
2018 CSM Otis Smith  
2019 LTG John Caldwell  
2019 CSM Joe T. Hill  
2019 CSM Rick W. Young  
2019 Mr. Allen Hathaway (NPA)



## *The Soldier's Creed*

*I am an American Soldier.*

*I am a Warrior and a member of a team. I serve the people of the United States and live the Army Values.*

*I will always place the mission first.*

*I will never accept defeat.*

*I will never quit.*

*I will never leave a fallen comrade.*

*I am disciplined, physically and mentally tough, trained and proficient in my warrior tasks and drills. I always maintain my arms, my equipment and myself.*

*I am an expert and I am a professional.*

*I stand ready to deploy, engage, and destroy the enemies of the United States of America in close combat.*

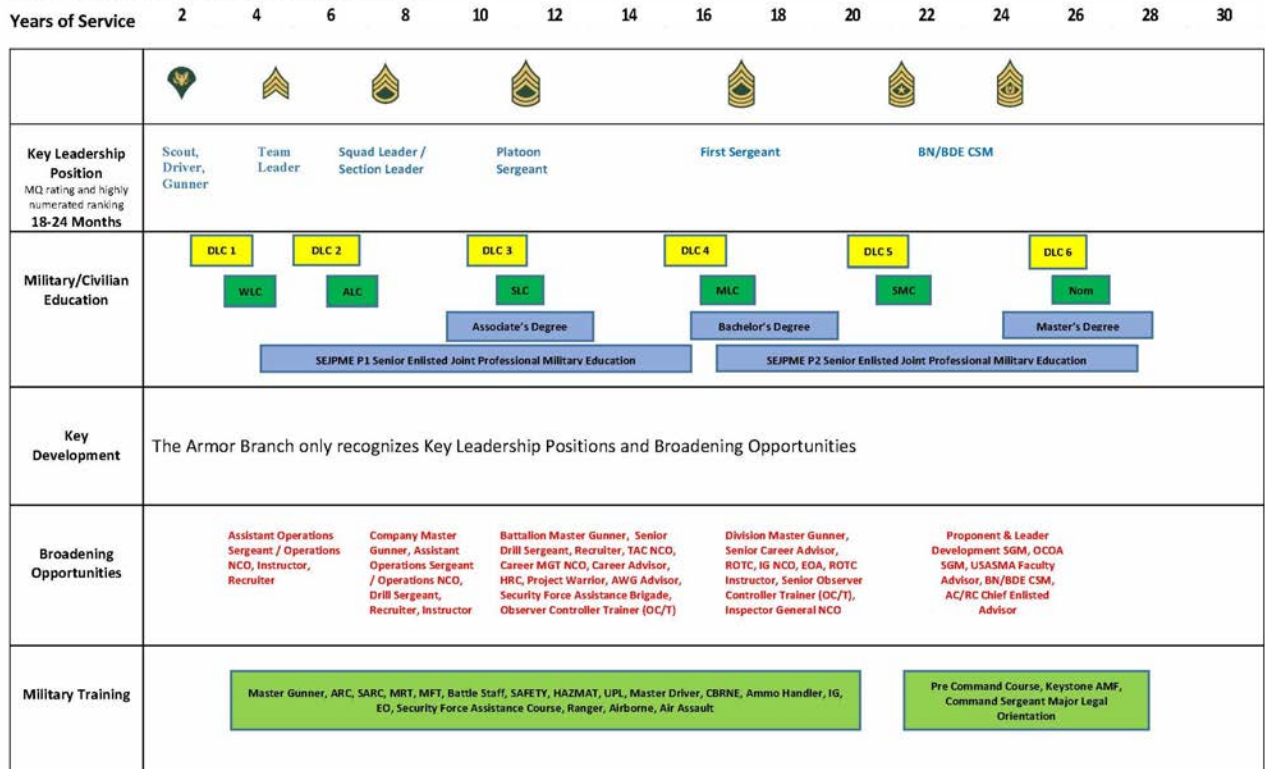
*I am a guardian of freedom and the American way of life.*

*I am an American Soldier.*



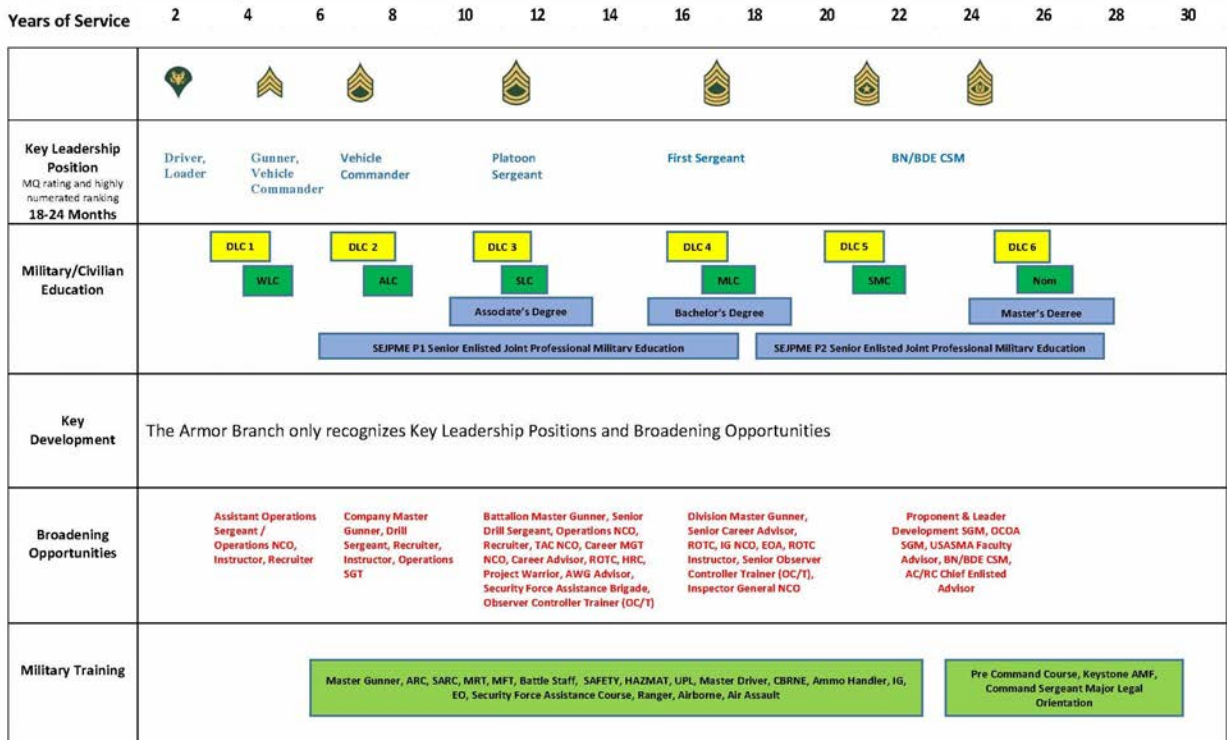
# CMF 19 CAREER DEVELOPMENT

## 19D Talent Development Model



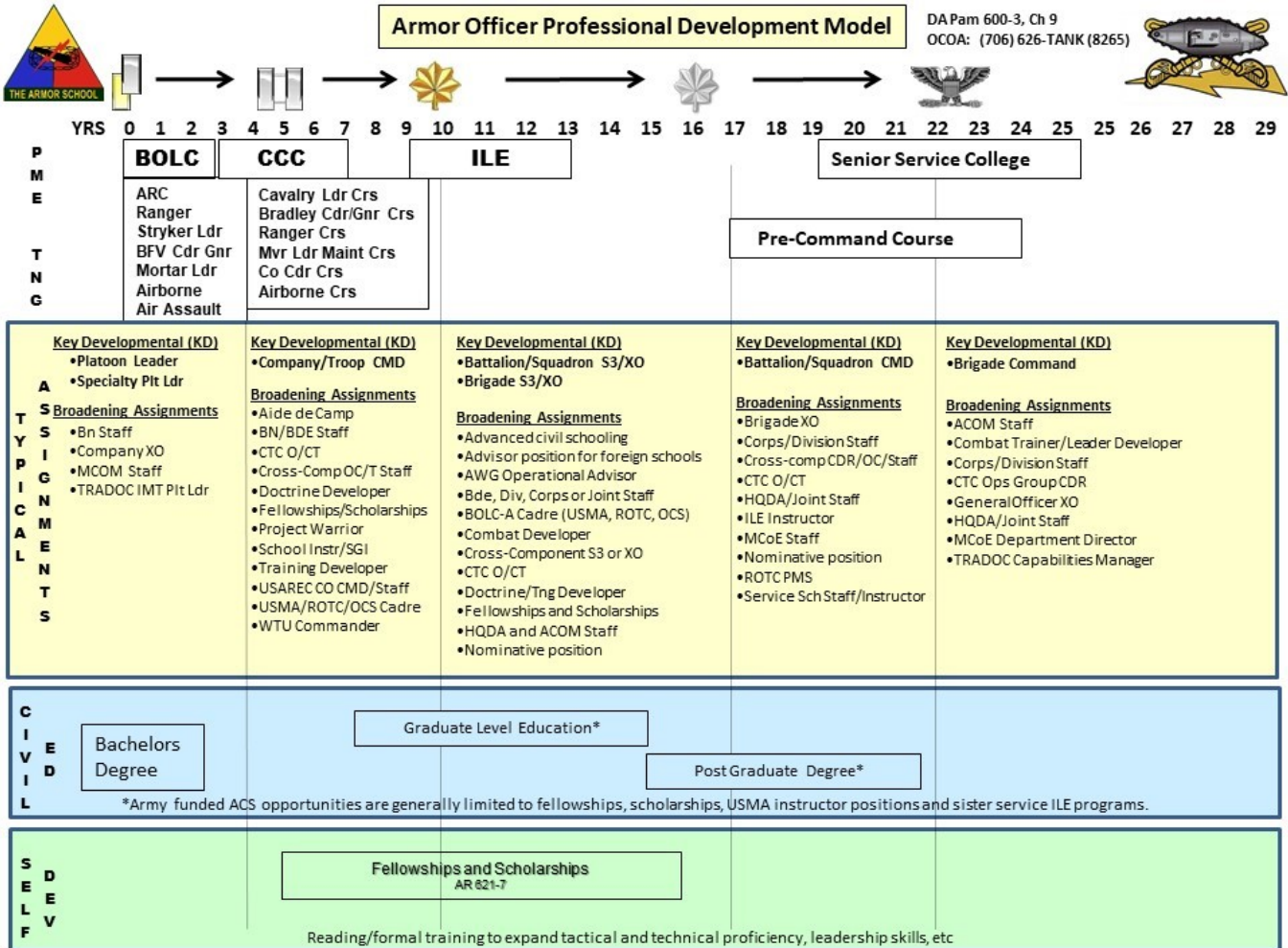
The opportunities to enhance Soldier's careers are numerous. Though not carved in depleted uranium, these charts show the normal timeline for an Armor/Cavalry Soldier's career progression based on enhancement opportunities. It is key to understand that a Soldier should not receive an assignment to a specialty area prior to completing the developmental requirements for his rank (see DA Pam 600-25, <https://www.milsuite.mil/book/groups/smartbook-da-pam-600-25>).

## 19K Talent Development Model





# ARMOR OFFICER PROFESSIONAL DEVELOPMENT



## ARMOR TALENT MANAGEMENT STORYBOARD

**INTELLIGENCES:** Bodily-Kinesthetic, Interpersonal, Spatial

**SKILLS:** Armor officers are leaders of teams who are experts in combined arms, reconnaissance, and security operations. They possess the technical and tactical competence, social and cultural awareness, and oral and written communications skills needed to cultivate trust, and teamwork. Armor officers are responsible for training their units for combat to defeat lethal, adaptive enemies in all types of terrain. Armor Officers lead their tank formations, closing with and destroying the enemy, as well as lead scouts conducting reconnaissance and security. They are physically fit and mentally tough, prepared to succeed under the most adverse conditions. They are leaders who possess a flexibility of mind, able to utilize multiple technologies to devise solutions to complex and dynamic challenges. Armor officers are comfortable making decisions in ambiguous environments, developing courses of action, determining and mitigating risks, then precisely and effectively communicating plans to accomplish the task or mission.

**KNOWLEDGE:** The Armor branch desires officers with academic backgrounds that span the entire spectrum of disciplines and majors offered at our nation's undergraduate institutions. Broad individual experiences contribute to the success of the branch.

- > **RELEVANT TRAINING / EXPERIENCE:** Leadership role in team athletics; Cadet Troop Leading Time / Leader Development Time (CTLT / CLDT) with Tank / Scout PL; Company / Troop CDR; Armor or Basic Training/OSUT units; Staff Officer (not all inclusive). Prior enlisted time in a Maneuver branch.
- > **RELEVANT CERTIFICATIONS / ACCREDITATIONS:** Army Reconnaissance Course; Ranger; Airborne; Air Assault; Stryker Leader Course, Bradley Leader Course, Maneuver Leader Maintenance Course, Cavalry Leaders Course.

**BEHAVIORS:** (In addition to foundational)

- > ADAPTABLE
- > DISCIPLINED
- > INITIATIVE
- > PROBLEM SOLVING
- > AGILE
- > DEPENDABLE
- > MORAL / ETHICAL
- > RESILIENT
- > COMMITTED
- > FIT (PHYS / MENT)
- > MOTIVATING
- > DILIGENT
- > HARD WORKING
- > PROACTIVE

**TALENT PRIORITIES:**

- MENTALLY TOUGH:** Stress tolerant and emotionally mature. Performs well even under extreme psychological stress.
- PHYSICALLY FIT:** Physically tough, gritty, and tenacious. Performs well even under extreme physiological stress.
- MULTI-TASKER:** Rapidly processes and prioritizes multiple demands simultaneously. Takes appropriate action.
- PROBLEM SOLVER:** Able to choose between best practices and unorthodox approaches to reach a solution. Accomplishes the task.
- PRUDENT RISK TAKER:** Recognizes and mitigates unacceptable risks, enabling mission accomplishment without unnecessarily compromising safety.
- COMMUNICATOR:** Precise, efficient, and compelling in both written and spoken word.

# ARMOR BRANCH RESERVE COMPONENT

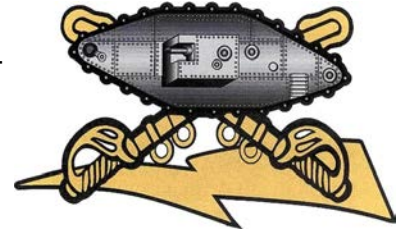
Reserve Component Armor Officer development objectives and qualifications basically parallel those planned for their active duty counterparts. Junior officers must develop a strong foundation through assignments in the branch before specialization begins. RC Armor officers serve the same role and missions as their Active Component (AC) counterparts. The unique nature of the RC Soldier's role as a "Citizen Soldier" poses a challenge for professional development. However, RC officers are expected to follow AC officer development patterns as closely as possible, except that RC officers have increased windows to complete mandatory educational requirements. To meet professional development objectives, RC officers must be willing to rotate between ARNG and USAR troop program unit (TPU), Individual Ready Reserve (IRR), Individual Mobilization Augmentee (IMA) Program, and the AGR programs. Geographical considerations, as well as the need to provide as these transfers. Additionally, there may be occasions when RC officers will be transferred to the IRR while they complete mandatory educational requirements. Such transfers will be temporary and should not be seen as impacting negatively on the officer's career. The success of an RC officer is not measured by length of service in any one component or control group, but by the breadth of experience, duty performance, and adherence to branch requirements.



# ARMOR PROGRAMS

## Excellence in Armor (EIA)

The EIA Program identifies outstanding CMF19 Soldiers, Private to SGT promotable, whose performance demonstrates superb leadership potential, both in One Station Unit Training (OSUT) conducted by the 194th Armor Brigade and in Cavalry/BCT units Army-wide. EIA also applies to CMF19 Soldiers serving in non-Armor units, Active, Reserve, and National Guard. Soldiers selected for EIA will have a Personnel Development Skill Identifier (PDSI) of **E4J** annotated on their Enlisted Records Brief (ERB).



## Officer/Enlisted Project Warrior

The Project Warrior is a program designed to spread the knowledge and expertise developed by the best Armor officers and NCOS to the Armor force. While Officers are selected from the Combat Training Centers (CTC), NCOs are selected from the operational force to be assigned for 18-24 months at a CTC as an Observer/Controller. Officers receive a follow-on assignment to Fort Benning to serve as Maneuver Captain Career Course Small Group Instructors (SGI). NCOs receive a follow-on assignment to Fort Benning to fill key instructor positions in Armor BOLC or Maneuver SLC, or to become a Maneuver Doctrine writer. Project Warrior Officers are identified by annotation in Section X of their Officer Record Brief (ORB). NCOs selected for the Project Warrior program will have a Personnel Development Skill Identifier (PDSI) of **P4W** annotated in Section I of their Enlisted Records Brief (ERB).



## Armor and Cavalry Leadership Award

The Armor and Cavalry Leadership Award is presented annually to promote, sustain, and recognize excellence in leadership in Armor and Cavalry units. The award also recognizes individuals who exhibit excellence in leadership or training, or who make significant contributions to the force. The Armor and Cavalry Combat Leadership Trust Fund located at the US Army Armor School, Fort Benning, Georgia finances the award program.

## Army Career Tracker (ACT)

ACT is an Army leadership development tool that provides a single point of entry for career management and development for enlisted and officers. ACT pulls information from training, education, and experiential learning sources and presents a common training picture as well as a consolidated course catalog. ACT provides a personalized, consolidated history of all recorded education, training, and assignments in a simple-to-use interface.



# ARMOR HERITAGE

## The United States Cavalry and Armor Association



The aim and purpose of the U.S. Cavalry and Armor Association is to disseminate knowledge of the military art and sciences, with special attention to mobility in ground warfare; to promote professional development of its members; and to preserve and foster the spirit, the traditions and solidarity of Armor and Cavalry in the Army and Marine Corps of the United States.

## Order of Saint George Awards Program

Membership in The United States Cavalry and Armor Association's distinguished military Order of Saint George is limited to only the very best of Tankers, Cavalrymen, Marines and their military and civilian supporters. Awards include:



The Saint George: Black, Bronze, Silver and Gold Medallions



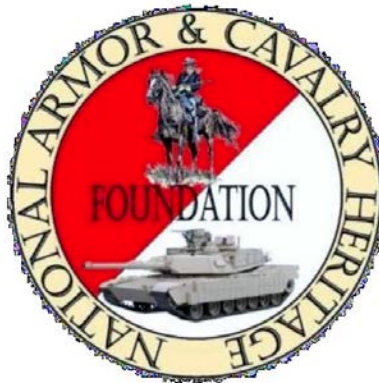
The Saint Joan D'Arc and Emerald Medallions



The Noble Patron of Armor and Gold Noble Patron of Armor Medallions

## The National Armor and Cavalry Heritage Foundation

The National Armor and Cavalry Heritage Foundation is working to build the National Armor and Cavalry Museum which will honor our mounted forces in a multidimensional facility that will be designed to support military training while also entertaining and engaging a broad spectrum of the public. Particular emphasis will be on the military family and the parents and families of serving military.



# US ARMY ARMOR BRANCH—KEY DATES

12 December 1776	Branch birth date—Continental Congress authorizes establishment of regiment of light dragoons.
1832	Congress authorizes establishment of Regiment of Mounted Rangers.
1833	Congress authorizes establishment of the Regiment of US Dragoons.
1836	Congress authorizes establishment of the 2d Regiment of Dragoons.
1846	Regiment of Mounted Riflemen created.
1855	1 <sup>st</sup> and 2d Cavalry Regiments created.
1861	Consolidation of dragoon, mounted riflemen, and cavalry regiments into Cavalry Corps and all mounted units redesignated as the 1 <sup>st</sup> through 6 <sup>th</sup> US Cavalry Regiments.
26 January 1918	US Tank Corps established.
1918	Camp Knox, Kentucky, established as a Field Artillery Training Center.
1920	National Defense Act of 1920 abolishes Tank Corps and assigns responsibility for tank development to Infantry.
1928	Experimental Mechanized Force established at Fort George G. Meade, Maryland.
1930	Mechanized Force created at Fort Eustis, Virginia.
1931	Army implements new mechanization policy that permits cavalry development of a mechanized component.
1931	Mechanized Force disbanded; remnant element renamed Detachment for Mechanized Cavalry and Camp Knox, Kentucky, becomes home of mechanized cavalry.
1932	Installation status of Camp Knox improved to Fort Knox with permanent assignment of combat troops and start of infrastructure development.
1933	1 <sup>st</sup> Cavalry Regiment (Mechanized) arrives at Fort Knox, Kentucky.
10 July 1940	Army authorizes creation of the Armored Force at Fort Knox as a “service test” to centralize mechanized development.
1942	Office Chief of Cavalry abolished.
1943	Armored Force redesignated Armored Command.
1944	Armored Command redesignated as Armored Center.
1945	Armored Center inactivated.

# US ARMY ARMOR BRANCH—KEY DATES

1946	Armored Center reactivated.
1948	Organization of the first armored cavalry regiments.
1948	Current Armor School crest approved.
28 June 1950	Army Organization Act establishes Armor as separate branch of Army.
1957	Army adopts the Combat Arms Regimental System.
1968	194 <sup>th</sup> Separate Armor Brigade stationed at Fort Knox.
1972	Main Battle Tank Task Force established at Fort Knox to develop requirements for new tank, which becomes the Abrams tank.
1973	Training and Doctrine Command established and triggers fundamental shift in nature and scope of training throughout Army
1973	Arab-Israeli October War triggers changes in Army doctrine and increased emphasis upon platforms capable of fighting on highly mechanized battlefield.
1980	Fielding of the M1 Abrams tank begins.
1981	Fielding of the M2/M3 Bradley Fighting Vehicle begins.
1990	Army authorizes fielding of HMMWV to all maneuver battalion scout Platoons.
1992	Battle Labs established by TRADOC to promote closer integration of science, industry, and combat developments.
1992	First light armored cavalry regiment created when 199 <sup>th</sup> Separate Motorized Infantry Brigade reflagged as the 2d Armored Cavalry Regiment.
1994	Force XXI initiated with emphasis upon heavy force development.
1994	Desert Hammer VI becomes first test of prototype Armored brigade at the National Training Center.
1995	Fort Knox hosts Advanced Warfighting Experiment Focused Dispatch, which demonstrates ability to integrate virtual and live training.
1995	Brigade combat team from the 4 <sup>th</sup> Infantry Division selected to serve as the permanent experimental force (EXFOR) for Army digitization activities.
1997	Task Force XXI Advanced Warfighting Experiment.
1997	Division Advanced Warfighting Experiment.
1999	Army Transformation initiatives begin.
1999-2000	Fort Knox hosts Platform Performance Demonstration to assess available vehicles for use in new medium brigade, later designated the Stryker Brigade Combat Team.
11 September 2001	Terrorist attacks upon the World Trade Center and Pentagon.

# US ARMY ARMOR BRANCH—KEY DATES

2001	Operation Enduring Freedom begins.
19 March 2003	Operation Iraqi Freedom begins.
2003	Modularity initiative restructures Army around Brigade Combat Teams (BCT) as the principal maneuver elements.
2005	BRAC announcement to relocate the Armor School to Fort Benning, Georgia as part of the Maneuver Center of Excellence.
7 July 2010	The 45th Chief of Armor and Armor School Commandant assumes duty on Fort Benning, Georgia.
28 March 2011	The first Cavalry Leaders Course begins on Fort Benning.
8 June 2011	The first Armor Basic Officer Leadership Course (BOLC) begins on Fort Benning.
10 June 2011	Armor School brigades case unit colors for Fort Knox departure.
20 June 2011	Armor School brigades uncase unit colors on Fort Benning.
21 July 2011	The first 19D Cavalry Scout One Station Unit Training course begins on Fort Benning.
5 August 2011	The first 19K Armor Crewman One Station Unit Training course begins on Fort Benning.
17 October 2011	The first Army Reconnaissance Course begins on Fort Benning.
7 - 10 May 2012	The Inaugural Sullivan Cup Best Tank Crew Gunnery competition is conducted on Fort Benning.
2 - 5 March 2013	The Inaugural Gainey Cup Best Scout Team competition is conducted on Fort Benning (Later Best Scout Squad).
1 October 2013	MCoE reorganizes into the University design with training brigades focused and aligned specifically for Initial Military Training and Functional Training.
24 September 2013	The first Donn A. Starry Writing Award is presented in the Marshall Auditorium of McGinnis-Wickam Hall to CPT Anthony M. Formica.
1 December 2016	The first Gender Integrated Armor BOLC course graduates with 52 male and 13 female Armor Branch Second Lieutenants.



**20 June 2011 Uncasing Ceremony  
on Fort Benning, Georgia**



**1 December 2016 First Gender Integrated  
Armor BOLC Graduation**



## SULLIVAN CUP BEST TANK CREW WINNERS

- 2012:** 1st Battalion, 6th Infantry Regiment, 2nd ABCT, 1st Armored Division  
SFC Ryan Dilling, SGT Shaffer, PFC Backer, PFC Braun
- 2014:** 2nd Battalion, 69th Armored Regiment, 3rd ABCT, 3d Infantry Division  
SFC Grider, SPC Whiteman, SGT Luu, PFC Carter
- 2016:** 1st Battalion, 252nd Armored Regiment, 30th ABCT, NC ARNG  
1LT Johnathan Dupre, SGT Curtis Bowen, SPC Brandon Sinor, PFC Philip Hill
- 2018:** 3d Battalion, 67th Armored Regiment, 2nd ABCT, 3d Infantry Division  
SFC Johnathan Werner, CPL Justin Harris, PV2 Brandon Zacher, PV2 Dekken Sanders



## GAINNEY CUP BEST SCOUT SQUAD WINNERS

- 2013:** 1st Battalion, 40th Cavalry Regiment, 4th IBCT (Abn), 25th Infantry Division  
SSG Zachary Adkins, SSG Justin Miller, SPC Mithcell Sanderson, PFC Joseph Calderon
- 2015:** 4th Squadron, 2nd Cavalry Regiment, U.S. Army Europe (USAREUR)  
SSG Kyle Cooper, SGT Cesar Cavazos, SPC Glen Gianello, SPC Joshua Castro,  
PFC Justin Cope, PFC Daniel Casillas
- 2017:** 1st Squadron, 1st Cavalry Regiment, 2nd ABCT, 1st Armored Division  
SSG Eric Atkinson, SGT Zachary Diglio, SGT Joseph Main, PFC Timothy Wood,  
PFC Ryan French, PV2 Jeremy Blevins
- 2019:** 5th Squadron, 73d Cavalry Regiment, 1st IBCT, 82d Airborne Division  
SSG Brooks, SGT Kain, SGT Wuhlte, SPC Cheek, SPC Lamaita, SPC Thurman,  
SPC Hanback, SPC Hyland





**“Old Bill”**

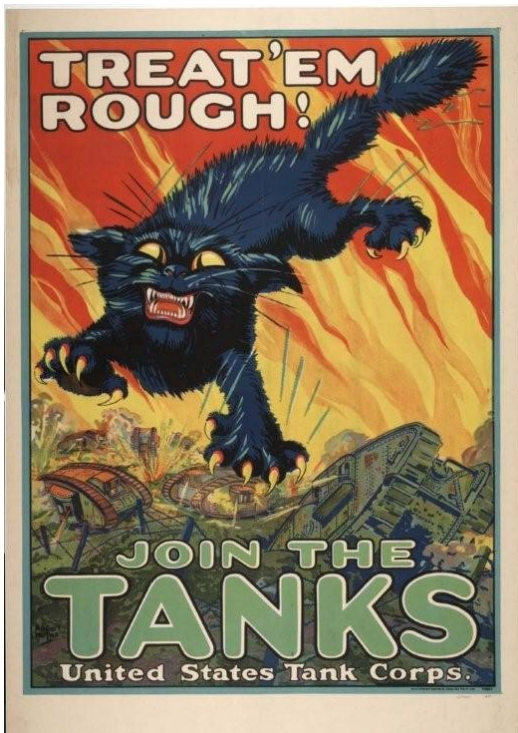
The portrait above by artist Frederic Remington was originally titled “The Cavalryman”. In 1898 Remington visited the camp of the 3rd Cavalry at Tampa, Florida where the regiment was staging for the Santiago campaign. The artist, on his way to cover the war in Cuba for Harper's Weekly, was a close friend of Captain Francis H. Hardie, commander of 3d Cavalry's Troop G.

During his visit, Remington's attention was drawn to Sergeant John Lannen. A superb rider and an imposing figure, Lannen impressed Remington as the epitome of the cavalryman. With Hardie's approval, the artist made several rough sketches of the white-haired, white-mustached noncommissioned officer.

From these sketches Remington later executed the now famous drawing portraying a cavalryman mounted on his horse with a carbine cradled in his arms. Remington presented this drawing to the Cavalry Association in 1902. In January 1903, this drawing appeared on the cover of the Cavalry Journal where it stayed for forty years.

With nearly 30 years of service and close to retirement, Sergeant Lannen succumbed to yellow fever in Cuba. Sergeant Lannen's birth name was William Carroll and this may be the source for the print's current nickname “Old Bill”.

Always a branch of great esprit, and highly conscious of history and tradition, the Cavalry took the Remington masterpiece to its heart. Although the drawing left the front cover of the Cavalry Journal in mid 1942, it appears to this day as a trademark of the United States Army's mobility in war.



This World War I poster (ca. 1917), from the Poster Collection of the N.C. State Archives, was created by the artist August William Hutaf (1879-1942) as a recruiting poster for the U.S. Tank Corps and features an attacking cat leaping over a tank. This print became the trademark of the Tank Corps and remains a trademark for the Armor force.



The Armor and Cavalry Senior Leadership Print was established to recognize those retired Armor and Cavalry leaders that distinguished themselves as trainers or leaders of the Armor Force and to recognize members of the Armor Force who made significant contribution to Armor and Cavalry. This print evolved from the leadership award whose initial thrust was to recognize the best-trained platoon of Horse Mounted Cavalry. This has been expanded in recent years to identify the best Armor or Cavalry Company or Troop per division, separate brigade, and regiment; plus those individuals who excel while performing other Armor and Cavalry related duties.

# ARMOR HOTLINE

**DSN 620-TANK (8265)**

**Commercial (706) 626-TANK**

**usarmy.benning.mcoe.mbx.armor-ocoa@mail.mil**



The proponent of this pamphlet is the Office of the Chief of Armor (OCA). Users are invited to send comments and suggested improvements to the Office of the Chief of Armor (ATZK-AR), 1 Karker Street, Room 6600, Fort Benning, Georgia 31905-4500, DSN 620-TANK, (706) 626-8265, **Email:** usarmy.benning.mcoe.mbx.armor-ocoa@mail.mil



# I AM ARMOR

I came of age as a mounted arm of decision at Cowpens, during our war of independence- surprising Tarleton's brigade and driving them from the battlefield. I later served as a commander's eyes and ears- locating, probing, and dispersing the enemy throughout the War of 1812 and into the American Civil War. The exploits of Forrest, Mosby, Custer, Sheridan, Stuart, and other proponents of fast-moving decisive warfare and tactics, developed and refined, strengthened the Union beyond Appomattox and the hostile hour.

On Europe's Western Front in 1918 my fledgling Tank Corps was the mechanized force that helped bring victory, Over There. After World War I, I matured as a tank organization, crafting combined arms teams with Tankers and Infantrymen. At Fort Knox, I pioneered a new type of organization built around the tank. Through hard work and large-scale maneuvers, I developed revolutionary principles of organization, command and control, and battlefield operations that became the foundation of today's Armor.

In 1941 I battled the Japanese defiantly in the Philippines. I rose above defeat at Kasserine Pass to drive the Germans from North Africa. I freed Sicily and contributed to Italy's liberation from Fascism. In my Sherman tanks I doggedly pushed beyond Normandy, defeating elite German forces. In the snow and ice of the Ardennes, I blocked the German offensive and relieved Bastogne. I crossed the Rhine River at Remagen and loosened the tyrant's grasp on Germany. I led the American columns as they raced through northern Italy after the fall of Rome. I pursued the Germans in their retreat from France, and linked up with our Russian allies at Torgau.

War in Korea came as a surprise in 1950, when my Shermans again saw service defending the Pusan Perimeter. I beat back North Korean attacks before leading the United Nations counteroffensive that drove to the North Korean capital. When the Chinese intervened, I protected the columns of UN Soldiers during their withdrawal. For the rest of the war, I ensured no communist offensive would break our lines and secured South Korea's freedom. In my jeep, Chaffee tanks, and halftracks, I secured our flanks and rear area, always probing for mines and enemy infiltrators.

In Vietnam I hunted the Viet Cong and NVA with my M48s, M113s and Sheridans. On desolate roadways I defeated ambushes. I drove through the jungles, clearing safe trails, destroyed his safe havens and defeated him wherever I found him. I developed new counterinsurgency tactics that drew the enemy to fight—and lose. I protected convoys, conducted cordon and search missions, and hunted the enemy wherever he went-day and night.

During the Cold War, in my M60 mount I stood guard along West Germany's borders- a reminder to the Soviet horde that any invasion would meet formidable resistance. The Fulda Gap was my sector and Germany became my second home. I was the tripwire to provide early warning of any Warsaw Pact invasion and disrupt hostile forces, while my American and NATO brethren practiced Airland Battle and rehearsed their battle plans.

In 1991 I took my M1 Abrams and Bradleys to war, tasked to liberate Kuwait from Iraqi occupation and secure the Saudi kingdom. I fought the Republican Guard and left them shattered at the foot of Medina Ridge. My presence was enough to make Iraqi units surrender en masse. I led the advance of the VII Corps through the sandstorms and Iraqi defenses, leaving in our wake the smoke plumes of many enemy armored vehicles. At 73 Easting, I drove through Iraqi defenses and overran their positions without stopping.

In 1995, I crossed the Sava River into Bosnia to enforce the peace. In 1999, I accompanied NATO forces when they entered Kosovo to protect another emerging nation from the horrors of civil war. I served in Bosnia and Kosovo and along the Macedonian border to preserve peace in the Balkans.

I was the steel wave that crossed into Iraq in March 2003. I battled my way to Baghdad and conducted the Thunder Runs that toppled Saddam's evil regime. I set the stage for the birth of a new Iraq. I shaped the battlefield and set the conditions for victory. I fought militias, insurgents, and terrorists in the desert and in the cities. I bled to make a better tomorrow for Iraq. I used my scout skills to find terrorists wherever they lurked. I was an emissary of democracy but I used my combat skills to crush those who sought to sow the seeds of chaos and anarchy.

I helped build and train the Afghan National Army, and together we took the fight to the Taliban in the mountains of Afghanistan. I trained their scouts and mounted soldiers, and showed them how best to employ their Russian vehicles and weapons. Through my actions and sacrifice I showed the Afghans an alternative to a future of poverty and violence.

"The Combat Arm of Decision always stands ready to destroy the enemies of our Nation"

## FORGE THE THUNDERBOLT!

