

*ARMY LINEAGE SERIES***ARMOR-CAVALRY****Part I:****Regular Army and Army Reserve**

by  
*Mary Lee Stubbs*  
and  
*Stanley Russell Connor*

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**Foreword**

Successful military organizations are solidly founded upon the pride of their members—soldiers with a strong sense of belonging to their unit and enthusiastic about its being their own. Good military leaders always strive to attain this intangible quality generally known as *esprit de corps*. Anything that helps an army to achieve it contributes to better units.

As the authors trace the evolution of cavalry into today's armor branch, their narrative presents a broad history of the growth of the entire U.S. Army. It gives an insight into the reasoning and considerations behind most of the organizational changes the Army has undergone, lending clarity and perspective to the unit lineages that follow.

The Army Lineage Series is designed to foster the *esprit de corps* of United States Army units. It is intended for use at all levels of command, in service schools, and in various training programs. Armor-Cavalry, the second volume in the series, is designed as a tool to perpetuate the rich tradition of cavalry and the brilliant record of modern armor.

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HAL C. PATTISON  
Brigadier General, USA  
Chief of Military History

## The Authors

Mary Lee Stubbs, a graduate of Alabama State Teachers College, is Chief of the Organizational History Branch of the Office of the Chief of Military History. Before joining the office in 1947, she taught in the public schools of Alabama and in the Indian Service schools of the Navajo Agency in New Mexico.

Stanley Russell Connor, a graduate of Mississippi State College, served during World War II as a company commander of rifle and heavy weapons companies and as a battalion executive officer. He had tours of duty as a historian with the Office of the Chief of Military History and the United Nations Command element of the Military Armistice Commission in Korea. He holds the Silver Star and Bronze Star Medals. After 20 years of active duty as an infantry officer, he retired in 1959 as a lieutenant colonel, AUS. Currently Mr. Connor is Deputy Chief of the Organizational History Branch, OCMH.

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## History of the Organization of the Armor and Cavalry

### *Revolutionary War*

At the time of the American Revolution, the term *cavalry* was applied to that branch of the military service whose members served and fought on horseback; the word *horse* was used about as often and meant essentially the same thing. By the eighteenth century specialization had developed sufficiently in cavalry to bring forth three distinctive types of mounted commands, varying in mission, armament, and weight of horses: the heavy cavalry, used primarily for shock effect in battle; the light cavalry, designed for reconnaissance, screening missions, and messenger service; and the dragoons, trained to fight both on foot and on horse. In actual practice, these distinctions were far from precise, and they tended to decrease in importance in the nineteenth century. In North America, the traditional cavalryman has ever been the light dragoon- a soldier trained and equipped to fight mounted or dismounted, to perform screening and reconnaissance, and to act as a scout or messenger. True heavy and true light horse have been rare.

The Continental Army of the American Revolution was mainly composed of infantry, with very little artillery and cavalry. In 1774, on the eve of the Revolution, some colonies had volunteer mounted units of troop size, but these troops were as much social organizations as military commands. They had select memberships who elected their own officers, furnished their own horses, arms, and uniforms, and made their own regulations.

The Continental Army fought through 1775 and 1776 with a few of the mounted militia commands as its only cavalry. Outstanding among these organizations was the Light Horse of the City of Philadelphia, a troop organized in November 1774 and today still active in the Army National Guard as Troop A, 1st Squadron, 223d Cavalry (First Troop Philadelphia City Cavalry). That tiny organization served as General Washington's escort in 1775 and in the bitter days of Trenton and Princeton, displaying then, as later in the war, "a Spirit of Bravery which will ever do Honor to them and will ever be gratefully remembered by me," to quote their Commander in Chief. Another such troop

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was the Connecticut Light Horse commanded by Elisha Sheldon. It, too, had elicited Washington's praise for its service in the summer of 1776.

General Washington's experience with cavalry in the summer campaign of 1776 led him to recommend the establishment of one or more mounted units in the Continental Army, and Congress on 12 December 1776 constituted a regiment of light dragoons and appointed Elisha Sheldon of Connecticut as its commander. Congress also authorized Washington to appoint the other officers of the regiment, but he delegated the duty to Sheldon, reserving for himself the right to refuse any officer so appointed if he thought him unfit for cavalry service. Washington indicated that he expected Sheldon to appoint only gentlemen of "true spirits and good character" and observed that gentlemen of fortune and of reputable families generally made the most useful officers.

In accordance with General Washington's instructions, the new regiment was to have, besides Sheldon as its lieutenant colonel commandant, one other field officer, a major; a regimental staff of an adjutant, a surgeon, and a surgeon's mate; and 6 troops. Each troop was to consist of a captain, a lieutenant, a

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cornet,\* a quartermaster, 2 sergeants, 2 corporals, a trumpeter, a farrier, and 34 privates.

On 27 December 1776, Congress authorized a total of 3,000 light horse. During the winter and the spring of 1777 the Army began organizing four regiments: the 1st Continental Light Dragoons (Bland's Horse), the 2d Continental Light Dragoons (Sheldon's Horse), the 3d Continental Light Dragoons (Baylor's Horse), and the 4th Continental Light Dragoons (Moyle's Horse).

In January 1777 Washington proposed a new plan of organization for the cavalry regiments. As approved by Congress on 14 March of the same year, the new organization called for a colonel, a lieutenant colonel, and a major as field officers; a chaplain, a regimental quartermaster, a surgeon, a surgeon's mate, a paymaster, a riding master, a saddler, a trumpeter major, an adjutant, and 4 supernumeraries on the staff; and a captain, a lieutenant, a cornet, a quartermaster sergeant, an orderly or drill sergeant, a trumpeter, a farrier, an armorer, 4 corporals, and 32 privates in each of the 6 troops.

Although Congress authorized an increase in the strength of the light dragoon regiments in 1778, constant difficulties in recruiting men, procuring horses, arms, and accouterments, and retaining the men once they enlisted kept the four regiments from ever reaching full strength. When Friedrich Wilhelm, Baron von Steuben, Inspector General of the Army, inspected the cavalry in 1780 he found only 1,000 men in all. In the same year Washington and Steuben therefore recommended that the four understrength cavalry regiments be converted to legions—organizations composed of both cavalry and infantry. To back up his recommendation, Washington cited the high cost of horses and forage and the need of mounted troops to work in conjunction with foot soldiers. Another factor influencing the organization of legions was the dragoons' limited firepower. The dragoons were armed with heavy sabers, flintlock pistols carried in saddle holsters, and, when they were available, carbines." Because of the shortage of carbines, the dragoons lacked the protection of long-range firearms and thus were unable to defend their own camps during attacks. Infantrymen therefore had to be assigned to duty with the dragoons to protect them. Cavalry (and armor) throughout modern history have normally worked with infantry in battle. The legion as an organization thus seemed to be a logical solution to one of Washington's organizational problems.

Congress complied with Washington's recommendation on 21 October 1780, directing that a legion would consist of four troops of mounted dragoons and two companies of dismounted dragoons. The men

of the dismounted companies were to be armed as light infantry.

\* The rank of *cornet* was the lowest commissioned officer rank in the dragoons of the time. Cornet in the dragoons was the equivalent of ensign in the infantry. In 1799 both ranks were abolished in the Regular Army and replaced by that of second lieutenant. *Cornet*, as a rank, survives today in the First Troop Philadelphia City Cavalry of the National Guard.

\*\* The carbine of that period was a short-barreled, smoothbore shoulder arm.

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The legionary organization was retained to the end of the war. Outstanding leaders of the legions included Henry (Light Horse Harry) Lee, William Washington, Charles Armand (the Marquis de la Rouerie), and Count Casimir Pulaski. Pulaski, by virtue of his appointment as "Commander of the Horse" in September 1777, is often referred to as the first Chief of Cavalry of the United States Army.

By 1780 the center of the war had shifted to the southern states, but large British commands remained in the north. The four, dragoon regiments were split between the areas. In the north, they never again saw service as regiments, but special commands drawn from them raided strongholds and supply lines in New York and Long Island. On 9 November 1782, the 1st and 3d Continental Light Dragoons, then in the south, were consolidated to form Baylor's Dragoons. And when the war ended the regiments that had served in the south together could muster less than two hundred men.

Other mounted organizations figured prominently in the war. In the south were the commands of Francis Marion, Thomas Sumter, and Andrew Pickens. These partisan units were small organizations that operated independently and usually fought on foot, using their horses chiefly for transportation. Mounted frontiersmen were especially effective in the Battles of King's Mountain (October 1780) and Cowpens (January 1781) in the Carolinas. In the Battle of Guilford's Court House in March of 1781, Washington's dragoons and those of Henry Lee's legion fought mounted, Lee's dragoons having the first encounter with the enemy.

When the American Revolution came to an end in 1783, the remaining fragments of the Continental Cavalry were discharged. During the next fifty years mounted organizations existed in the Regular Army only for brief periods and then only as a very small part of the Army. The first such unit, a squadron of dragoons added in 1792, was broken up even before it was organized. Its four companies were assigned one each to the four sublegions that comprised the Legion of the United States. When that organization was abandoned in 1796, the Army returned to a regimental-type organization and the mounted portion was reduced to two companies. Two years later, when American relationships with France became strained, Congress authorized six new dragoon companies for service during the period of the differences between the two countries. The six new companies, together with the old ones, were to have formed a regiment of light dragoons, but for reasons of economy the new companies were never organized. Although the company officers were appointed, no enlisted dragoons were enrolled and no horses provided. In 1800 the two old companies were dismounted and two years later they, too, were disbanded.

For six years thereafter the Regular Army had no cavalry. From 1783 on, however, volunteer troops of horse existed in all the states. All volunteer militia organizations were recognized by the Militia Act of 1792. At least one

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mounted troop was authorized for each "division" of common militia infantry, but numerically the total cavalry was not to exceed one-eleventh of the infantry.

Mounted Kentucky militiamen figured prominently in General Anthony Wayne's victory over the Indians at Fallen Timbers in August 1794. There they helped drive the Indians from cover behind the fallen trees and into the open prairie where the Indians were at the mercy of the mounted soldiers.

#### *War of 1812 to Civil War*

By 1808 war with England was again threatening, and Congress increased the Regular Army by eight regiments—one each of light dragoons, light artillery, and riflemen and five of infantry. The dragoon regiment of eight companies constituted the only cavalry in the Regular establishment until 1812, when a second regiment was authorized. The two regiments were the cavalry force of the Regular Army during the War of 1812, and at no time were they at full authorized strength. Detachments from the regiments took part in a number of actions during 1812 and 1813—at Mississineway River in the Indiana Territory in December 1812, at the siege of Fort Meigs at the mouth of the Maumee River in Ohio the next spring, and later in Canada.

Early in 1814 Congress enacted legislation to improve the structure of the Army. By an act of 30 March the two dragoon regiments were consolidated into an 8-troop command designated the Regiment of Light Dragoons. Although the consolidated regiment seldom operated as a single unit and a year later was disbanded, detachments saw action at Lundy's Lane, Fort Erie, and Bladensburg.

Mounted militia companies throughout this period were a familiar sight in all the frontier campaigns and, when called upon, gave good account of themselves. Johnson's Kentucky Mounted Volunteers, for example, were at the Battle of the Thames River in Canada in 1813, and General Coffee's mounted Tennessee militia fought under Andrew Jackson in Alabama in 1814.

The Regiment of Dragoons was disbanded on 15 June 1815, and for seventeen years the Regular establishment again had no cavalry. Despite the arguments in Army circles for a small mounted force, Congress stood firm in its dedication to economy and a minimum standing Army.

During these years the western frontier moved well beyond the Allegheny Mountains, across the Mississippi River, up the Missouri, Arkansas, and Red Rivers, and into the plains area where the Indian was at home on horseback. By 1830 seven Army posts—scattered for 800 miles from Fort Snelling on the upper Mississippi to Fort Gibson on the Arkansas and garrisoned by detachments of Regular infantry and artillery—formed the only bulwark against Indian attack.

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On occasion, mounted militia were called out to reinforce the Regulars. Although these volunteers were called cavalrymen, their horses usually were the same ones with which they had plowed the field and dragged logs for the new cabin. Despite poor military organization, the mounted volunteers were generally effective and constituted the only semblance of a cavalry force, but the reports of money spent to equip and pay them were later used by the advocates of cavalry to argue that a Regular force would be less expensive.

In 1813 uprisings by the Menominees at Prairie du Chien in the Northwest Territory and by Black Hawk's band at Rock Island, Illinois, provided tangible evidence of the need for an Army capable of tracking down and pursuing the Indians beyond their usual haunts. Finally, in June 1832, Congress

authorized the organization of a Battalion of Mounted Rangers for defense of the frontier. Some 600 hardy frontiersmen were brought together. Experience with this battalion proved the value of a mounted force, but it also indicated the importance of having the force properly trained and disciplined. As a result, on 2 March 1833 Congress authorized a regiment of dragoons in lieu of the Battalion of Mounted Rangers. The new organization, the Regiment of United States Dragoons, was an answer to advocates of a mounted force as well as to the economy minded. It would be mounted for speed, yet trained and equipped to fight both mounted and dismounted.

The regiment, made up of a field and staff (headquarters) and 10 companies, had 34 officers and 714 men, many of whom were formerly in the Battalion of Mounted Rangers. The Ranger commander, Maj. Henry Dodge, was promoted to colonel and given command of the new regiment. Among others on the commissioned staff were a number of experienced infantrymen who were to become famous as cavalymen. Lt. Col. Stephen Watts Kearny entered from the 3d Infantry, Lt. Jefferson Davis from the 1st Infantry, and Lt. Philip St. George Cooke from the 6th Infantry. The combination of Regulars and Rangers gave to the new regiment some officers with a thorough knowledge of military principles and others well acquainted with the type of action that all were soon to experience. None, however, were schooled in cavalry tactics. The officers of the regiment themselves practiced drilling in squads in order to be able to teach the men.

The Army then in the field consisted of 4 regiments (36 companies) of artillery, 7 regiments (70 companies) of infantry, and a regiment (10 companies) of dragoons. The total of 4,282 actually in field service manned some 50 posts scattered over the country.

While most of the Eastern Department had been cleared of Indians, three major tribes (Seminole, Creek, and Cherokee) remained in the southeast. The most troublesome were the Seminoles in Florida, and in 1835 eleven companies of artillery and infantry were sent south to subdue them. Maj. Gen. Winfield Scott, who commanded the force, reported on 29 January 1836 that no

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mounted troops would be needed, but later wrote that horsemen would be essential to the campaign, adding that two mounted Regular companies would be worth twice that number of foot. Meanwhile, the states were called upon for mounted troops.

Congress on 23 May 1836 authorized the raising of 10,000 volunteers and a second regiment of dragoons. The volunteers could be either foot or mounted and the dragoon regiment was to be a duplicate of the regiment of dragoons already in the service. To get the organization of the new Regular regiment started, a detachment of the 1st Regiment of Dragoons, already in Florida, was reorganized as a company of the 2d Regiment of Dragoons and recruiting stations were opened at various places in the Eastern Department. In December 1836 five companies, organized in New York and South Carolina, sailed for Savannah where they left their ships, mounted the horses brought to Georgia for their use, and proceeded to Florida. The men of the remaining companies were more fortunate; they went to Jefferson Barracks, Missouri, where the regimental commander opened a school of instruction for them. In October 1837 the trained companies joined the others in Florida, traveling 1,200 miles overland in 55 days.

In the Florida war, the 2d Dragoons fought mounted less frequently than dismounted. The swamps, marshes, and rivers that separated the hummocks where the Indians had built their villages were almost impassable on foot, and the horse was often an encumbrance.

Besides the Regular cavalry, many mounted volunteers entered the Federal service during the Seminole War. In the first year, 152 companies, totaling 10,712 men, were accepted from the nearby states, and a regiment of friendly Creek Indians was organized. A South Carolina regiment, the Indian regiment, and 35 additional companies served in Florida. The others were employed in Creek and Cherokee country and on the southwestern frontier, mainly to discourage other tribes from helping the Seminoles.

At the end of the Seminole War, the Army was greatly reduced, and the dragoons were hit hard. First, the strength of the company was reduced by 10 privates; next, the number of horses in a company was cut to 40; finally, effective 4 March 1843, the 2d Dragoons were dismounted and reorganized as the Regiment of Riflemen. To turn dragoons into riflemen, only three major changes in the regimental organization actually took place: horses were eliminated, rifles replaced carbines, and the farriers and blacksmiths were discharged. Nevertheless, by this act the mounted force of the U.S. Army was again reduced to one regiment.

No sooner were the dragoons dismounted than agitation for remounting them began. It was argued that at least two mounted regiments should be stationed on the western frontier and maintained there in readiness for swift offensive action. If action were not needed, the mounted force should make a show

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of strength at least once a year by marching into the Indian country. In 1844, as a result of these arguments and pressure from the frontier states for a greater number of mounted Regulars in that area, Congress passed legislation to remount the riflemen and to restore to the regiment its original designation. Instead of moving to the western frontier, however, the 2d Dragoons joined Brig. Gen. Zachary Taylor in Texas in 1845.

In 1846, after war with Mexico had begun, the mounted force was further increased. Legislation passed in May of that year to strengthen the entire Army included provision for seven regiments of cavalry manned by 12-month volunteers, a Regular regiment designated the Regiment of Mounted Riflemen, and an increase in the number of privates in each cavalry company.

The Regiment of Mounted Riflemen was constituted to help establish a military road to the Oregon Territory. For a number of years the opening of the road, part of it through unexplored territory, had been discussed. Money was finally appropriated and a plan developed calling for forts from the Missouri to the Columbia. That there ought to be military protection for the project was evident, and for once a mounted force appeared to be the most economical solution.

Debates in Congress on organizing this new force brought out the point that mounted troops could be used to carry the mail, as messengers, and to guard settlers going west. One member of Congress said he would vote for raising the regiment just to restore a rifle regiment to the Army. Although the United States had once been the rifle country of the world, he contended, it had fallen behind the European nations. There was not one rifle regiment in the establishment. He further stated that the unit should be mounted because, he thought, it was idle to send infantry against Indians who would be on horseback.

Headquarters of the Regiment of Mounted Riflemen was established at Jefferson Barracks in October 1846. The companies, organized at Fort McHenry, Maryland, in Columbus, Ohio, and at Jefferson Barracks, were concentrated at the barracks by the end of the year. But, instead of going to Oregon as intended, the unit joined General Scott's force in Mexico. In crossing the Gulf of Mexico from New Orleans to Point Isabel, Texas, the horses were washed overboard during a storm and the regiment, except for two companies mounted on captured Mexican horses, had to fight as infantry.

The regiment was armed with the Model 1841 rifle and a flintlock pistol. Through the efforts of Capt. Samuel H. Walker of the regiment and inventor Samuel Colt, the War Department purchased 1,000 Colt single-action, 6-shot revolvers for the regiment. More than 200 of the revolvers reached Vera Cruz before the end of the war, but there is no record that the unit used them in the Mexican War campaigns.

As first organized, each company of the Regiment of Mounted Riflemen had 64 privates; in 1847 the number was increased to 70, equalizing that of the

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dragoons. At this time, too, the regiments of dragoons and riflemen were each authorized an additional major, to be promoted from among the captains.

When, because of the Mexican War, the Regular establishment was further increased by 10 new regiments in 1847, 9 were infantry, and the tenth was designated the 3d Regiment of Dragoons. Even though classed as Regular, these 10 units were formed only for the duration and were disbanded at the close of the war.

The Mexican War afforded U.S. mounted Regular troops the first opportunity since the Revolution to engage mounted troops of a foreign organized army, and American cavalymen took part in all of the major campaigns of the war. The 2d Dragoons were in every battle from Palo Alto to Chapultepec. The Mounted Riflemen, fighting dismounted at Chapultepec, earned from General Winfield Scott, Commanding General of the Army, the compliment that became their motto: "Brave Rifles! Veterans! You have been baptized in fire and blood and have come out steel."

During the war the regiments were broken up and the companies scattered. As in the Seminole War they often fought as infantry, but their usual missions were reconnaissance and pursuit. Several small engagements, however, were decided by traditional cavalry charges- horses at the gallop, sabers slashing. A good example was the action at Morena Bridge, near Vera Cruz, on 25 March 1847, when Col. William S. Harney placed his dismounted dragoons and infantry on the right and left of the bridge, holding mounted dragoons in reserve. After a few rounds of artillery from two cannon, the foot soldiers attacked. Once they had made some headway against the enemy, the mounted men joined in and, with their sabers swinging, drove the Mexicans across the bridge. The Mexicans reformed on the far side, but when the cavalry thundered over the bridge the enemy broke once again, and the dragoons pursued.

While Generals Scott and Taylor with most of the Regular Army and the Volunteers were winning battles in Mexico, the commands of Col. Stephen Watts Kearny and Capt. John C. Fremont were securing California and New Mexico for the United States. Colonel Kearny's force, principally mounted, consisted of his own 1st Regiment of Dragoons, the 1st Regiment of Missouri Volunteer Cavalry under Col. Alexander W. Doniphan, a mounted company from St. Louis known as the Laclede Rangers, two batteries of artillery, two small companies of volunteer infantry, and some Indian guides. Fremont had a very small command consisting principally of mounted frontiersmen.

When the war with Mexico came to an end and the usual postwar reductions of the Army began, the Regiment of Mounted Riflemen was retained as a part of the Regular establishment. All the other new regiments were mustered out, and the Volunteers were discharged and returned home.

The Regiment of Mounted Riflemen was at once ordered overland to Oregon, but many of its members took advantage of a wartime law that

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permitted Regulars to receive discharges at the conclusion of hostilities. As a result, the depleted regiment had to wait for recruits at Fort Leavenworth, Kansas. On 10 May 1849 it started its 2,000-mile trek westward, but still its organizational problems continued. After reaching the Oregon Territory the riflemen deserted in droves to go to California and join in the search for gold. In 1851 a mere skeleton of the regiment returned to Jefferson Barracks. It was again brought up to strength and then sent to the Department of Texas where, to implement the treaty of Guadalupe Hidalgo, it tried to keep the Indians of Mexico out of the United States and those of the United States in.

By 1853 the Army of 15 regiments- 4 artillery, 8 infantry, and 3 cavalry was thinly distributed over a greatly expanded country. Artillerymen garrisoned the forts of the eastern and southern coastal areas and along the Canadian border, while infantry and cavalrymen in companies and, troops dotted the area westward from the Mississippi River. Seldom were more than two cavalry troops stationed together.

Although by that time the strength of the Army had been increased by some 3,000 to provide additional privates to companies then in the Indian country, arguments for further increases continued. The Secretary of War asked especially that more cavalry be organized for service in the Pacific Department

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and between the Rockies and the Sierra Nevada Range. In his report of 4 December 1854 he proposed that the horse regiments be brought under one arm:

The cavalry force of our army being all required for active service of the same kind, there appears no propriety in making a permanent distinction in the designation and armament of the several regiments; it is, therefore, proposed to place all the regiments of cavalry on the same footing in these respects, and to leave it in the power of the executive to arm and equip them in such manner as may be required by the nature of the service in which they may be employed.

In 1855 the mounted force grew by two regiments. This time the new organizations were called cavalry. The 1st and 2d Cavalry were constituted on 3 March 1855 not by an act expressly dealing with Army organization, but by an addition to an appropriations bill. The two regiments were organized in the same manner as existing horse regiments but, contrary to the Secretary's recommendation, General Orders prescribing their organization made them a distinct and separate arm. Thus, the mounted force consisted of dragoons, mounted riflemen, and cavalrymen.

The 1st and 2d Cavalry were provisionally armed and equipped with available weapons. A board composed of the field officers of the two commands met in Washington in early 1855 and recommended that parts of their regiments be furnished experimental arms and equipment for trial purposes. As a result, the companies received various types of carbines, including a Springfield that was muzzle-loading, and the Merrill and the Perry, both of which loaded at the breech. Their pistols were Navy-pattern Colt revolvers and their sabers the Prussian type used by the dragoons. The dragoons remained armed with their Mexican War weapons- the Hall carbines, sabers, and horse pistols. The mounted riflemen had their Colt revolvers and percussion rifles, but they were not issued sabers. Although the rifles could be fired from horseback, the riflemen were expected to do most of their fighting dismounted.

For the Army, the years between 1848 and 1860 were marked by a succession of marches, expeditions, and campaigns against the Indians. The Army also provided protection for the settlers' wagon trains, and it explored and Surveyed the hostile Indian country. In this period, too, the slavery problem increased in

intensity. When open warfare broke out in Kansas Territory between slavery and antislavery factions, nearly all the 1st Cavalry and the 2d Dragoons, together with some infantry companies, were sent there to keep the peace. They succeeded in stopping the fighting, but soon thereafter these companies and the rest of the Army were involved in a major conflict that lasted four long years.

### *Civil War*

At the outbreak of the Civil War in 1861, the mounted forces in the Regular Army consisted of the five regiments mentioned, still bearing their different

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names- dragoons, riflemen, and cavalry- and still considered three distinct arms. Besides their different firearms and the number of privates per company, which varied from time to time, the regiments had uniforms that differed principally in the color of the trim, which in 1861 was orange for the dragoons, green for the riflemen, and yellow for the cavalry. The three arms also had distinctive insignia. The dragoons and cavalymen wore crossed sabers and the riflemen "a trumpet perpendicular." In later years the trumpet perpendicular was incorporated in the coat of arms and distinctive insignia of the 3d Cavalry- now 3d Armored Cavalry- the descendant organization of the Regiment of Mounted Riflemen.\*\*\*

Small as they were, the Regular mounted forces could have been of valuable service in the early days of the Civil War if they had been readily available, but they were not. When the war began the companies of the horse regiments were widely scattered over the country; most were in the west and southwest, too distant for ready concentration. In the Battle of Bull Run in July 1861 only seven companies of Regular cavalry were included in the Union Army of about 40,000 men.

So wide a distribution of the nation's mounted forces would in itself have been sufficient cause for concern to the Army in the opening battles. Other factors, however, were equally disruptive and hard to overcome. Many officers joined the Confederacy- four of the five colonels commanding the mounted regiments resigned from the Army. More important, however, was the fact that the military leaders of the day neither valued nor understood the potential of the horse regiments. Although the cavalymen on the western Plains had learned through experience that the continuous, long-range fire of the new breechloading rifles had destroyed the effectiveness of the saber charge against infantry, General Scott and others in Washington clung to that precept for the employment of cavalry. They did not visualize the effective employment of cavalry in broken, wooded areas. Believing that the war would be short, and noting the cost of arming, equipping, and training a mounted force, they agreed that the new improved firearms carried by the less expensive infantry rendered a more mobile force unnecessary. In January 1862 Maj. Gen. George B. McClellan urged the Secretary of War to authorize no more cavalry, to reduce the number of cavalry regiments then in the field, and to strengthen the regiments of this arm that were retained. Nevertheless, before the war ended, 272 regiments, plus 45 separate battalions, and 78 separate companies of cavalry saw service in the Union Army. Although no complete official roll of the organizations in the Confederate cavalry has been found, various estimates exist, and of

\*\*\*For convenience, the word cavalry, unless otherwise indicated, will be understood to mean all three mounted forces.

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these the most reliable shows 137 regiments, 143 separate battalions, and 101 separate companies of

cavalry.

Unlike the infantry regiments, which were first mustered in to serve three months, the volunteer cavalry commands were accepted first for one year and later for three. The expense involved in equipping the cavalry soldier was still considerably greater than that for the infantryman, and it also took longer to train the cavalryman and his mount. Many organizations were severely reduced long before the term of enlistment had expired, but, since no satisfactory replacement system was ever agreed upon by all of the states and the Federal Government, the earlier regiments were retained at skeletal strength while whole new organizations entered the conflict.

While a number of mounted regiments and smaller organizations of Volunteers were mustered in for service in the Union Army, only one mounted regiment was added to the Regular establishment during the entire four years of the war. The new Regular regiment, at first designated the 3d Cavalry, differed from the other horse regiments in that from its beginning it had 12 companies instead of 10. In it, 2 companies constituted a squadron, and 2 squadrons a battalion, which was commanded by a major. A company could have any num-

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ber of privates up to 72. In contrast, the volunteer regiments were modeled after the pattern of the old Regular cavalry.

In August 1861 all six Regular horse regiments were redesignated cavalry and renumbered as the 1st through the 6th in order, according to their respective dates of organization. All were to be armed with the saber, revolver, and carbine. Although these regiments had been known by different names, all were light cavalry. Their members were mounted on light horses, they were trained to fight mounted or dismounted, and they depended on their firearms rather than shock action with sabers. Nevertheless, the dragoons and riflemen objected to giving up their distinctive names. One captain wrote that with the renaming of the old regiments the units lost the honor attached to the old names, and the change had a demoralizing effect on the troops. The dragoons and riflemen also resisted the changes in their distinctive uniform trim; now all were expected to wear the yellow trimmings of the cavalry. Fortunately, from the dragoon and riflemen point of view, under an economy measure that permitted the use of the old uniforms until they were worn out, much orange and green trim was in evidence for a long time.

In July 1862 the number of companies in the five oldest cavalry regiments was increased from ten to twelve, thus giving them the same number of companies as the new regiment. At that time, too, the fixed squadron and battalion organization was abandoned. In actual field service, however, usually four companies, but often fewer, operated as a squadron or battalion.

In 1863 the number of privates authorized in each cavalry company was increased to one hundred, but probably no company ever succeeded in having that many men present and equipped for duty. Recruiting for Regular Army units was extremely difficult in the face of state competition. Bounties offered by Federal officers were met and exceeded by the states. So attractive were their offers that many men enlisted in one unit, deserted, and enlisted in another just to collect the bounties.

During the first two years of the war, the rule of service in the Union Army was to assign one or more regiments of cavalry to each division of infantry for such duties as the division commander might order. The regiments were then broken down into small detachments for use as orderlies and escorts for general officers, guards for division wagon trains, and pickets to protect the front of infantry lines.

Although the cavalry did some effective work in the field, its discipline and morale suffered for want of a responsible chief and of a compact organization. Some cavalry brigades were organized and attached to the various corps in the summer of 1862, but it was not until 1863 that the cavalry made more than an indifferent showing. By then, as the war entered what Maj. Gen. William T. Sherman called its professional stage, the Union cavalry had gained the experience, organization, weapons, and remount service it needed, and from that time on its superiority grew steadily.

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Soon after assuming command of the Army of the Potomac in January 1863, Maj. Gen. Joseph Hooker authorized the formation of a Cavalry Corps. The various regiments and brigades scattered through the Army were combined into divisions and placed in a separate command, a major step toward consolidation, but the idea still prevailed in the Army that the cavalry should be used for the infantry's protection and convenience.

Another cavalry improvement in 1863 was the establishment of a Cavalry Bureau, the chief of which was charged with responsibility for organizing and equipping the cavalry forces and providing their mounts and remounts. He was also responsible for establishing depots for the reception of cavalry recruits and for the collection and initial training of cavalry horses. The Giesboro Depot in the District of Columbia became the principal remount depot for the supply of the armies in the east; St. Louis and Nashville were the depots in the Mississippi Valley.

Cavalry in the Union Army became a really effective force in 1864. Maj. Gen. Philip H. Sheridan, who assumed command of the Cavalry Corps of the Army of the Potomac in April of that year, believed that the functions of a large body of cavalry attached to an active army were not limited to guarding wagon trains or serving as advance guards or flankers for infantry columns, and upon assuming his new command he demanded the right to use the corps independently. He proved that a large force of cavalry, properly organized and led and acting as a unit, could be successful against either cavalry or infantry.

Under Sheridan's leadership, the Union cavalry played a conspicuous part in

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numerous operations of 1864 and 1865. Some good examples are Sheridan's raid on Richmond, Maj. Gen. James H. Wilson's invasion of Alabama, and the flank attacks on Lee's army in the campaign that ended at Appomattox.

Whereas the Union leaders were slow to recognize the true value of and the need for a mounted force, the Confederate leaders seemed from the beginning to appraise cavalry and its functions at their true value. For the first two years of the war the Confederate cavalry was a strong, well-organized force, proving its efficiency on many occasions. Even before the Army of Northern Virginia was organized, separate mounted companies of the South demonstrated their effectiveness by destroying bridges along the Confederate first line of defense and gathering information about Union actions. Instead of being wasted in detail, the Confederate cavalry regiments and battalions, which had the same organization as those of the Union, were grouped into large forces capable of independent action and permitted to perform it.

The Confederate cavalry was the first to demonstrate the effectiveness of the cavalry raid, a distinct product of the American Civil War. By the end of 1862, Maj. Gen. J. E. B. Stuart and his cavalymen had successfully accomplished two raids by which they not only gained information about the Union

Army's strengths and dispositions but also obtained much needed supplies. Of equal importance, Stuart's raids greatly alarmed Federal leaders in Washington, causing them to draw off troops for the defense of that city.

The Confederate cavalry also included the partisan groups led by Brig. Gens. Turner Ashby, John H. Morgan, and Col. John Mosby. These very active commands were classified as cavalry because their men were excellent horsemen. Since the groups operated either wholly in Confederate territory or, as in the case of Morgan, in and out of friendly territory at their own dictates, they were usually able to keep themselves supplied with good mounts. They were also deserving of the name cavalry for the service they performed. The men were expert raiders who made sudden and successful attacks upon Union outposts and supply trains and disrupted lines of communications, brought in reliable information about strengths and movements, and sometimes fought delaying actions.

Unfortunately for the Confederacy, the effectiveness of its cavalry began to decline about the same time that that of the Union cavalry was on the increase. The Confederate decline was due partly to the increased efficiency of the Union horse units and partly to the fact that the South's sources of supply of both men and horses were diminishing.

### *Indian Wars Period*

At the end of the Civil War the ranks of the Regular cavalry regiments were thin indeed, as were those of the other Regular regiments. Of the 448 companies of cavalry, infantry, and artillery authorized, 153 were not organized, and few,

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if any, of those in being were at full strength. By July 1866 this shortage had eased since many of the members of the disbanded Volunteer outfits had by then enlisted as Regulars. By that time, however, it became apparent in Washington that the Army, even at full strength, was not large enough to perform all its duties. Consequently, on 28 July Congress authorized 4 additional cavalry regiments and enough infantry companies to reorganize the existing 19 regiments- then under two different internal organizations- into 45 regiments with 10 companies each. After this increase there were 10 regiments of cavalry, 5 of artillery, and 45 of infantry. Cavalry companies accounted for 20 percent of the total number of company-sized organizations. The Regular Army's authorized strength of approximately 57,000 officers and men was then more than double what it had been at the close of the war. The whole arrangement was remarkable because it was the first time in the nation's history that the Regular establishment had been increased substantially immediately after a war.

Recruiting for the increase began at once. Emphasis was placed upon securing veteran Volunteers before they left the service. The officers were selected from both Volunteers and Regulars; each candidate was required to have had at last two years of honorable service in the Civil War.

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The new cavalry regiments, numbered 7th, 8th, 9th, and 10th, were organized under the same tables as the 6 already in existence. A regiment consisted of 12 companies formed into 3 squadrons of 4 companies each. Besides the commanding officer who was a colonel, the regimental staff included 7 officers, 6 enlisted men, a surgeon, and 2 assistant surgeons. Each company was authorized 4 officers, 15 noncommissioned officers, and 72 privates. A civilian veterinarian accompanied the regiment although he was not included in the table of organization.

The 9th and 10th Cavalry were composed of Negro enlisted men and white officers. Their organization differed from the others in that each had an assigned chaplain whose duties included instructing the enlisted men in fundamental school subjects. At that time and until 1901, chaplains were normally assigned to Army posts.

During the Civil War, some cavalry companies began to call themselves troops. For many years the smallest unit for administrative purposes in the cavalry was officially the company. The word troop had first officially been used in an act of 17 July 1862, which prescribed the organization of a "company or troop." The next step came when the revised regulations of 1873 omitted company. Yet for almost ten more years the U.S. Army had cavalry companies. By 1881 many units were using the newer term, and in 1883 all were directed to use it. Still later, however, it was not unusual for both terms to be used in the same regiment.

Another important provision of the act of 28 July 1866 was the authorization of a corps of Indian Scouts as an integral part of the Army. Before 1866, friendly Indians had often been employed as Army guides on the frontier, but they were not officially a part of the establishment. Under the new arrangement 1,000 Indians could be enlisted as scouts in the Indian country. They were apportioned to the various commands and continued to be used in varying numbers for about fifty years. They were last employed in the Punitive Expedition into Mexico in 1916. Most commanders found the scouts to be excellent light cavalrymen.

Among the peacetime problems the Army helped to solve, those occurring in the Great Plains and the Far West most needed the services of the mounted arm. By 1868 the bulk of the cavalry was in the west. Ninety-two companies were stationed among 59 posts within the vast area from the Canadian border to the Rio Grande and from Kansas to California. The Plains Indians who inhabited much of this area were splendid riders. They traveled and fought on horseback with a skill that gained the respect of the U.S. cavalrymen. They had mobility and speed, and since these features were characteristic of American cavalry, mounted soldiers were a more effective force than infantry in employment against them. The cavalrymen pursued marauding Indians on horseback,

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and if the chase ended, as it usually did, in a dismounted fight, the cavalrymen were trained for that as well.

During the years immediately following the Civil War, the Army was indispensable to the opening of the Plains area. The numerous discoveries of precious metals, the availability of cheap land, and the construction of wagon roads and railroads brought more and more settlers to the new west. All needed military protection since the Indians resisted the encroachment of white society. The many posts established ahead of settlements, and abandoned when the frontier had moved beyond them, testify to the fact that the Army continuously cleared the way for civilization.

The fluid condition of the frontier caused most of the Army's work to be performed by small units. Usually a company of infantry and one of cavalry garrisoned a post, but often a single company constituted the only military protection for miles. One officer wrote that his men, few in number, kept horses saddled at all times to be ready for the danger, which was ever-present. In 1882 the troops of the 10 cavalry regiments were dispersed among 55 posts in the Indian country. The posts having the largest mounted forces were located in the Departments of Missouri and Texas. The 1st and 5th Cavalry were the most

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widely dispersed, troops of the 1st occupying 10 stations in Washington, Oregon, Idaho, Nevada, and California, and those of the 5th 7 posts in Wyoming and Nebraska.

Such fragmentation made serious training for a foreign war impossible. Even though the country was well insulated and did not seem to be threatened by foreign powers, the high command recognized as a dangerous liability the inability to concentrate and train its units. Maj. Gen. John M. Schofield, commander of the Division of the Pacific 1882-83 and of the Division of Missouri 1883-86, described the Army as a mere police force. Beginning in the 1880's, to offset the evils of fragmentation, schools were established to give intensive training. The first of these was the School of Application for Infantry and Cavalry founded at Fort Leavenworth, Kansas, in 1881. Here, graduates of West Point put to practical application the theories they had learned at the Academy. Here, also, came student officers detailed from the field to improve the knowledge of their profession. The school troops came from the four companies of infantry and four of cavalry, plus the one light battery of artillery, which garrisoned the post. Twenty years later the school was expanded into the General Service and Staff College and opened to officers of all branches; today it is the Command and General Staff College.

In 1887 Congress appropriated \$200,000 for a school at Fort Riley, Kansas, to instruct enlisted men of cavalry and light artillery, but five years went by before the Cavalry and Light Artillery School was formally established. Once it opened its doors, however, complete regimental troops and batteries trained there, as did recruits before they joined a regiment. In the years that followed, the school changed names several times, in 1907 becoming the Mounted Service School; in 1919, the Cavalry School; on 1 November 1946, the Ground General School; and in 1950, the Army General School. The school was discontinued in May 1955.

When first established, the School of Application for Infantry and Cavalry and the Cavalry and Light Artillery School were simply military posts with a training responsibility added. The department commander could order the men at the post off to duty at any time, but while not otherwise employed the garrisons formed the basis for practical instruction that enabled the officers and men who participated to study the duties of the soldier in garrison, in camp, and on the march.

The U.S. cavalry did not fight against a formally organized foe during the period of 1866-91, but doctrine and drill did evolve for use should such an enemy appear. The foundation of all the rules was the basic thought that cavalymen must be drilled as infantry and must at all times be prepared to fight on foot. Such a provision was no more than a natural extension of Civil War experience. Instructions for mounted cavalry charges were also included.

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A rather startling alteration occurred when the cavalry in 1873 adapted the Infantry Tactics, accepted by the infantry in 1867, as its drill manual. This system, prepared by Maj. Gen. Emory Upton, altered previous teaching because it based troop evolutions upon movements by fours. These movements were suited to drill with horses since they allowed room for the mounts to maneuver where earlier ones had not. The cavalry continued to drill by the infantry system until late in 1891, when the War Department issued separate sets of drill regulations for the cavalry, infantry, and artillery. For the cavalry, the squadron consisted of not more than four and not less than two troops, and the troop in marching was divided into two, three, or four platoons, depending upon the number of fours.

Improvement in troop distribution came about very slowly. During the late 1880's subjugation of most

of the Indians and completion of many miles of railroad made possible the concentration of larger forces at fewer posts. Unfortunately, cavalry did not profit to the same degree as infantry. Indeed, until the outbreak of the War with Spain in 1898, all the cavalry units except one squadron at Fort Myer, Virginia, and one at Fort Ethan Allen, Vermont, were still stationed in the west. In that area, 92 troops remained divided among 31 posts. In many instances, as before, one troop formed the entire garrison of a post; at others there were as many as four troops; the average was two.

From 1866 until 1901 no new cavalry regiments were added to the Regular Army. There were, however, some alterations in regimental organization. In the major reduction of the Army in 1869-70, the cavalry companies lost a few noncommissioned officers, but for six years thereafter the authorized strength and organization of the companies were unchanged. In the meantime, campaigns against the Indians continued and commanders clamored for more mounted troops. At the time cavalry still constituted about one-fifth of the entire Army, roughly the same ratio as in France and Germany.

In June 1876 the Sioux wiped out Col. George A. Custer and nearly half (5 companies) of the 7th Cavalry at the Little Big Horn. Partly as a result of this catastrophe, Congress voted a permanent increase in the mounted force. The new law actually cut 5,000 from the total number of enlisted men in the Army as a whole, but added 2,500 to the cavalry units employed against the Indians. Each company so employed could have 100 enlisted men, provided the total Army strength of 25,000, then authorized, was exceeded by no more than 2,500. The maximum 100-man cavalry company continued until 1890, but few units reached the authorized strength and fewer maintained it.

By 1890 the abatement of the Indian threat brought about the first reduction in cavalry since the Civil War. Troops L and M of all regiments were disbanded and the number of privates in each of the other companies was reduced to 44, in effect a reduction of about 50 percent.

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The next year part of the cut was restored in an experiment that attempted to integrate Indian soldiers into Regular Army units. The primary object was to give employment to a considerable number of warriors from the most dangerous tribes. Troops L of the 1st through the 8th Cavalry were reactivated with Indian enlisted personnel drawn, as nearly as possible, from the area in which each regiment was serving. For example, Troop L, 1st Cavalry, in Montana was filled in a very short time by members of the Crow tribe. That fall (1891), the regimental commander reported that the new troopers possessed all the characteristics and traits essential to good light cavalry. Nevertheless, due partly to the language barrier and partly to the general attitude that existed between the two races, the experiment failed and the last unit of this type, Troop L, 7th Cavalry, was disbanded in 1897.

Changes in the arms, uniforms, and accouterments of cavalry were few and slow. The large supply of equipment on hand in 1865, sufficient to equip the regiments for a number of years, delayed readjustments. The Spencer repeater carbines, furnished the horseman during the war, were gradually replaced after 1873 by the converted single-shot Springfield rifle and carbines of the same

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pattern, both .45-caliber. In the category of hand guns, a few .45-caliber Colt revolvers, using metallic cartridges, were purchased in 1871-72 for testing. These revolvers became standard and remained so until replaced in 1894 by the smaller caliber .38.

Brig. Gen. George Crook, the Indian fighter and peacemaker, improved the logistics of the Indian Wars

when he discarded wagon trains in favor of pack mules and thus could usually have supplies at hand. There was no waiting for the trains to catch up because the mules, each carrying about 200 pounds, were a part of the column.

Although at the beginning of the Civil War cavalry horses were scarce in the Union Army, the shortage was soon corrected and at the war's end the Army had a surplus of horses of all classes, including those for the cavalry. During the year following the close of the war, the Army sold more than 104,000 horses of all classes at public auction, and as of 30 June 1866 it still had at depots 4,645 surplus serviceable horses, of which 3,829 were for the cavalry. During the year 1866, only 150 more were purchased and they were for use in the Department of California where it was wiser to buy than to risk transporting from the east.

In 1883 the Army began to purchase horses in open market (from farmers, ranchers, and others) instead of by contract as had been the custom. This system appealed to cavalry officers and they fought for its retention when the contract method was resumed two years later. Their attitude can be understood, for in open-market procurement cavalry officers inspected and purchased horses for the cavalry, while under the contract method the Quartermaster General's Department procured and inspected all types of horses for the Army. Naturally cavalymen, believing that only cavalymen could select cavalry horses, objected to the change.

Cavalry officers also fought for the establishment of a remount station where all cavalry horses would be broken and trained before being shipped to the troops, and where better horses could be bred. General Crook's description of a shipment of forty horses received in his command in 1884 shows why the officers felt as they did. One of the forty bucked itself to death, another died of an obscure disease, a third gave out on the road, and sixteen were condemned by a board of officers of the regiment receiving them.

Giesboro and other depots that had made possible a ready supply of mounts during the Civil War were closed when the Cavalry Bureau was abolished on 4 October 1866. Then Carlisle, Pennsylvania, became the principal cavalry depot, but was important as a station for collecting recruits rather than for breaking and training horses. Even four years later in 1870 when the principal cavalry depot was established at St. Louis Arsenal in the midst of what was then the horse country, the depot was not important as a remount station. Thus, despite the arguments for a more effective remount service, no stations were established for this purpose until almost forty years later. In May of 1908

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Congress authorized the establishment of a remount service, and the War Department turned over to the Quartermaster Department the Fort Reno reservation for use as a remount depot. Additional stations were opened in 1911 at Fort Keogh in Montana and at Front Royal, Virginia, and in 1916 at El Paso and Fort Sam Houston, Texas.

The cavalry fought its last Indian battle of any significance in the winter of 1890-91 when it engaged and subdued the Sioux at Wounded Knee Creek in southwestern South Dakota. Except for labor uprisings for which the Army sometimes was called out, the next few years were comparatively peaceful.

### *1892-1916*

The years following the Indian Wars saw some improvements in the mounted arm. There were the new

drill regulations, already mentioned, and the Army adopted a new shoulder arm- the Krag-Jorgensen. Manufactured as both a carbine and a rifle, the Krag-Jorgensen was a .30-caliber magazine weapon. It had a muzzle velocity of about 2,000 feet per second, and it used a cartridge containing smokeless powder. The new weapon was not in full supply by 1898 when the United States intervened in the trouble between Spain and her island possessions, but there were enough carbines to equip the Regular cavalry and one regiment of Volunteers.

Despite minor improvements, the U.S. cavalry of 1898 was not prepared for war. Enlisted cavalrymen numbered fewer than 6,000, and they were as scattered as at the opening of the Civil War, mainly through the western part of the country, though part of the 3d Cavalry was at Fort Ethan Allen, Vermont, and part of the 6th Cavalry was at Fort Myer, Virginia. Most of the troopers were garrisoning posts in Montana, Wyoming, Colorado, Kansas, and other western states. Again they were called in from great distances, some arriving on their mounts and others coming by rail.

Except for their wide dispersion, the Regular cavalry regiments of 1898 were in no worse condition than was the rest of the Army at the time. There were then only 27,000 enlisted men in the entire Army and therefore the Army had to be strengthened. For the Regular cavalry, an act of 26 April 1898 authorized the reactivation of 2 troops in each regiment- some of the reactivated troops had been inactive since 1890, and others were last filled with Indians and added to each troop a lieutenant, a sergeant, 4 corporals, and 34 privates. A troop then aggregated 104 and a regiment 1,262 officers and men.

There was no further increase in the Regular mounted arm then, but the Regular force was augmented by Volunteer organizations mustered for short terms. They were of two classes: the Volunteer Army of the United States, consisting of State Organized Militia units; and the United States Volunteers, consisting of new units recruited at large. Of the first type, three regiments and

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nine separate troops of cavalry were mustered in from eight states. Illinois, Texas, and Ohio each furnished a regiment; Pennsylvania, three troops (Philadelphia City Troop, Governor's Troop, and Sheridan's Troop) ; Kentucky and New York, two troops each; and Nevada and Utah, one troop each. The Pennsylvanian and New York troops served in Puerto Rico and the Nevada troop in the Philippine Islands. The others did not leave the United States. Many of these units have since had continuous existence in their respective states. Now, having been converted and reorganized to be of present-day usefulness, they no longer bear the name cavalry, but each proudly remembers its origin and record in the old arm.

Acts of Congress approved on 22 and 23 April 1898 authorized the Secretary of War to organize from the nation at large Volunteer units having special qualifications. These units were to have federally appointed officers and were not to exceed a total of 3,000 men. Although Congress did not specify that the specially qualified units would be cavalry, the regiments organized under these acts were the First, Second, and Third United States Volunteer Cavalry. Of these, only one, the First United States Volunteer Cavalry, took part in the War with Spain. This regiment, better known as the "Rough Riders," had as its leaders Col. Leonard Wood and Lt. Col. Theodore Roosevelt. When organized in May 1898, the First United States Volunteer Cavalry mustered 47 officers and 994 enlisted men. It served dismounted in Cuba from 22 June until 8 August 1898 and was disbanded 15 September of the same year. The Second and Third United States Volunteer Cavalry were organized in May 1898 and disbanded in the fall of that year without having been outside the United States.

Antiquated militia laws, in effect since 1792, permitted the induction into Federal service of state

organizations, poorly trained and equipped, and far below authorized strength. A look at the equipment these units brought in explains to some extent their lack of training. The firearms belonging to many of the units were worthless outmoded pieces that had to be replaced by the Federal Government. In exchange for their unserviceable arms, they received the single-shot Springfield .45-caliber rifles or carbines. These were of two models, 1896 and 1898, and the safety lock on the 1896 model worked exactly opposite to that on the 1898 model. This difference accounted for some of the objections raised by men who received the Springfields, but their complaints were partially adjusted when an effort was made to furnish only one model within a unit. Another objection to the Springfield was based upon a comparison of it with the newer smaller-caliber Krag-Jorgensen, adopted in 1892 as a standard arm for Regulars. The Krag-Jorgensen was in short supply, while the supply of Springfields was plentiful. Fortunately the Volunteers, after training with the Springfields, were almost convinced that its single-shot action,

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except in rapid-fire target practice, was as effective as the newer magazine-type carbine, and that the Springfield's larger bullet was more deadly.

Two large forces, one in the east and one in the west, assembled simultaneously. In preparation for service in two widely separated parts of the world, thousands of men and horses moved by way of Chickamauga, Georgia, to Tampa, Florida, for shipment to the West Indies and some 10,000 men in San Francisco awaited transportation to the Philippine Islands. Many ships were needed to move them and only a few were available. No cavalry was included in the first three shipments to the Philippines.

The Regular cavalymen who moved east for service in the West Indies were little affected by the climate and inconveniences of the southern camps, but they were not prepared for the problems occasioned by the lack of shipping space. Because there was no room on the transports for them, about one-third of the men of each regiment and all of the horses, except those of the officers, were left behind when the expedition finally got under way. Once in combat, the troopers again demonstrated their ability to fight on foot as well as mounted.

In accordance with the act of 22 April 1898, the U.S. forces were organized into Army corps, divisions, and brigades. These were provisional commands, which ceased to exist after the war ended. Among the general officers chosen to head these larger organizations were many who had achieved prominence as cavalry leaders in the Civil and Indian Wars. Of particular interest is the fact that two former Confederate cavalymen, for many years forbidden to serve in the United States Army, were among them- Maj. Gen. Joseph Wheeler and Maj. Gen. Fitzhugh Lee. General Wheeler commanded the cavalry division in the West Indies, and it was he who later asked for cavalymen and their mounts in the Philippine Islands. General Lee commanded the Seventh Corps in Florida.

General Wheeler's dismounted cavalry division in Cuba consisted of about 3,000 troopers from the 1st, 3d, 6th, 9th, and 10th Cavalry and the Rough Riders. Armed with their carbines and revolvers- their sabers were left behind with the horses- and fighting as infantry, they won a victory at La Guasima on 24 June and about a week later joined the infantrymen in storming and capturing San Juan Hill and capturing the city of Santiago. In this action the Rough Riders, who in their eagerness dashed ahead of the Regulars and caught the first fire from the Spaniards' Mauser rifles, suffered heavy casualties.

There was also one mounted squadron in Cuba and one mounted troop in Puerto Rico. The squadron, composed of Troops A, C, D, and F of 2d Cavalry, mounted on local horses and commanded by Lt. Col. William A. Rafferty, formed part of an independent brigade under Brig. Gen. John C. Bates. In the

dense undergrowth covering most of the country, the squadron was unable to perform some of the duties usually assigned to a mounted command, but in the Battle of El Caney its mounted detachments escorted batteries and trains to

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the front lines, and the individual troopers acted as couriers and litter bearers. The other mounted unit, in Puerto Rico, was Troop C, New York Volunteer Cavalry.

Although no cavalry units went to the Philippine Islands in 1898, one regiment, the 4th, arrived the next year and less than two years later eight Regular regiments were employed there. In the meantime, the term of service of the Volunteers mustered for the War with Spain having expired with the signing of the Treaty of Paris, Congress acted on 2 March 1899, to increase the military force. Among other measures, it authorized three additional cavalry units and an increase in the number of enlisted men in a cavalry troop to one hundred. Two new cavalry units were organized: one the 11th United States Volunteer Cavalry, composed mainly of Americans then in the Philippine Islands; the other a squadron of Filipinos. These units were organized from volunteers recruited in accordance with the provisions of the act of 2 March 1899, which permitted enlistments of volunteers from the country at large or from localities where their services were needed, and from the Volunteer organizations whose terms of service had expired. The act also provided that volunteers having special qualifications in horsemanship and marksmanship were to be assigned to cavalry

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for service either mounted or dismounted. Both Volunteer cavalry organizations were disbanded on 2 July 1901.

The service of the cavalry in the Philippine Islands after the capture of Aguinaldo, the leader of the Filipino independence movement, in March 1901 might well be described as daily and nightly patrols by small detachments commanded by junior officers. These little groups often encountered large bands of insurgents armed with bolos and U.S. rifles. A regimental report from the history of the 1st Cavalry is typical of the period

On December 8, 1900, detachment Troop M engaged a force of two hundred insurgents on Boot Peninsula, Lake Taal, dispersing them in a running fight of two and one-half hours duration. Private Ernest Shrey, Troop M, killed. Four insurgents killed; captured three prisoners, their arms and ammunition.

On 5 May 1901, Lieutenant Hartman with Troop K engaged about two hundred and fifty insurgents at Mount Solo, drove them from three separate positions, killing one, capturing three, also six ponies, three rifles, and three bolos.

This type of warfare afforded little space for grand strategy and tactics, but the work performed by the enterprising and courageous junior officers won them promotions and helped prepare them for higher commands in World War I. Chief among the young American officers was John J. Pershing, Captain of Cavalry.

While some U.S. troops were thus occupied in the Philippine Islands, affairs in China drew others still farther away from home. The United States made a substantial contribution to the international army that went to China at the turn of the century to protect the various embassies from attack by the Chinese

Boxers. A cavalryman commanded the American contingent in the international force and the greater part of one U.S. cavalry regiment formed a part of it. The American commander was Maj. Gen. Adna R. Chaffee, Sr., an experienced Indian fighter; the cavalry regiment was the 6th, the same organization in which General Chaffee had enlisted as a private in 1861. While the regimental headquarters and 1st Squadron, 6th Cavalry, guarded American interests in Tientsin, the 3d Squadron formed a part of the force that stormed the walls of "The Forbidden City" at Peking and became the first white troops to enter the city. In China, the American cavalymen met and fought beside cavalymen of other nations. Among them were the First Bengal Lancers, of whom officers of the 6th furnished most complimentary reports.

On 2 February 1901, when the 2-year enlistments of the Volunteers were about to expire and the end of occupation duties in the Philippines appeared to be nowhere in sight, Congress passed an act that provided for an increase in the cavalry and infantry and completely reorganized the artillery. The increase in cavalry included 5 new regiments, numbered the 11th through the 15th. Also, it added a captain, 3 second lieutenants, a commissary sergeant, and 2 color sergeants to each regiment, old and new, and by it all regiments got a regimental

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chaplain. The act also contained provisions for further increasing the enlisted strength of a troop from 100 to 164 at the discretion of the President. As a result, the number of enlisted men in a cavalry regiment varied. Units within the United States were reduced to the minimum, while those serving in the new island possessions were increased according to the duties being performed in each. Naturally, the greatest number were required in the Philippines, and for some years the cavalry regiments took turns serving there as well as in Hawaii, Panama, and various stations in this country, the last again mainly in the west.

From 1901 to 1916 the size of the Army varied from year to year. In 1901 Congress set the maximum strength at 100,000, and thereafter until 1916 the actual strength was regulated by annual appropriations. From 1902 to 1911 it averaged 65,616. The cavalry continued to comprise about one-fifth of the total. The Army's actual strength on 30 June 1915 was 105,993, including the Hospital Corps, the Philippine Scouts, and a regiment of Puerto Rican infantry. Of these, 15,424 were assigned to the cavalry. More than seven full regiments, or about one-half of all the cavalry, were serving on the Mexican border, two regiments were in the Philippine Islands, and one was in Hawaii.

During these years when greater interest in a more effective tactical organization of the Army was manifested, cavalry received special consideration. In 1908 the Army Chief of Staff and various department commanders recommended an increase in the infantry and artillery and a reorganization of the cavalry along "more modern" lines. For a time, it was believed that U.S.

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cavalry regiments should be reorganized to conform to the pattern of European regiments of the same arm. New formations suggested were actually a revival of those prescribed in Scott and Poinsett's Tactics more than seventy-five years earlier and, so far as written instructions went, had been in force during the Civil War.

European armies still clung to the idea of heavy cavalry, trained almost exclusively for the charge in mass and relying on sabers and lances. On the other hand, U.S. cavalymen were convinced that open order formations in which the pistol, or revolver, was the principal arm produced more decisive results in mounted combat, especially when accompanied by the element of surprise and employed against

fugitives or inferior troops. From 1911 until 1916 the Army conducted various experiments in cavalry reorganization and employment.

In 1911 and 1912 the 12-troop regiment was temporarily reorganized into one of six troops by consolidating two troops into one. It was supposed that this action would result in a more compact unit and bring all men within the sound of the colonel's voice. Employment of cavalry versus cavalry in mounted action was contemplated. Experimental drill regulations prescribed double rank formations, as was the European custom, and field regulations stressed more mounted action. Horsemanship, improvement of mounts, and proficiency in the use of the saber were emphasized. At the same time, it was clearly stated that cavalry's efficiency with the rifle and in fighting dismounted must not be lessened.

In answer to several Congressional proposals to reduce the cavalry from fifteen to ten regiments, the Chief of Staff in 1912 opposed any reduction, pointing out that the small amount of cavalry in the Organized Militia made it most essential that the fifteen Regular mounted regiments "be maintained and maintained at the highest degree of efficiency." At the same time, the Chief of Staff called attention to the damaging effects upon regiments that resulted from detaching troops to police the National Parks. Since the opening of Yellowstone in 1872, cavalry troops had been detached from their regiments to police the National Park lands. With the management of the reservations now under the Department of Interior, the Army suggested that Interior should employ its own rangers. When this advice was followed a few years later, the Army agreed to discharge cavalry enlisted men volunteering for service as rangers.

In October 1914 experimental cavalry service regulations (based upon the experimental drill regulations) were issued to all cavalry regiments and were given an "extensive try out" in the border service of 1915 and 1916. Reports from cavalry commanders showed that 90 percent of the commanders preferred the old statutory organization of troop, squadron, and regiment employed in single rank. They believed that a mounted unit of any size from platoon through regiment, employed in successive lines each in single rank, was just as powerful as the same number of troopers in a double rank. They also contended that this

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system afforded much less danger of inversion and provided fresh reinforcements with proper timing, or distances, between the lines.

Consequently, new drill and service regulations issued in 1916 retained the former organization and instruction for single rank formations, but provided for movements in double rank when circumstances required. Also taken from the 1914 experimental regulations was the basic principle- leading. The new manual stated that mounted units must be habitually led by their commanders. The manual also treated in detail the training of the recruit and the new mount.

Plans for a more effective organization included 'better location of the cavalry. Upon their return from Cuba and the Philippine Islands, cavalry units had again been stationed at posts established during the Indian Wars, located far from centers of population and supply. Most of the posts were entirely too small, and many were in sections of the country where for several months in the year climatic conditions made outdoor work impracticable. As late as 1911, 49 posts in 24 states and territories were still in use, 16 of them by cavalry alone or by cavalry with infantry. Thirty-one posts had a capacity for less than a regiment, 6 could accommodate little more than a regiment, and only one could care for a brigade. The average number of companies at a post was 9, or about 650 men. Secretary of War Henry L. Stimson

described the Army so distributed...as...merely...groups of local...constabulary instead of a national organization."

In 1910-11 internal conditions in Mexico resulted in the overthrow of the government of that country and caused the United States to concentrate most of its Army strength in the southwest. Thus, for a while necessity solved the problem of a badly scattered Army. The greater part of the Regular Army moved to the border area in March 1911. While most of the cavalry patrolled the border from the mouth of the Rio Grande to San Diego, California, other units in the area were organized into one division and two independent brigades for maneuver purposes. One cavalry regiment, the 3d, formed a part of the division, and the 9th and 10th Cavalry plus a signal company made up the independent cavalry brigade. When the immediate danger subsided about five months later, the division and brigade organizations were broken up and the units comprising them returned to their former stations. One important result of the experiment was the decision to move cavalry to permanent stations in the southwest, and some outfits that had been employed there in mounted patrol duty remained in the area.

When counterrevolutions occurred in Mexico in 1913, back to the border area went a large part of the Regular Army. From then throughout World War I and many years afterward, except for the short time they were in Mexico as part of the Punitive Expedition, most U.S. cavalry regiments maintained border patrols from the Gulf of Mexico almost to California, a distance of approximately 1,700 miles. The duties of these patrols included protecting the border from incursions by individuals and small raiding parties; prevent-

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ing violations of neutrality laws; and, in conjunction with civil authorities, barring passage of arms and ammunition from the United States into Mexico. In addition, U.S. soldiers gave medical aid to all wounded who were brought across the border. In general, the troopers performing border service lived a monotonous and unenviable life. In that desert area there was no natural protection from the burning sun of the day, and the tents in which they were housed provided little defense against the cold nights. In addition, many troopers were wounded because the Mexicans ignored repeated U.S. warnings not to fire in the direction of the border.

On the night of 8 March 1916 border events came to a head when Mexican bandits made a surprise attack on Columbus, New Mexico. As a result, U.S. soldiers crossed the border for the ostensible purpose of capturing the bandit leader, Francisco (Pancho) Villa. The Punitive Expedition into Mexico was principally a horse cavalry action, the last such in American history.

In many respects the service performed by the troopers in Mexico was comparable to that they experienced in tracking down the elusive Indians in the years following the Civil War. The hardships they endured were increased by the lack of co-operation on the part of the Mexican Government and the natives. Conflicting information as to the direction the bandits took after their forays more often than not sent the Americans on long circuitous routes, thus delaying their arrival at strategic points and giving the bandits plenty of time to escape. The rough, irregular terrain and the varied climate of Mexico added many discomforts.

It was after a forced march through the irregular terrain, during which the men were in their saddles for 17 hours out of 24, that U.S. troops fought the only battle of the expedition directly concerned with Villa. On 29 March 1916 Col. George A. Dodd and 400 men of the 7th Cavalry surprised and attacked 500 Villistas. at Guerrero.

On 9 May 1916 National Guard units from Texas, New Mexico, and Arizona were called into Federal service for patrol duty along the Mexican border. About five weeks later, on 18 June 1916, most of the remainder of the National Guard was called in. In all, these included 3 regiments, 13 separate squadrons, and 22 separate troops of cavalry. There were 108 regiments and 7 battalions of infantry and 6 regiments, 12 battalions, and 17 batteries of field artillery. Cavalry constituted a very small portion of the National Guard since the states preferred to have infantry regiments- they were considerably less expensive- but by the National Defense Act of 1916, they were required to organize more auxiliary troops and fewer infantry. The states were in the midst of a reorganization program when National Guard units were ordered into Federal service. In spite of all the confusion, the National Guardsmen moved to the border area on schedule, and eventually better legislation corrected many of the weaknesses revealed during their tour there.

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Not since the Civil War had a sizable force been assembled for a sufficient period to train officers in the field grades. The numerous posts scattered over the vast area in which the Indian Wars were fought usually were garrisoned by a force comprised of a troop of cavalry and a company of infantry and led by company officers. Seldom were troops from several posts assembled in sufficient forces or for periods of time sufficient for officers to get practice in leading units larger than a company. In fact, during the Indian Wars many of the actions were fought by detachments commanded by lieutenants.

Even though the transportation and supply system tested during the Punitive Expedition into Mexico was found lacking in many respects, the trial gave hope of improvement over the established system. One of the innovations was the introduction of motor trucks as part of the logistics system, and many disappointments and inconveniences were occasioned by the mechanical failures of the trucks. Members of the expedition and others in Washington averse to change were not in the least surprised or disappointed that the new equipment had not yet proved that the gasoline engine would replace the horse. Yet there

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were a farsighted few who believed in the gasoline engine and would not let their experiences discourage them in their plans for future developments.

During these years some changes were made in the composition of the cavalry regiments. In 1906 a machine gun platoon, commanded by a commissioned officer, was added to each regiment, and in 1912 a headquarters detachment and a supply detachment were added. By 1915 the machine gun platoon and the headquarters and supply detachments had become experimental troops, and the next year they became permanent. At that time, too, the experimental organization of a 6-troop regiment and the idea of reorganizing U.S. cavalry along European lines were abandoned.

Thus, the cavalry regiment of 1916 had a headquarters, a headquarters troop, a supply troop, a machine gun troop, and 12 lettered troops, the last organized into 3 squadrons of 4 troops each. All regiments had the usual complement of officers (a colonel, a lieutenant colonel, 3 majors, 15 captains, 16 first lieutenants, and 16 second lieutenants), but the number of enlisted men varied with the service required of the regiment. For example, the authorized enlisted strength of regiments serving within the continental United States was 70 men in a troop, while regiments in the Philippine Islands were permitted a total of 105 enlisted men in each lettered troop.

The National Defense Act approved on 3 June 1916 set the peace strength of the Regular Army at

220,000 officers and men and of the National Guard at 450,000. Increases to reach these strengths were to be spread over a period of five years. In units, additions to the Regular Army amounted to 10 regiments

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of cavalry, 33 of infantry, and 15 of field artillery; 13 battalions of engineers; 93 companies of coast artillery; and a number of signal, medical, and other auxiliary troops.

The act also provided for the organization of brigades and divisions, which previously had not been permanent- that is, they had been organized during an emergency and existed only so long as the specific emergency lasted. Civil War brigades and divisions, for example, were disbanded when the war ended, and new ones created for the War with Spain were not continued after the close of that struggle.

The new plan called for 2 cavalry and 7 infantry divisions. A cavalry division consisted of a headquarters, 3 brigades (each with 3 cavalry regiments), a horse field artillery regiment, a mounted engineer battalion, a mounted signal battalion, an aero squadron, and the necessary trains: ammunition, supply, engineer, and sanitary. The remaining 7 authorized cavalry regiments were assigned to the 7 infantry divisions, a regiment to each division, to provide a mobile force capable of performing reconnaissance, counterreconnaissance, and security missions for the division. Because of their mobility, the cavalry divisions were free for reconnaissance or other duties that took them considerable distances from the remainder of the Army. The regimental organization under the 1916 act remained unchanged, retaining its 12 lettered troops in 3 squadrons, a headquarters troop, a supply troop, and a machine gun troop. Enlisted strength of a line troop was fixed at 70 for peace and 105 for war.

As part of the 1916 plan for increase of the Army, two cavalry regiments were authorized in the first increment. Designated as the 16th and 17th, they were organized in July 1916 at Forts Sam Houston and Bliss, Texas, respectively. To enable the new organizations to become operational as soon as possible, experienced officers and men from existing cavalry regiments were transferred to the new ones, and by mid-July 1916 the 16th and 17th Cavalry were in fair shape. These were the last additions to the cavalry arm until after the declaration of war on Germany.

In the matter of arms and equipment during this period, it is important that in 1904 the new U.S. rifle Model 1903 replaced the Krag-Jorgensen as the standard arm of cavalry, as well as infantry, and remained so until the beginning of World War II. Cavalrymen readily accepted the new shoulder arm. It could be handled as well while mounted as on foot, and it had a range greater than that of the carbine.

A new side arm, the Colt automatic pistol caliber .45, was approved 29 March 1911, and by the time of the Punitive Expedition all troops in the United States were armed with it. Units going to the Philippine Islands, where there had been so much demand for an arm of this caliber, took it with them, but no special effort was made to supply those already there.

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In 1914 the semaphore code, until that time used only by field artillery, was authorized for cavalry, infantry, and engineers. The fifty-six kits furnished for each cavalry regiment were distributed four to a troop.

### *World War I*

*Cavalry.*

The cavalry organization of seventeen regiments in effect when the United States entered the war against Germany was based upon the National Defense Act of 1916. In May 1917 emergency laws called for immediate increase to the full strength authorized by the National Defense Act, and organization of the remaining eight new cavalry regiments began at once. To speed up the process, certain old units in June 1917 transferred two-thirds of their men to the new regiments.

The new regiments were numbered the 18th through the 25th. But, one month after their organization was completed, all eight began training as field artillery. On 1 October 1917 Congress acted to make their conversion to field artillery legal, and on 1 November 1917 the 18th through the 25th Cavalry were redesignated as the 76th through the 83d Field Artillery. Although Congress specified that the units would reorganize as cavalry after the emergency, such action was never taken. Hence, the histories of the former 18th through 25th Cavalry are currently perpetuated in a number of artillery units.

An act of Congress on 18 May 1917 provided for twenty National Army (or temporary) cavalry regiments, which were designated 301st through 320th. Fifteen of them, the 301st through the 315th, were organized in early 1918 at various National Army camps, but in August of that year they, too, were converted to field artillery. Thirty field artillery regiments, the 44th through the 72d, and nine trench mortar batteries, the 15th through the 23d, were organized from them. None of those units served outside the United States and all were demobilized in January-February of 1919. The 316th through the 320th Cavalry were not activated during the war years.

By the time the United States entered World War I, the machine gun, together with improved artillery, barbed wire, and elaborate field fortifications, had produced a stalemate on the European Western Front. The Allies and the Germans, with their opposing armies anchored on the sea in the west and on the mountains in the east, repeatedly used waves of infantrymen and heavy artillery barrages in vain efforts to break the deadlock. Their critical need was for mobility and shock action, both traditional roles of horse cavalry, but static trench warfare and the machine gun had made use of the horse impractical.

Four regiments of U.S. cavalry- the 2d, 3d, 6th, and 15th- nevertheless formed a part of the American Expeditionary Forces, and engaged chiefly in remount duty. That they would have been used otherwise during the latter part

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of the war, had they been available, was implied by General Pershing in 1920. He stated that, once the forces were in the open, cavalry would have been of great value on several occasions, and Allied cavalry trained in American tactics would have been most effective in the pursuit of the enemy northward toward the Meuse.

Since U.S. cavalymen had been trained to fight dismounted as well as mounted, many of them did see action as foot soldiers. Again, as in earlier wars, many individual awards for gallantry were earned by the dismounted troopers who fought in other arms and services.

Only a very small portion of the U.S. cavalry saw any mounted service in France. In late August 1918, just before the St. Mihiel offensive, a provisional squadron was formed from Troops, B, D, F, and H of the 2d Cavalry. Fourteen officers and 404 enlisted men from those troops with convalescent horses furnished from the veterinary hospital moved to old Camp Jeanne d'Arc, near Neufchateau, for training in mounted action. Lt. Col. Oliver P. M. Hazzard commanded the squadron. Among the troop

commanders was Capt. Ernest N. Harmon who, during World War II, was to command the 2d Armored Division and then the XXII Corps.

After about ten days of training, one troop of the Provisional Squadron was detached and marched to Menil-la-Tour, where it reported for courier duty with the 1st, 42d, and 89th Divisions. The remainder of the squadron reported to the 1st Division on the night of 11 September 1918, and by a few minutes past noon of the next day U.S. cavalrymen, mounted, were at Nonsard, about five miles behind the original front line of the enemy. Sent out on reconnaissance duty beyond their capabilities, the cavalrymen met the enemy in considerable force and were routed. Later, in the Meuse-Argonne action, the squadron with three troops maintained liaison between flank divisions and those on the front lines. Among the trenches, which made movement of a whole troop impracticable, small patrols, sometimes riding and sometimes walking, acted as military police and couriers. By mid-October, when withdrawn from the front, the squadron had only 150 mounted effectives, largely because of the evacuation of sick and wounded horses.

After the armistice, Headquarters, Band, and six troops of the 2d Cavalry acted as advance guard for the Army movement into Germany, and afterward were stationed along the Rhine with the American Army of Occupation.

Although few U.S. cavalry regiments went to Europe during World War I, all were well represented there by individual cavalrymen. For example, between May and September 1917, one regiment alone- the new 16th Cavalry- lost most of its original officers by promotion in the National Army; and from May 1917 until November 1918 more than a hundred enlisted members of that regiment received commissions in the National Army. Many of these men saw

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service in France. After the armistice twenty-six of them returned and reenlisted as noncommissioned officers.

Vacancies in cavalry units created by promotion and reassignment were filled by new personnel, and the regiments were moved to the Mexican border, an area well known to the older cavalrymen. Germany's efforts to rekindle trouble between the United States and Mexico were met by the concentration of a cavalry force in the southwest. In December 1917 the 15th Cavalry Division three brigades of three regiments each- was organized in Texas. There were no other cavalry divisions in the Army then, but no explanation for designating this one the 15th has been found. Like the divisions organized during previous emergencies, the life of the 15th was short. Actually, a full division organization was not completed, and it was discontinued in May 1918. The brigade headquarters lasted until July 1919 when they, too, were disbanded.

### *Tanks*

Few recognized during World War I that the means for returning mobility and shock action to combat was already present in a device destined to revolutionize warfare on the ground and in the air. This was the internal combustion engine, which had made possible the development of the tank and eventually would lead to the mechanized forces that were to assume the old roles of horse cavalry and to loosen the grip of the machine gun on the battlefield. With increased firepower and protection, these mechanized forces would, only some twenty years later, become the armor of World War II. When the armored artillery, the armored personnel carrier, the wheeled cargo vehicle, and supporting aviation- all with adequate communications- were added to constitute the combined arms team of the modern armored

division, commanders regained the capability of maneuver in most of the land areas of the world.

In the early stages of World War I, neither the Allies nor the Germans foresaw the ultimate value of the tank. In late 1914 after observing a small American-made caterpillar tractor in France, Lt. Col. Ernest D. Swinton, an English officer, recommended to the British Committee of Imperial Defence that caterpillar tractors be armored and armed for use in combat. Although his proposal was not immediately accepted by the committee, it gained strong support of one of its members, Winston S. Churchill, then First Lord of the Admiralty. The Royal Navy, largely at Churchill's urging, sponsored experiments and tests of the vehicle as a type of "land ship" during 1915, and the tank at last became a reality. In an effort to keep secret the real purpose of the early models when they were being shipped to France, the English labeled them *tanks*- for use as water tanks by Russia. Thus originated the name of tank for the new weapon. The naval background of the tank's development also explains such nautical tank terms as hatch, hull, bow, and ports.

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The first test of the tank in action came when the British, on 15 September 1916, used forty-nine 30-ton Mark I's in the Somme area. The results were encouraging. More spectacular was their success over a year later, when on 20 November 1917 around 400 tanks penetrated almost six miles on a 7-mile front in an attack at Cambrai. This was the first large-scale employment of tanks in combat. Unfortunately, success was not complete because the infantry failed to exploit and secure the tanks' gains. The massed tank attack was proved feasible, nonetheless, and allayed American fears as to the tank's value; it gave renewed impetus to the United States' tank plans, and agreement was soon reached with Great Britain and France for co-ordination of all tank programs.

The British scored another victory the following year, on 8 August 1918, with 600 tanks in the Amiens salient. General Eric von Ludendorff referred to that date as the "Black Day" of the German Army, since for the first time entire German units collapsed.

The French launched their first tank attack on 16 April 1917, seven months after the initial British tank action. Of the 194 tanks used in this unsuccessful French attempt to break through the German lines, the Germans reported that 66 were destroyed. A second French tank attack, on 5 May 1917, met with considerable success, prompting a German declaration that "tanks were able, for the first time, to show their full worth without heavy losses." The most suc-

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cessful French employment of tanks during the war was their use of 350 tanks in the Aisne-Marne offensive, beginning on 18 July 1918.

Numerous mechanical failures and the inability of the British and French to mount any sustained tank drives in the early tank actions had cast doubt on the usefulness of tanks. But tank operations and training methods in the British and French sectors had been studied carefully by United States observers, and their reports and conclusions prompted Maj. Gen. John J. Pershing, Commander in Chief, American Expeditionary Forces (AEF), to request in September 1917 that 600 heavy and 1,200 light tanks be produced in the United States.

The resulting American-produced heavy tank was the 43.5-ton Mark VIII, patterned after a British model. Armed with two 6-pounder and five .30-caliber machine guns, it was operated by an 11-man crew, had a maximum speed of 6.5 miles per hour, and a range of 50 miles. The American-built 6 ½-ton

M1917 light tank was a copy of the French Renault. It had a maximum speed of 5.5 miles per hour and could travel 30 miles on its 30-gallon fuel capacity. The U.S. program was augmented in the summer of 1918 by the development of a 3-ton, 2-man tank, originated by the Ford Motor Company. This third tank to be mass-produced during 1918 was powered by two Ford Model T, 4-cylinder engines, armed with a .30-caliber machine gun, and had a maximum speed of 8 miles per hour.

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During the fall of 1917, General Pershing approved plans for an overseas tank corps, based upon an army to be composed of 20 combat divisions. As originally planned, the tank corps was to consist of a headquarters and 5 heavy and 20 light tank battalions. Later plans increased the heavy battalions to 10. On 22 December 1917 Col. Samuel D. Rockenbach was appointed Chief of the Tank Corps, AEF. Plans developed for this organization called for a general headquarters, 3 tank centers (for training and replacement of personnel), 2 army tank headquarters, and 10 brigades. Assembly of the Tank Corps, with an authorized strength of 14,827, began on 26 January 1918, and Colonel Rockenbach was soon placed on the staff of the Commander in Chief, AEF, as an adviser on all tank matters.

In the organization of the Tank Corps, AEF, all tank units were assigned to the General Headquarters, Tank Corps. For specific combat missions, they were attached to armies or to subordinate elements and reverted to general headquarters control as directed. An army tank headquarters, designed to function with an army headquarters, consisted of a headquarters and a heavy artillery mobile ordnance repair shop.

Tables of organization and equipment (TOE) for other Tank Corps organizations were developed in 1918, although shortages of personnel and equipment for their full use prevented conclusive tests during combat. The tables provided for a light battalion of 72 light tanks and a heavy battalion of 69 heavy tanks. Both types of battalions had three companies of three platoons each and a battalion headquarters. All platoons were equipped with 5 tanks. The tank

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brigade, with a combined total of 225 tanks, consisted of 2 light battalions, a heavy battalion, a repair and salvage company, and a brigade headquarters. Almost identical to the brigade headquarters was the headquarters of a light or a heavy tank center.

In the United States developments were also under way for a tank organization similar to that overseas. The War Department, on 18 February 1918, authorized a Tank Service, National Army, under the Chief of Engineers, and the 65th Engineers was reorganized into tank units. The Tank Service, with an authorized strength of 914 officers and 14,746 men, became a separate branch on 5 March. Col. Ira C. Welborn was named its first director and charged with organizing, arming, equipping, and training tank units. Among Welborn's duties were the supervision of all tank activities in the United States, including procurement of officers and enlisted men, and the establishment and maintenance of tank camps. The primary tank training camp was Camp Colt, Pennsylvania, which was commanded for almost seven months of 1918 by Capt., Maj., and then Lt. Col. Dwight D. Eisenhower. On 22 March 1918 the Tank Service became the Tank Corps. Neither the Tank Service nor the Tank Corps in the United States had any direct command relationship with the Tank Corps, AEF.

Units of the Tank Corps, AEF, and the Tank Corps, National Army, were organized in three separate areas during 1918-in the United States, in England, and in France. Some repetition of numerical designations resulted, and redesignations were required to eliminate the duplications. Tank units of all

types were finally numbered in the 300 series.

The first tank units were organized in February 1918 as elements of the 65th Engineers. The 1st Separate Battalion, Heavy Tank Service, 65th Engineers, and the 1st and 2d Battalions, Light Tank Service, 65th Engineers, were at Camp Upton, New York, while Company D, 2d Battalion, Heavy Tank Service, 65th Engineers, was at Camp Meade, Maryland. These elements were redesignated during the war as separate battalions, numbered in the 300 series. All tank battalions were numbered 301-346, but those from 309 through 325 were not organized.

Four tank brigades were formed. Originally organized as the 1st, 2d, 3d, and 4th Provisional Tank Brigades, they were redesignated in late 1918 as the 304th through the 307th Tank Brigades, respectively.

The tank centers were also in the 300 series- being numbered from 301 through 314, although the 305th through the 308th and the 312th and 313th were never organized. The first tank centers, established overseas in February and March 1918, were initially designated as the 1st Light Tank Center and the 2d Heavy Tank Center. They, too, were redesignated into the 300 series.

There were no National Guard tank units during World War I. However, since the lineage of National Guard units is determined on a geographical basis,

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a tank unit currently in the National Guard may descend from a World War I National Guard unit, or an even earlier organization.

Despite concentrated efforts to organize and equip tank units as soon as possible, by June 1918 only 700 men were in the AEF Tank Corps and about 5,000 in the continental U.S. organization. By late July 1918 the combat tank units overseas were: 2 heavy battalion headquarters, 3 heavy companies, 2 light battalion headquarters, and 6 light companies. In the United States there were: a heavy battalion headquarters, 12 heavy companies, a light battalion headquarters, and 24 light companies. As late as mid-August 1918 no combat tanks, either American- or foreign-made, had been assigned to any unit of either Tank Corps. By the fall of 1918, nevertheless, American tank units, using British and French tanks, were in combat. Three battalions of light tanks fought with the U.S. First Army and a battalion of heavies was with the U.S. 27th and 30th Divisions.

American tank units first entered combat on 12 September 1918 against the St. Mihiel salient with the First Army. They belonged to the 344th and 345th Light Tank Battalions, elements of the 304th Tank Brigade, commanded by Lt. Col. George S. Patton, Jr., under whom they had trained at the tank center in Bourq, France. Forty-five of the 2-man French Renault light tanks, probably the most popular type among Americans, had been issued to each battalion only about two weeks before the action. Weighing a little over 7 tons, the Renault had a maximum speed of 6 miles per hour and was armed with either a 37-mm. gun or a machine gun.

For the attack, initially, the 344th was assigned to the 1st Division and the 345th to the 42d Division, with 16 tanks from the 344th and 25 from the 345th composing the brigade reserve. Muddy conditions, caused by heavy rain the night before the offensive, resulted in a much greater consumption of gasoline than anticipated. Although the mud, lack of gas, and mechanical failure caused many tanks to stall in the German trenches, the attack succeeded and much valuable experience was gained. In most actions tanks supported the infantry, but at times they executed normal cavalry reconnaissance missions.

In early October the tactical situation was ideal for tank employment since the Germans were short of artillery and relying heavily on their machine guns. On the other hand, the U.S. light tank battalions had been in almost continuous action during the Meuse-Argonne Campaign and numerous rear area moves and were too weak to furnish effective support. General Pershing sent the chief of the AEF Tank Corps to Paris with instructions to "give anything in the A.E.F. for 500 tanks," but only forty-eight could be obtained locally.

The third U.S. light tank battalion, the 331st, joined the AEF in the final phase of the war. Located at Varennes, France, during early November 1918, it was also credited with participation in the Meuse-Argonne Campaign.

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In the heavy tank category, the 301st Heavy Tank Battalion trained at the British Tank School at Wareham, England, from April until August 1918. It was to remain with the British Tank Corps until American tanks became available, but when the battalion arrived in France in late August 1918 and could not be supplied with American tanks, it was equipped with 47 British Mark V and Mark V Star tanks and assigned to the U.S. 27th Division. Both the Mark V and the Mark V Star had 8-man crews and a maximum speed of approximately 4 miles per hour. The Mark V Star, weighing 36 or 37 tons, depending upon armament, was about 5 tons heavier than the Mark V. Both were armed with either 2 6-pounder guns or an additional 2 machine guns, which were added to the Mark V's usual 4 machine guns or the Star's usual 5.

The 301st was first committed on 29 September at the Battle of Le Catelet-Bony, in support of a British offensive. For that engagement, its tanks were divided among three U.S. infantry regiments of the 27th Division and the Australian Corps Reserve. Although the attack reached its objective, it was several hours late and considered as unsuccessful. Heavy mist and haze made visibility extremely poor, but the failure was attributed mainly to lack of combined tank and infantry training before the operation and a consequent lack of co-ordination between the two as the attack progressed. Thus, the value of tank-infantry training and co-operation was recognized from the beginning of

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the development of tactical doctrine involving the use of tanks and has continued to be given emphasis.

In the 301st's next action, on 8 October at Brancourt with the 30th Division, tank-infantry cooperation was excellent, and the tanks earned a large share of the credit for the successful advance. The 301st's tanks were again parceled out for the Battle of the Selle on 17 October, this time being split between the 27th and 30th Divisions. By 23 October the battalion could muster only a composite company of twelve tanks to support the British at Marmol Forest, but the attack reached its objective.

By the armistice of 11 November 1918, the AEF was critically short of tanks; no Americanmade tanks were completed in time for use in combat. The new weapon was a very complex item, not only requiring extensive technical training for its crew but a long lead time for production as well.

At the end of the war, the strength of the AEF Tank Corps and the Tank Corps, National Army, had reached a total of 1,090 officers and 14,780 men,

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53 percent being in the United States and the remainder either overseas or en route.

After the war, General von Ludendorff of the German High Command praised the Allied tanks as being a principal factor in Germany's defeat. The Germans had been too late in recognizing the value of tanks to consider them in their own plans. Even if their already hard-pressed industry could have produced tanks in quantity, fuel was in very short supply. Of the total of ninety tanks fielded by the Germans during 1918, seventy-five had been captured from the Allies.

At the war's end, the main role of the tank was considered to be that of close support for the infantry. The U.S. tank units fought so briefly and were so fragmentized during the war, and the number of tanks available to them was so limited, that there was practically no opportunity to develop tactics for the large-scale employment of tanks. Nonetheless, the work of the tanks was sufficiently impressive to imbue at least a few military leaders with the idea that the use of tanks in mass was the most likely principal role of armor in the future.

Highlights of U.S. Army appraisal for the development and use of tanks, developed from combat experience, were: (1) the need for a tank with more power, fewer mechanical failures, heavier armor, longer operating range, and better ventilation; (2) the need for combined training of tanks with other combat arms, especially the infantry; (3) the need for improved means of communication and of methods for determining and maintaining directions; and (4) the need for an improved supply system, especially for gasoline and ammunition.

### *Between the World Wars*

#### *Tanks*

Although the tank of World War I was slow, clumsy, unwieldy, difficult to control, and mechanically unreliable, its value as a combat weapon had been clearly proven. But, despite the lessons of World War I, the combat arms were most reluctant to accept a separate and independent role for armor and continued to struggle among themselves over the proper use of tanks. At the outset, thought of the tank as an auxiliary to and a part of the infantry was the predominant opinion, although a few leaders contended that an independent tank arm should be retained. After World War I came the usual American clamor for demobilization. The resulting sudden decrease in Tank Corps personnel, especially within the United States, was in sharp contrast with the rapid increase in the number of tanks on hand- and full production was just beginning. In mid-1919 the U.S. Army had 863 tanks and after deliveries on outstanding contracts were complete, 1,163. Had the war in Europe continued, there would have been five fully trained and equipped tank brigades ready for

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action in the spring of 1919, one for each army corps. As it turned out, the production for World War I became the mainstay of the Army's tank pool for almost two decades.

In August 1919 the General Headquarters, Tank Corps, AEF, returned to the United States, and its chief, Brig. Gen. Samuel D. Rockenbach, became the new Chief of the Tank Corps, U.S. Army, a position he held until it was eliminated in 1920.

The Tank Corps requirements of the reorganized Regular Army after World War I were set by the General Staff in late 1918 at a general headquarters and 5 tank brigades, based upon an army of 5 corps, each with 4 divisions. As in World War I, the brigade was to consist of 3 battalions, 2 light and 1 heavy,

and a repair and salvage company. Also the organization of elements within the brigade remained essentially the same as those of World War I.

Tables of organization for all units immediately following the war were of two types- one for war, the other for peace. The one for peace called for approximately two-thirds of the personnel and equipment authorized under the war table.

For the light tank regiment, the peacetime table included 162 tanks and 1,266 men. Three battalions were in a regiment, each battalion being further subdivided into three companies and a battalion headquarters and headquarters company. The light tank company within the regiment was almost identical in organization and equipment to the separate tank company of the division. Both had a company headquarters and 3 light tank platoons; each platoon had 5 tanks and an authorized strength of 13 men.

For the heavy tank regiment, the peacetime table authorized 90 tanks and 1,771 men. The heavy tank platoon had 3 tanks and 33 men; otherwise, organization and equipment within the heavy and light regiments were essentially the same.

In addition to the light and heavy categories of American-produced tanks of World War I, a third classification, the medium, began receiving attention in 1919. It was hoped that this in-between type would incorporate the best features of the 6½-ton light and the Mark VIII heavy and would replace both. The meaning of the terms *light*, *medium*, and *heavy* tanks changed between the wars. During World War I and immediately thereafter, the light tank was considered to be up to 10 tons, the medium (produced by the British) was roughly between 10 and 25 tons, and the heavy was over 25 tons. For World War II, increased weights resulted in the light tank being over 20 tons, the medium over 30, and the heavy, developed toward the end of the war, over 60 tons. During the period between the world wars, the weights of the classifications varied generally within these extremes.

The National Defense Act of 1920 attempted, among other things, to settle the tank into its proper place within the Army, based upon World War I

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experiences. Under the act's comprehensive provisions, the Tank Corps was abolished, and tank units were assigned to infantry, becoming known as "Infantry (Tanks)." Moreover, the act's stipulation that "hereafter all tank units shall form a part of the Infantry" left little doubt as to the tank role for the immediate future.

Between 1918 and 1922 an official War Department position on tanks was sought repeatedly by the Chief of Ordnance, the Chief of the Tank Corps, and the latter's successor, the Chief of Infantry. The War Department policy statement, which finally came in April 1922, was a serious blow to tank development. Reflecting prevailing opinion, it stated that the tank's primary mission was "to facilitate the uninterrupted advance of the riflemen in the attack." The War Department considered that two types of tanks, the light and the medium, should fulfill all missions. The light tank was to be truck transportable and not exceed 5 tons gross weight. For the medium, restrictions were even more stringent; its weight was not to exceed 15 tons, so as to bring it within the weight capacity of railroad flatcars, the average existing highway bridge, and, most significantly, available Engineer Corps ponton bridges. Although an experimental 15-ton tank, the M 1924, reached the mock-up stage, this and other attempts to satisfy War Department and infantry specifications proved to be unsatisfactory. In reality it was simply impossible to build a 15-ton vehicle meeting both War Department and infantry requirements.

In 1926 the General Staff reluctantly consented to the development of a 23-ton tank, although it made clear that efforts were to continue toward the production of a satisfactory 15-ton vehicle. The infantry's new branch chief overriding the protests of some of his tankmen who wanted a more heavily armed and armored medium- decided, too, that a light tank, transportable by truck, best met infantry requirements. The net effect of the infantry's preoccupation with light tanks and the limited funds available for tank development in general was to slow the development of heavier vehicles and, ultimately, to contribute to the serious shortage of mediums at the outbreak of World War II.

Extensive tests were also made between the world wars on another type of tank, a model designed and developed by a private manufacturer, J. Walter Christie. The Christie tank embodied the ability to operate both on tracks and on large, solid-rubber-tired bogie wheels. The tracks were removable to permit operation on wheels over moderate terrain. Also featured was a suspension system of independently sprung wheels. The Christie had many advantages, including the amazing ability, by 1929, to attain speeds of 69 miles per hour on wheels and 42 miles per hour on tracks, although at these speeds the tank could not carry full equipment. To the infantry and cavalry the Christie was the best answer to their need for a fast, lightweight tank, and they were enthusiastic about its convertibility. On the other hand, the Ordnance Department, while

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recognizing the usefulness of the Christie, was of the opinion that it was mechanically unreliable and that such dual-purpose equipment generally violated good engineering practice. The controversy over the advantages and drawbacks of Christie tanks raged for more than twenty years, with the convertible principle being abandoned in 1938. But the Christie ideas had great impact upon tank tactics and unit organization in many countries and, finally, upon the U.S. Army as well.

Actually, between the world wars there was much theoretical but little tangible progress in tank production and tank tactics in the United States. Production was limited to a few hand-tooled test models, only thirty-five of which were built between 1920 and 1935. Regarding the use of tanks with infantry, the official doctrine of 1939 largely reiterated that of 1923. It maintained that "As a rule, tanks are employed to assist the advance of infantry foot troops, either preceding or accompanying the infantry assault echelon."

Upon adoption of the National Defense Act of 1920- which created the Army of the United States, to consist of the Regular Army, Organized Reserves, and National Guard- tank units allocated to the Regular Army were based primarily upon assignment of a tank company to each infantry and cavalry division. This meant thirteen separate companies, numbered the 1st through the 13th, but only ten were organized. Also provided were five tank battalions, the 15th through the 19th- although only three were ever activated- and the Headquarters, 1st Tank Group. Most of these units traced their origins to Tank Corps organizations of World War I. In 1929 the five battalions and the group headquarters were used to form the 1st and 2d Tank Regiments, which in 1932 became the 66th Infantry (Light Tanks) and the 67th Infantry (Medium Tanks), respectively. Two new light tank regiments, the 68th and 69th, were constituted in 1933. The 68th was organized in early 1940 by consolidating some of the former divisional tank companies; the 69th was disbanded without being activated. Also in early 1940 the 66th, 67th, and 68th Infantry (Tanks) were used to form the Provisional Tank Brigade at Fort Benning, Georgia. Later the same year when all infantry tank units were transferred to a newly organized Armored Force, the 66th, 67th, and 68th Infantry were redesignated the 66th, 67th, and 68th Armored Regiments, and all were assigned to the 2d Armored Division. A new 69th Armored Regiment was organized in the 1st Armored Division.

Units of the new Organized Reserves of post-World War I were organized exceedingly understrength.

By the outbreak of World War II, most of them had only officer cadres and did not enter active Federal service as organized units. As in the Regular Army, each infantry and cavalry division of the Organized Reserves had its tank company, their designations being 76th through 91st, 94th through 104th, and 461st through 466th. Also organized were the 301st through the 324th Tank Battalions and the headquarters of the 6th through the

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12th Tank Groups. Several of these units were descendants of the former Tank Corps, but the majority had no prior history. Except for the 301st, 306th, and 314th, all of which had been disbanded in 1928, the tank battalions of the Organized Reserves were reorganized in 1929 as elements of the 306th through the 312th Tank Regiments. In 1932 these regiments were redesignated as the 420th through the 426th Infantry (Tanks). The following year another regiment, the 427th, was organized.

Meanwhile, in the National Guard after World War I, twenty-two tank companies were provided initially for its infantry and cavalry divisions. They were numbered as the 22d through the 45th, except that the 25th and the 39th were omitted. There were no other National Guard tank units, although a few tank companies of infantry divisions were used, after being called into Federal service for World War II, to form four tank battalions, the 191st through the 194th.

### *Cavalry*

Between the wars the cavalry was slow in adopting mechanization. A factor bearing on the reluctance was that tanks were legally the responsibility of infantry. Although use of the tank by cavalry, as a supplement to achieve the utmost in mobility, had some support, cavalry clung to the horse as being indispensable to its type missions. Immediately after the war, the tank's slow speed was no minor consideration in the cavalry's reluctance to accept it. A few light mechanized vehicles were being used in cavalry units by the late 1920's, however, and the mechanized cavalry regiment, equipped with combat cars, came into being in the early 1930's. Actually the combat cars were modified infantry tanks, but were called combat cars to distinguish them from the tanks of infantry.

Staunch cavalymen contended that the stalemate on the Western Front in World War I was the exception, not the rule, and that cavalry, with its essential characteristics of mobility and firepower, would have an important place in future warfare. They believed, however, that the very distant reconnaissance missions performed by cavalry in its strategical role would, for the most part, be taken over by the airplane.

After World War I, the AEF Cavalry Board concluded that "the role of cavalry, in general, has changed but little when considering war of movement." Although small units up to squadron size would "still have opportunities for mounted action . . .," the AEF Board continued, "the mounted combat of large bodies of cavalry is probably a thing of the past." The board's recommendation that cavalry units not be assigned as organic elements of infantry divisions, but that they be attached for operations, as needed, was accepted.

The Office of the Chief of Cavalry was established by the 1920 National Defense Act, and Maj. Gen. Willard A. Holbrook was appointed as the first

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chief. The total personnel authorization for cavalry was set at 950 officers and 20,000 enlisted men; its

actual strength on 30 June 1920 was 965 officers and 15,812 men. In numbers of units, cavalry was little affected by the immediate reduction in the Regular Army at the war's end, since the mounted arm already had been fixed at 17 regiments.

In addition to the established regiments, squadrons, and troops, the larger units of cavalry divisions and brigades were provided by the 1920 act. Two cavalry divisions, the 1st and the 2d, were added to the Regular Army, the 1st being active and the 2d inactive. Each division contained two cavalry brigades, and each brigade had two regiments, a machine gun squadron, and a headquarters troop. Other divisional elements were a horse artillery battalion with 75-mm. guns, a mounted engineer battalion, an ambulance company, the division trains, and the special troops (headquarters, signal, ordnance, and veterinary).

The reorganization of the cavalry under the 1920 act took place in 1921. By then, lack of funds and reduced personnel authorization for the Army had cut the mounted arm to less than half of its former strength. Except for a regiment of Philippine Scouts- the 26th Cavalry, which was organized in 1922- the number of cavalry regiments was pared from seventeen to fourteen by inactivation of the 15th, 16th, and 17th. The remaining regiments were reconstructed to consist of a headquarters, a headquarters troop, a service troop (redesignated from the former supply troop), and only six lettered troops. The troops, designated as A through F, were grouped into two squadrons of three troops each. The regimental machine gun troop was eliminated, since its pack animals were believed to reduce the regiment's mobility. Machine gun troops and other surplus elements of the regiment were either redesignated into newly organized units or disbanded. Among those newly organized were machine gun squadrons, separate machine gun troops, training center squadrons, and the headquarters troops of two cavalry divisions and four cavalry brigades. All in all, the mounted arm lost three whole regiments and ninety-eight troops, some of the troops having been in continuous existence for almost a hundred years. By mid-1923 the assigned strength of cavalry had dropped to 721 officers and 8,887 men, which is approximately where it stood until the late 1930's.

The unit organizations effected in 1921 lasted seven years, major changes not coming until February 1928. At that time, lettered troops of the regiments were decreased from six to four. Troops A and B of each regiment formed the 1st Squadron, and E and F formed the 2d Squadron. Also, separate machine gun squadrons and troops were eliminated, and the machine gun troop was returned to the regiment.

This new regimental organization was designed to reduce overhead, increase firepower, and retain mobility. It provided for easy expansion to war strength and retained for the regiment, if required to take the field at peacetime strength, the capability of delivering powerful and flexible firepower. This firepower had been

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increased not only by the return of the machine gun troop to the regiment, but by doubling the machine guns in that troop from four to eight. Reduction in wagons and pack animals in the new regiment was offset by the addition of three 1½-ton trucks and three stripped, modified automobiles, called light crosscountry cars.

Many famous old cavalry units were dangerously near being lost to the Army because of these organizational changes. But the policy of retaining surplus units on the rolls of the Army in an inactive status was established, permitting units to be preserved for future use rather than being disbanded or redesignated. As a result, most former cavalry troops have been restored to their original regiments.

The strength and composition of cavalry regiments of 1928-39 were principally governed by the total

strength of the Army, the number of regiments kept active, and the desire for a troop large enough to be an effective fighting unit, even at peacetime strength. For that period each regiment had an approximate average of 690 men: headquarters troop, 78; band, 28; 4 rifle troops, 119 each; and a machine gun troop, 108. Each rifle troop had a troop headquarters, 3 rifle platoons of 3 squads each, and a machine rifle platoon, also of 3 squads.

The real beginning of the Armored Force was in 1928, twelve years before it was officially established, when Secretary of War Dwight F. Davis directed that a tank force be developed in the Army. Earlier that year he had been much impressed, as an observer of maneuvers in England, by a British Experimental Armored Force. Actually the idea was not new. A small group of dedicated officers in the cavalry and the infantry had been hard at work since World War I on theories for such a force. The continued progress in the design of armor, armament, engines, and vehicles was gradually swinging the trend toward more mechanization, and the military value of the horse declined. Proponents of mechanization and motorization pointed to advances in the motor vehicle industry and to the corresponding decrease in the use of horses and mules. Furthermore, abundant oil resources gave the United States an enviable position of independence in fuel requirements for the machines. Although the horse was not yet claimed to be obsolete, his competition was gaining rapidly, and realistic cavalrymen, sensing possible extinction, looked to at least partial substitution of the faster machines for horses in cavalry units. As late as 1938, on the other hand, the Chief of Cavalry, Maj. Gen. John K. Herr, proclaimed, "We must not be misled to our own detriment to assume that the untried machine can displace the proved and tried horse." He favored a balanced force made up of both horse and mechanized cavalry.

Secretary Davis' 1928 directive for the development of a tank force resulted in the assembly and encampment of an experimental mechanized force at Camp Meade, Maryland, from 1 July to 20 September 1928. The combined arms team consisted of elements furnished by Infantry (including tanks), Cavalry, Field Artillery, the Air Corps, Engineer Corps, Ordnance Depart-

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ment, Chemical Warfare Service, and Medical Corps. An effort to continue the experiment in 1929 was defeated by insufficient funds and obsolete equipment, but the 1928 exercise did bear fruit, for the War Department Mechanization Board, appointed to study results of the experiment, recommended the permanent establishment of a mechanized force.

The Army Chief of Staff, General Charles P. Summerall, was convinced that the tank must be included in the artillery-infantry-machine-gun team, although he had reported in 1928 that the Renault tank had "demonstrated that it was too slow to operate with Cavalry." Just before leaving office in October 1930, General Summerall directed: "Assemble that mechanized force now, station it at Fort Eustis, Virginia. Make it permanent, not temporary."

Within a few weeks the Mechanized Force was organized at Fort Eustis, with Col. Daniel Van Voorhis commanding. Through his leadership in the early development of mechanization, Van Voorhis earned the title of "Grandfather of the Armored Force."

When cavalrymen began to think in terms of a balanced mechanized force in 1931, they, like infantrymen, also preferred the light tank for use in the traditional role of light cavalry. For all practical purposes, therefore, the early 1930's found both the cavalry and the infantry, though internally divided over tactical doctrine, firmly committed to the light tank.

The separate Mechanized Force at Fort Eustis was short-lived, for the War Department, under a new

Army Chief of Staff, General Douglas MacArthur, decided in late 1931 to dissolve the organization. In its place, all arms and services were directed to adopt mechanization and motorization, "as far as is practicable and desirable," and were permitted to conduct research and to experiment as necessary. Cavalry was given the task of developing combat vehicles that would "enhance its power in roles of reconnaissance, counterreconnaissance, flank action, pursuit, and similar operations." One of its regiments was to be equipped exclusively with such vehicles. Infantry was to give attention to machines intended to increase its striking power against strongly held positions. Although General MacArthur further decreed that "no separate corps will be established in the vain hope that through a utilization of machines it can absorb the missions, and duplicate the capabilities of all others," increased emphasis was placed upon mechanization.

Two years later General MacArthur set the stage for the coming complete mechanization of the cavalry, declaring, "The horse has no higher degree of mobility today than he had a thousand years ago. The time has therefore arrived when the Cavalry arm must either replace or assist the horse as a means of transportation, or else pass into the limbo of discarded military formations. But," he went on, "there is no possibility of eliminating the need for certain units capable of performing more distant missions than can be efficiently carried

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out by the mass of the Army. The elements assigned to these tasks will be the cavalry of the future, but manifestly the horse alone will not meet its requirements in transportation."

The organizational structure planned for the new mechanized cavalry regiment in 1932 was similar to the horse regiment. With an authorized strength of 42 officers and 610 enlisted men, the mechanized regiment was divided into a covering squadron, a combat car squadron, a machine gun troop, and a headquarters troop. Like the horse regiment, it had four lettered troops but was equipped with combat vehicles instead of horses. Its covering squadron was divided into an armored car troop and a scout troop, while the combat car squadron had two combat car troops. The mechanized regiment had thirty-five combat cars (light, fast tanks), which were about equally divided among the troops of the combat car squadron and the scout troop of the covering squadron.

Great mobility, armor protection, and firepower were the distinctive characteristics of mechanized cavalry. Its principal role was "in employment on distant missions covering a wide area," but it was not expected to hold objectives for prolonged periods without support of artillery and infantry or horse cavalry.

The cavalry division, in which other arms were combined with cavalry, also underwent organizational changes designed to take advantage of the speed and striking power of modern machines. In the new division three types of units were added- an armored car troop, a tank company, and an air observation squadron. The division retained its 2 horse brigades and had an aggregate war strength of 465 officers and 8,840 men.

Cavalry selected Fort Knox, Kentucky, as its site to develop and test combat vehicles; personnel and equipment from the Fort Eustis force formed the nucleus of the command. In early 1933 the 1st Cavalry arrived from Marfa, Texas, and the process of replacing horses with machines in the regiment began. Thus did the first American mechanized cavalry organization come into being. During the next four years other units, including a battalion of field artillery, a quartermaster company, and another cavalry regiment, the 13th, were moved to Fort Knox and mechanized. The War Department in 1938 modified its 1931 directive for all arms and services to adopt mechanization and motorization. Thereafter,

development of mechanization was to be accomplished by two of the combat arms only- the cavalry and the infantry.

In early 1938 the two cavalry regiments and other Fort Knox units were used to reorganize the 7th Cavalry Brigade, with Brig. Gen. Daniel Van Voorhis in command. Later that year he was succeeded by Col. Adna R. Chaffee. Formerly second-in-command of the Mechanized Force at Fort

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Eustis, Colonel Chaffee was already a well-known pioneer in, and strong advocate of, mechanization. Recognized as the "Father of the Armored Force," he dedicated his career to the development of armor not only through his service at Fort Knox but also on the War Department General Staff.

The shockingly quick success of the German blitzkrieg into Poland in September 1939 profoundly affected military tactics and doctrine around the world, but perhaps nowhere was the impact greater than upon the cavalry of the U.S. Army. Tank enthusiasts at Fort Knox now began to advocate publicly what they had been considering privately- the formation of true armored divisions, including tanks, motorized infantry, and other arms and services.

Although mechanized cavalymen had no initial success in their attempts to form armored divisions, a motorized infantry regiment, the 6th, was added to the Fort Knox brigade for the 1940 Louisiana maneuvers. An improvised armored division, formed with the 7th Cavalry Brigade (Mechanized) and the Provisional Tank Brigade from Fort Benning, proved successful- the mechanized troops, in effect, dominated the maneuvers.

Besides the 7th Cavalry Brigade, composed of the 1st and 13th Cavalry (Mechanized), the Regular Army cavalry in 1940 had 12 regiments, 2 of which were horse-mechanized, and the 26th Cavalry of the Philippine Scouts (Regular Army officers with Filipino enlisted men). In addition, 18 cavalry regiments were in the National Guard and 24 in the Organized Reserves.

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## *World War II*

### *Armored Force*

At the end of the twenty years between World Wars I and II, an Armored Force finally emerged, but it did not evolve easily. Ardent supporters of armor had advocated even more than mechanized regiments or brigades. They urged divisions, at the least, and some recommended mechanized corps and armies. From the beginning of the 7th Cavalry Brigade's organization in the 1930's, almost continuous efforts had been made to expand it into a division. And while the Chiefs of Infantry and Cavalry had generally supported these attempts, both were opposed to the conversion of any of their existing units to accomplish the expansion. To them this would have resulted in the loss of units, as well as the loss of personnel, at the expense of their authorized branch strengths. Actually, the goal of armor advocates was the organization of a mechanized force that would be completely free from the control of other arms.

At the start of World War II Germany's rapid conquest of Poland in September 1939 demonstrated the power and speed of German armor. In the spring of 1940, panzer units of the German war machine were on the move again, this time rolling westward through the Low Countries and France. Also, during the U.S. Army maneuvers of 1939-40, it had been evident to armor enthusiasts that development of

mechanization under cavalry and infantry was not being given enough consideration. The German successes and the Army maneuvers helped armor leaders to convince the War Department of the value of armor and the urgency of establishing similar units in the U.S. Army. On 10 July 1940 the Armored Force was created with Chaffee, promoted now to brigadier general, as its first chief. Since there was no Congressional authorization for a separate armored branch, it was established technically "for purposes of service test."

Authorized 530 officers and 9,329 enlisted men, the new organization was built around the 7th Cavalry Brigade (Mechanized) and the 6th Infantry (Armored) at Fort Knox, and the approximately seven infantry tank battalions in the three infantry (tank) regiments of the Provisional Tank Brigade at Fort Benning. From these units the Armored Force was assembled, and by mid-1942 its assigned strength reached 148,192. Also under command of General Chaffee was the I Armored Corps, activated on 15 July 1940 and consisting of the 1st Armored Division (successor to the 7th Cavalry Brigade) at Fort Knox and the 2d Armored Division (organized from the Provisional Tank Brigade) at Fort Benning. Other elements of the Armored Force were the 70th Tank Battalion at Fort Meade, the Armored Force Board, and an Armored Force School and Replacement Training Center.

Inheriting fewer than 1,000 mostly obsolete tanks and other vehicles, the Armored Force was hampered from the beginning in its efforts to equip its units. One armored division alone, to be fully equipped, required 3,243 vehicles,

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of which 1,140 were of the combat type. To speed manufacture of new vehicles of all types, current designs were placed in mass production, but it was not until 1943 that the equipment shortage began to ease.

As Chief of the Armored Force, General Chaffee, initially functioning directly under the War Department, was given control over all existing tank units in both infantry and cavalry, as well as certain field artillery and service units. Although not technically the head of an arm, he, in effect, ranked equally with the branch chiefs. As they were activated, all armored corps, armored divisions, and other tank units were to be included in the new organization. Soon responsibility for the development of tactics and techniques for all of its units was also added to the Armored Force's functions.

The illness and then the death of General Chaffee in August 1941 deprived the Armored Force of its first chief. He was succeeded on 1 August 1941 by Maj. Gen. Jacob L. Devers, an artilleryman. The third chief, Maj. Gen. Alvan C. Gillem, Jr., an infantryman, took over from General Devers on 11 May 1943. Each of these chiefs made significant contributions to the development of armored vehicles and weapons and to the organization and training of armored units.

On 7 December 1941 the Japanese bombed Pearl Harbor, and the United States entered the war. The establishment of the Army Ground Forces in March 1942 brought several policy changes. In time the chiefs of arms were eliminated, but the Armored Force was retained as an independent command. Armored divisions and corps, on the other hand, were placed under the commanders of combined arms those commanding standard corps and armies. Also, as armored units began more advanced phases of training with larger units of other branches, they were detached from the Armored Force. As units were deployed overseas, they were released from the control of the Armored Force. Hence, as the war progressed, the number of units directly controlled by the Armored Force greatly declined, and its attention became centered upon the training of replacement personnel, development of armor tactics and doctrine, and test and procurement of equipment- all functions requiring close and continuous

coordination with armored units in combat overseas.

The Armored Force was redesignated twice during the war, becoming the Armored Command on 2 July 1943 and the Armored Center on 20 February 1944. These changes in name better described its changing functions as the war continued.

Four armored corps were activated under the Armored Force, based upon the then American tactical doctrine for employment of armored divisions and larger organizations under armored corps and armies. Under this plan two armored divisions and one motorized infantry division were to form an armored corps. But by late 1943 the War Department decided that armored divisions could be employed properly by standard corps, and it directed that the II, III,

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and IV Armored Corps be redesignated as the XVIII, XIX, and XX Corps, respectively. The I Armored Corps had already been inactivated overseas and its personnel used in the organization of Seventh Army headquarters.

The basic element of the Armored Force was the armored division- a complete, self-sufficient, combined arms team, whose components, strength, and equipment varied during the war. The first concept saw the division composed of five principal elements: (1) command, (2) reconnaissance, (3) striking, (4) support, and (5) service. Among these, its prime strength was in the striking force, an armored brigade, bristling with 368 tanks and made up of two light armored regiments, a medium armored regiment, and a field artillery regiment. For reconnaissance, the division had a reconnaissance battalion and an attached aviation observation squadron. The division support element had an armored infantry regiment, a field artillery battalion, and an engineer battalion. In the service element were quartermaster, ordnance, and medical battalions and a signal company.

Armor planners designed the armored division as a powerful striking force to be used in rapid offensive action against vital rear area installations. Those objectives were to be reached by penetrating weak points or enveloping open flanks, not by attacking enemy strongpoints. The division's ability for sustained combat was a most important ingredient. Its main characteristics were high mobility, protected firepower, and shock.

Based primarily upon combat experiences, the armored division as originally planned underwent five separate reorganizations. Only two were of much consequence, the one of 1 March 1942 and the other of 15 September 1943.

The 1942 reorganization left the division with 2 armored regiments (one less than previously), or a total of 6 tank battalions, 2 light and 4 medium. Another major change was the elimination of the armored brigade setup and the addition of two combat command headquarters that became popularly known as Combat Commands "A" and "B." These new type organizations provided great flexibility in that they could be composed of any combination of divisional units for as long as the division commander desired. The reorganized artillery called for three identical battalions and a division artillery commander, whose functions closely paralleled those of the infantry division artillery commander. Tanks in the division totaled 390, an increase of nine, with the proportion of mediums to lights being almost two to one, reversing the 1940 ratio of over two to one in favor of the lights. The aggregate strength of the original 1942 division, including attached chaplain and medical personnel, increased the division from 12,697 to 14,620.

The 1943 reorganization, in effect, eliminated another armored regiment from the division, for it replaced the 2 regiments with 3 tank battalions, thereby matching the division's 3 infantry and 3 artillery battalions. Within the new tank battalion, there was an increase from 3 tank companies to 4, 3 being

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equipped with medium tanks and the fourth with light tanks. In addition to the two combat commands (CCA and CCB) another major headquarters was added to the division, the reserve command (known as CCR or CCC), which was intended for control of the division reserve on the march rather than in combat. The reorganization also changed the armored reconnaissance battalion to a cavalry reconnaissance squadron, a title more in consonance with its cavalry mission. The 1943 division lost about one-third of its tanks, ending up with 263, with the proportion of mediums to lights remaining the same, about two to one. A similar substantial reduction in personnel brought the division strength down to 10,937, or a drop of almost 4,000.

Armored divisions organized under both the 1942 and the 1943 tables of organization participated in combat. The 1st, 2d, and 3d Armored Divisions were in action while under the 1942 tables. The 1st, "Old Ironsides," was later reorganized in Italy under the 1943 tables, but the 2d, "Hell on Wheels," and the 3d, "Spearhead," remained under the 1942 tables throughout the war. All other armored divisions were organized under the 1943 or later tables.

The 1942 organizations were known as "heavy" divisions, while those of 1943 and later were known as "light" divisions. Both types proved to be successful in combat, although each had weaknesses. The heavy division was capable of more sustained action, even though it was very weak in infantry. The light division helped correct the infantry imbalance, but it still needed at least an additional rifle company to form tank-infantry teams on a balanced basis.

In the 1943 division's reserve command, personnel authorizations proved to be inadequate and armored group headquarters and headquarters companies were attached to several divisions to alleviate the deficiency. Not until after the war did new tables of organization and equipment finally rectify this situation.

Near the end of the war the War Department already had under study a proposed structure for the postwar armored division. Recommendations of experienced commanders indicated a trend toward more armored infantry and a total divisional strength of about 15,000, an increase of 4,000. Tank elements appeared headed for little change, although many leaders favored either the light or the heavy type of division. Most commanders agreed that one, perhaps two, tank battalions should be organic to the infantry division. Hence, combat had taught and these proposals would seem to indicate that in the armored division, infantrymen are needed to support tanks, whereas in the infantry division, tanks are needed to support the infantry.

The number of armored divisions increased rapidly from only two in early 1941 to fourteen in late 1942. By the end of the war, sixteen had been activated and all saw service in the war against the European Axis Powers. They were designated as the 1st through the 14th and the 16th and 20th Armored Divisions.

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Each of the several reorganizations of armored divisions during the war period usually resulted in numerous redesignations, including numerical changes, for the organic elements, and involved both the

armored and the armored infantry regiments. The regiments within most divisions were broken up into separate battalions and other regiments were eliminated. The numerical designations of the resulting battalions had no appearance of any sequence or pattern. Separate armored groups were also formed from the headquarters portion of many of the split-up regiments. Only the 2d and 3d Armored Divisions kept their regiments intact, the 2d retained the 41st Armored Infantry and the 66th and 67th Armored Regiments, and the 3d retained the 36th Armored Infantry and the 32d and 33d Armored Regiments.

Although armor enthusiasts at the beginning of the war insisted upon the mass employment doctrine for armored divisions, and even for armored corps and armies, they also foresaw the continued need for close support of infantry by tanks. They suspected, too, that this infantry need would be satisfied by stripping armored divisions of some of their organic tank battalions to form tank-infantry teams. To prevent the weakening of the armored divisions, separate tank battalions, especially designed for attachment to infantry divisions, were organized concurrently with armored divisions.

When the Armored Force was established in 1940, the 70th Tank Battalion was its only separate or nondivisional tank battalion. By early 1941 four additional separate tank battalions, the 191st through the 194th, were organized from eighteen scattered National Guard divisional tank companies that had been inducted into Federal service. The 192d and the 194th went immediately to the Pacific, where they were assigned to the Provisional Tank Group and fought in the early Philippine Islands Campaign.

At first the structure of the separate tank battalion conformed closely to that of the former infantry tank battalion, but it was later revised to permit the separate battalion to be interchangeable with the tank battalion of the armored division. The 1943 tables of organization eliminated the light and medium battalions and called for a single type of tank battalion composed of one light tank company, three medium tank companies, and headquarters and service companies. This distribution gave the battalion a striking force in its medium companies and a reconnoitering, exploiting, and covering force in its light company. The dual capability of the separate battalion and the battalion of the armored division greatly simplified the functions of the Armored Force in training, supply, administrative, and personnel matters.

To help control the separate battalions, tank group headquarters were organized. With as many as five battalions under the group originally, experience soon proved that number to be too large and a maximum of three was set, a figure that generally prevailed for the remainder of the war. The tank group was primarily charged with supervision of training, but it was also used

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for specific combat missions. A few tank groups were later expanded to include armored infantry battalions and became armored groups. Their composition closely resembled that usually found in the combat commands of armored divisions.

Additional Regular Army separate (or nondivisional) tank battalions were constituted in 1941 as the 71st through the 80th Tank Battalions, but were shortly redesignated the 751st through the 760th and activated. Most of the separate battalions that followed during World War II were also numbered in the 700 series. By the end of 1944 a peak of 65 such active tank battalions was reached, which was slightly higher than the total of 54 that were elements of the armored divisions.

### *Tank Design and Production*

The devastating firepower and speed of the U.S. Army's armored divisions of World War II was largely the result of the genius of American industry. When Germany invaded western Europe in 1940, the U.S.

The Army had only 28 new tanks- 18 medium and 10 light- and these were soon to become obsolete, along with some 900 older models on hand. The Army had no heavy tanks and no immediate plans for any. Even more serious than the shortage of tanks was industry's lack of experience in tank manufacture and limited production facilities. Furthermore, the United States was committed to helping supply its allies. By 1942 American tank production had soared to just under 25,000, almost doubling the combined British and German output for that year. And in 1943, the peak tank production year, the total was 29,497. All in all, from 1940 through 1945, U.S. tank production totaled 88,410.

Tank designs of World War II were based upon many complex considerations, but the principal factors were those thought to be best supported by combat experience. Among these, early combat proved that a bigger tank was not necessarily a better tank. The development goal came to be a tank combining all the proven characteristics in proper balance, to which weight and size were only incidentally related. Top priority went to mechanical reliability and firepower. Almost as important were maneuverability, speed, and good flotation (low ground pressure). Armor protection for the crew was perhaps less important, although it remained a highly desirable characteristic. The problem here was that only a slight addition to the thickness of armor plate greatly increased the total weight of the tank, thereby requiring a more powerful and heavier engine. This, in turn, resulted in a larger and heavier transmission and suspension system. All of these pyramiding increases tended to make the tank less maneuverable, slower, and a larger and easier target. Thicker armor plate beyond a certain point, therefore, actually meant less protection for the crew. Determining the point at which the optimum thickness of armor was

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reached, in balance with other factors, presented a challenge that resulted in numerous proposed solutions and much disagreement.

According to Lt. Gen. Lesley J. McNair, Chief of Staff of GHQ, and later Commanding General, Army Ground Forces, the answer to bigger enemy tanks was more powerful guns instead of increased size. And, in his high positions, General McNair understandably exerted much influence upon the development of tanks, as well as antitank guns.

Since emphasis of the using arms was upon light tanks during 1940 and 1941, their production at first was almost two to one over the mediums. But in 1943, as the demand grew for more powerful tanks, the lights fell behind, and by 1945 the number of light tanks produced was less than half the number of mediums.

In early October 1939 the first tank order of the World War II period called for over 300 light (11 ½ tons) M2A4 tanks. The following year a much improved light tank, the M3, known in England as the General Stuart, was adopted. Although very similar to the M2A4, the M3 was 3 ½ tons heavier, mounted a 37-mm. gun, and had a maximum speed of 35 miles per hour. Several design changes resulted in a new model, the M4, but its number was soon changed to the M5 to avoid confusion with the M4 medium tank. The M5's weight was increased to 16 tons and its top speed to 40 miles per hour. With the trend toward heavier tanks and more powerful guns, the M5 was replaced in 1944 by the M24 light tank, mounting a 75-mm. gun and weighing 20 tons.

In the medium tank class, improvements in the M2A1 resulted in a completely redesigned tank, known as the M3 medium. As originally produced, it weighed 31 tons and had a top speed of about 25 miles per hour. A 75-mm. gun was mounted in the right sponson and the 37-mm. gun remained in the turret. As furnished to the British under lend-lease, this first model of the M3 medium was known as the General Lee, which is sometimes confused with the later General Grant. The Grant was essentially the same

vehicle except for its lower silhouette, achieved by removing the cupola from its turret.

A much improved M3 medium was standardized in 1941 as the M4, better known throughout the war by its British designation, the General Sherman. It weighed around 33 tons and had a maximum speed of about 26 miles per hour. Built on the M3 chassis, the M4 mounted a 75-mm. gun that was, for the first time, in a fully rotating turret. By 1943, numerous redesigns of the M4 medium resulted in modified models mounting 76-mm. or 105-mm. guns, but through all of the changes the basic medium of the U.S. Army remained the M4 mounting the 75-mm. gun. Although it was no match for German heavy tanks in firepower and armor protection, the M4 medium, with its superior mechanical reliability and capacity for traversing rough terrain, especially in mountainous areas, was the workhorse of the war. Employed in practically every conceivable way that a tank could be used, it performed the infantry-accom-

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panying role, it operated as light cavalry, it spearheaded armored attacks, it played an antitank role, and it functioned as auxiliary artillery.

Although emphasis had been placed first upon the development of the light and then upon the medium tank during the early 1940's, there were those who favored a heavier tank. They were willing to sacrifice some speed and maneuverability for the additional shock and firepower primarily needed to overcome heavy fortifications in the direct support of infantry attacks. Several variations of a heavy tank were developed, the M6 being standardized in early 1943. Weighing about 63 tons, it mounted a 3-inch high-velocity gun. Test results achieved by the vehicle did not justify its tremendous weight and, also, since medium tanks were adequately proving themselves in combat in North Africa, the War Department decided to provide for only one heavy tank company.

Continued experiments toward the development of a more reliable heavy tank were largely inspired by the appearance in 1943 of German heavy Panther (47-ton) and Tiger (63-ton) tanks. Great technical strides were made not only in more powerful guns, better armor, and more powerful engines, but also in the transmission and suspension mechanisms. Furthermore, the search was continuous for more effective ammunition and less weight in all components. Finally, a successful heavy tank, the M26 or General Pershing, was developed in

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time for a few to be used in Europe late in the war. Mounting a 90-mm. gun, it weighed approximately 46 tons and had a maximum speed of 25 miles per hour. Although their engagements were limited, the new M26 heavies were very popular with the U.S. Army units with which they fought.

There were several other types of World War II tanks that can be classified as special purpose. In organizations generally of battalion size, they were usually modifications or adaptations of standard tanks and were designed for the specific type of missions intimated by their unit designations. They included amphibious (DD, or duplex-drive, and LVT, or landing vehicle, tank), airborne, searchlight, mine exploders, earth movers (tankdozer and "Rhino," or "Hedgerow Buster," very successfully used in hedgerows of Normandy), flamethrowers, and rocket launchers. Also, a tank for battlefield illumination that projected a light beam through a 2-by-24inch slit from a searchlight mounted in the turret instead of a 37-mm. gun. Developed behind a tight curtain of secrecy and known simply as the CDL (canal defense light) tank, it was described as a highpowered searchlight for the defense of the Suez Canal. Its combat use was limited to the Rhine River crossings in early 1945.

## *Tank Destroyers*

A paramount reaction in the United States to the German blitzkrieg in Europe, which appeared to be irresistible in 1940, was the demand for some

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means of stopping German armor. The German successes were adversely affecting morale of combat troops, and there was an urgent need for new, effective weapons to calm their fears and prove the vulnerability of the tank.

The main question was whether the job could be done better by tanks or by guns. The American answer was high-velocity guns that were eventually called tank destroyers, although many leaders still favored tanks. Among the most aggressive proponents of mobile antitank guns were General McNair and Lt. Col. Andrew D. Bruce, the latter becoming the first commander of the Tank Destroyer Center.

Other antitank questions that arose involved whether or not the guns should be self-propelled and the size of their caliber. The answers to these and related questions depended principally upon the tactical doctrine to be adopted for antitank units, which, in time, was to be based upon combat experience.

Following experiments in the maneuvers of 1940, the War Department adopted the doctrine of mass employment of high-velocity guns by fast-moving antitank units against tanks. The doctrine called for a minimum of antitank guns

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to be placed in fixed initial positions and a maximum to be held in mobile reserve. Choosing the motto "Seek, Strike, and Destroy," tank destroyers were to be aggressive in reconnaissance- seeking out the enemy main armored attack formations and to be prepared for them, but not to chase them. To help dispel the passive connotation of their mission, the antitank battalions were redesignated in late 1941 as tank destroyer battalions.

Antitank companies, equipped with towed 37-mm. guns, first appeared in infantry regiments in the fall of 1940 and augmented the infantry division artillery's 37-mm. antitank guns. Later equipped with 57-mm. guns, the antitank company remained in the infantry regiment for the duration of the war. The divisional artillery antitank units were mostly absorbed by the larger antitank battalions organized in 1941.

When antitank units were first formed, many National Guard divisions were already in Federal service. Consequently, several National Guard units or their personnel were used in the formation of these and later tank destroyer organizations.

The Tank Destroyer Center was temporarily established at Fort Meade, Maryland, then moved to the new Camp Hood, Texas, in February 1942. Later that year, having virtually become a new arm, tank destroyer strength reached

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almost 100,000. It had 80 active battalions, with 64 more planned. By early 1943, 106 battalions were active, the maximum for the war, only 13 short of the total number of tank battalions. The numerical

designations of most tank destroyer battalions were in the 600, 700, and 800 series.

By early 1944 a combination of two principal factors resulted in the inactivation of 28 tank destroyer battalions. First, massed armored forces had not been used against American forces during 1943, and thus fewer tank destroyer units were required. Second, divisions in combat had serious strength shortages, and personnel from tank destroyer units were used as replacements. The rapid decrease left only 78 active tank destroyer battalions, and by the end of March 1945 an additional 10 battalions had been inactivated.

Although there was little need for the concentration of tank destroyer battalions during combat, thirteen tank destroyer groups and a tank destroyer brigade saw action in World War II campaigns, but not as complete organizations. The groups were the 1st through the 9th and the 12th, 16th, 20th, and 23d. The brigade was designated as the 1st. Two brigade headquarters had been organized, but the 2d Tank Destroyer Brigade was inactivated in early 1944.

On the question of self-propelled versus towed guns, combat commanders wavered until the decision was finally made in November 1943 that half the battalions would be self-propelled and half would be towed. Generally the towed gun delivered more accurate fire and was easier to conceal, while the self-propelled one was more mobile and more easily positioned for action. The self-propelled gun, like the tank, was often employed in close support of infantry, although the tank destroyer was not designed or intended for an offensive role.

With a strength of a little less than 800 men, the tank destroyer battalion of 1944 was largely self-sufficient and included strong reconnaissance and antiaircraft elements. It had a total of thirty-six 3-inch or 76-mm. guns (towed or self-propelled), which, in addition to performing their primary antitank missions, were frequently used in a general role of supporting artillery. Various other uses included destroying antitank guns, covering withdrawals, helping to clear minefields, and reinforcing artillery fires. In combat, tank destroyer battalions were usually attached to divisions or other separate organizations.

In general, antitank developments confirmed that tanks could be stopped by guns, and even the psychological influence of tank destroyers upon friendly troops was very effective. Tank destroyers had become a quasi-arm, operating independently, and had successfully resisted all attempts to be absorbed by the old arms and the Armored Force. Battlefield experience, however, showed that a superior tank was a better antitank weapon than the very thinly protected tank destroyer and, with the end of the war, tank destroyers went out of existence. Tank destroyer units were either redesignated, inactivated, or disbanded, and many became tank units.

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### *Cavalry*

With the approach of World War II and the creation of the Armored Force in 1940, one of the most perplexing problems confronting the U.S. Army was the form of organization and tactical doctrine for its cavalry. During the years of peace when economy had been the keynote for U.S. military forces, it had been easy to shunt this problem aside; but now, with danger to the free world increasing and partial mobilization already under way, the Army had to face up to how to organize and equip its cavalry.

At the heart of the question, of course, was the military value of the horse. And cavalymen themselves were far from being united, thus making any solution even more difficult. Many cavalymen favored

complete mechanization, others supported a combination of horses and machines, and still a third group continued to prefer only horses. The last Chief of Cavalry, Maj. Gen. John K. Herr, in testimony before a Congressional committee in 1939 maintained that horse cavalry had "stood the acid test of war," whereas the motor elements advocated by some to replace it had not. Pointing to this country's more than 12,000,000 horses and over 4,500,000 mules at that time, as well as its predominant motor industry, he held that the United States was in a most favorable position to develop the best cavalry forces in the world, both mechanized and horse. On the role of cavalry General Herr declared that those "who wish to reduce cavalry to a purely reconnaissance arm, are entirely wrong, unless reconnaissance is the only mission which cavalry can perform." To Herr, reconnaissance was important to cavalry, but was not its primary mission. "While cavalry must fight in carrying out its mission of reconnaissance, pursuit and covering," he reasoned, "it must also fight in cooperation with the other ground arms to further the accomplishment of the main mission." On types of cavalry his view was that, "although in some cavalry missions it may be better to use horse cavalry alone or mechanized cavalry alone, on the whole the best results can be accomplished by using them together."

This horse-mechanized principle had been applied to two cavalry regiments, the 4th and the 6th. In those units large vans were used for transporting horses to keep pace with the mechanical elements. The horses could be unloaded quickly and employed in mounted actions to supplement operations of the mechanized cavalry. With the 4th and 6th Cavalry already partially mechanized and the 1st and 13th Cavalry under the Armored Force, ten horse cavalry regiments remained. Of these, the 5th, 7th, 8th, and 12th were organic elements of the 1st Cavalry Division, and by late 1941 the 2d, 9th, 10th, and 14th were in the 2d Cavalry Division. Only the 3d and 11th Cavalry were nondivisional mounted regiments.

The Office of the Chief of Cavalry was eliminated in March 1942, along with those of the other combat arms chiefs. His functions were transferred to

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the newly formed Army Ground Forces and the trend toward mechanization quickened. Nondivisional regiments and squadrons were completely mechanized in the same manner as were the cavalry components of infantry and armored divisions. Several cavalry regiments were used in forming new armored divisions.

Upon the activation of the 9th and 10th Armored Divisions in 1942, initial War Department directives converted and redesignated the 2d, 3d, 11th, and 14th Cavalry as the 2d, 3d, 11th, and 14th Armored Regiments. After transfer of personnel and equipment to the new organizations was almost complete, the directives were changed to inactivate the old cavalry regiments and to activate the armored ones as newly constituted units. During 1943 all four of the old cavalry regiments were reactivated as mechanized cavalry units. Later, in 1951, the descendants of these 4 armored and 4 cavalry regiments were consolidated and reorganized to form 4 armored cavalry regiments.

All nondivisional mechanized cavalry regiments were broken up in 1943 to form separate groups and squadrons. The reorganization coincided with a new War Department principle governing the employment of mechanized cavalry: the units were "organized, equipped, and trained to perform reconnaissance missions employing infiltration tactics, fire, and maneuver." The directive also specified that the units were to engage in combat only to the extent necessary to accomplish their missions. Except for the cavalry divisions, therefore, the official cavalry mission, in general, was reconnaissance, a doctrine that held for the remainder of the war.

Of the two cavalry divisions active during World War II, only the 1st Cavalry Division fought as a unit.

It fought dismounted in four major campaigns in the Southwest Pacific and performed occupational duties in Japan following the war. The 2d Cavalry Division was partially inactivated in July 1942, its 4th Cavalry Brigade (including the 9th and 10th Cavalry regiments) remaining active. The division was fully reactivated in February 1943, then completely inactivated between February and May 1944 in North Africa, its personnel being transferred to service units.

Neither of the two cavalry divisions took horses overseas, the explanation being that transportation of horses was too costly in ship tonnage and feeding and upkeep too complex for a motorized army. Whether or not this explanation was valid, it was clear that horses were being banished from the last cavalry unit and, for all practical purposes, from the Army.

The 1st Cavalry Division fought as infantry under special tables of organization and equipment that increased its strength to approximately 11,000 men, around 4,000 less than an infantry division; it retained the basic square or 4-regiment, 2-brigade formation of the cavalry division. Special allowances of heavy weapons and other infantry-type equipment were supplied to the 1st Cavalry Division to compensate for its lack of a 155-mm. howitzer field artillery battalion.

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The National Guard, before any of its units were inducted into Federal service during 1940-41, had 4 cavalry divisions, the 21st through the 24th. All 4 were broken up and none entered Federal service, although many of their elements did. Also, conversions and reorganizations of 17 National Guard cavalry regiments before induction resulted in the organization of 7 horse-mechanized cavalry regiments, as well as several field artillery regiments, coast artillery regiments and separate battalions, and an antitank battalion. Thus, after the reshuffling, 7 partially mechanized regiments and a brigade of 2 horse cavalry regiments entered Federal service. The horse-mechanized regiments were the 101st ( New York), 102d ( New Jersey), 104th ( Pennsylvania ) , 106th ( Illinois ) , 107th ( Ohio ) , 113th ( Iowa ) , and the 115th ( Wyoming ) ; the horse brigade was the 56th (Texas), consisting of the 112th and 124th Cavalry (Texas). While in Federal service, all of the horse-mechanized regiments were completely mechanized and split up to form groups and separate squadrons, similarly to those of the Regular Army. The horse regiments, the 112th and 124th, were dismounted, withdrawn from the 56th Cavalry Brigade, and reorganized as infantry with much the same composition as regiments of the 1st Cavalry Division. Finally, in mid-1944, the Headquarters and Headquarters Troop, 56th Cavalry Brigade, became the 56th Reconnaissance Troop, Mechanized.

Seventy-three nondivisional cavalry units were active in the Army during the war. In general, they were squadrons and groups, many of which had been formed by breaking up nondivisional cavalry regiments. Each mechanized cavalry group was composed of a headquarters and headquarters troop and two or more attached mechanized cavalry reconnaissance squadrons. Groups were assigned to armies and further attached to corps, most of the attachments, in practice, being permanent. Corps frequently attached the groups to divisions- usually infantry divisions- for operations only.

Divisional cavalry units included a mechanized cavalry reconnaissance squadron for each light armored division, an armored reconnaissance battalion for each heavy armored division, and a cavalry reconnaissance troop for each infantry division.

The last horse cavalry unit of the Army to fight mounted was the 26th Cavalry regiment of the Philippine Scouts, which, in early 1942 after withdrawal to Bataan, was forced to destroy its horses and fight on foot. The fall of the Philippines did not bring the military use of horses to an end. Although no U.S. unit while overseas was fully organized under tables of organization and equipment providing for

horses, there were several instances of their use by provisionally organized units. For operations in jungles and mountains, horses proved to be especially suitable as pack animals. For example, during a 700-mile march through the jungles of India and Burma, the 5307th Composite Unit (Provisional), a task force under Brig. Gen. Frank D. Merrill and nicknamed

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"Merrill's Marauders," had approximately 340 horses as well as 360 mules. In another action the 3d Infantry Division, while in Sicily, organized the 3d Provisional Reconnaissance Troop, Mounted, which was employed for several months during the invasion of Italy and the subsequent fighting in its mountainous terrain. In September 1943 the troop had 143 horses; 349 mules were also in its attached pack train.

Between mid-1940 and mid-1941 the cavalry strength of the active army more than quadrupled, from slightly under 13,000 to over 53,000. By 31 May 1945 it reached 91,948, its peak strength during the war.

Most of the mechanized cavalry units fought in Europe, where, notwithstanding their prescribed general reconnaissance role, the types of missions assigned and the approximate percentages of their frequency of occurrence were: (1) defensive combat, including defense, delaying action, and holding of key terrain until the arrival of main forces, 33 percent; (2) special operations, including acting as a mobile reserve, providing for security and control of rear areas, and operating as an army information service, 29 percent; (3) security for other arms, including blocking, screening, protecting flanks, maintaining contact between larger units, and filling gaps, 25 percent; (4) offensive combat, including attack, pursuit, and exploitation, 10 percent; and (5) reconnaissance, 3 percent. Hence, purely reconnaissance missions for mechanized cavalry were rare, and defensive missions were common. For offensive, defensive, and security missions, the mechanized cavalry group was normally reinforced by a battalion of field artillery, a battalion of tank destroyers, and a company of combat engineers.

Mechanized cavalry units operated dismounted during combat almost twice as frequently as they did mounted. But this was no surprise to cavalry leaders, whose general mood was that such units in the future should be trained and organized for considerable dismounted action.

A unique role was spectacularly performed by the 6th Cavalry Group, assigned to the Third Army, in Europe. Taking advantage of the power of its communications equipment and the speed of its vehicles, the army commander, Lt. Gen. George S. Patton, Jr., used the group to maintain contact with his far-flung forces, elements of which were often as much as a hundred miles away from his army command post. Patton actually renamed the group the Army Information Service; it became more popularly known as Patton's "Household Cavalry."

Many cavalymen were of the opinion that mechanized cavalry had been either generally improperly employed or inadequately organized for the several types of missions it had been called upon to perform during the war. In fact, a group of combat-experienced senior officers and mechanized unit commanders concluded that "the mission which was assigned to mechanized cavalry, reconnaissance with minimum of fighting, was unsound . . .," and that its

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mission "should be combat." They believed that "the future role of mechanized cavalry should be the traditional cavalry role of a highly mobile, heavily armed and lightly equipped combat force, and that

the capability of mechanized cavalry, particularly that normally operating under the corps, to perform that role, should be exploited."

### *Post-World War II*

Armor, as the ground arm of mobility, emerged from World War II with a lion's share of the credit for the Allied victory. Indeed, armor enthusiasts at that time regarded the tank as being the main weapon of the land army. But demobilization quickly followed the end of hostilities and, in essence, the armor strength was destroyed. By mid-1948 the Regular Army divisions of all types were reduced to ten; the 2d Armored Division remained as the lone division organized as armored until 1951, when the 1st Armored Division was again activated. Furthermore the Armored Center at Fort Knox was inactivated on 30 October 1945, and most of its functions were assumed by the Armored School.

Even after the end of World War II, however, there was unusual need for mechanized organizations in the requirements of the occupational forces in Europe. Highly mobile security forces with flexible organizations and a minimum of personnel were needed, and armor and cavalry units were more readily adaptable to the task than infantry. Consequently, the U.S. Constabulary in Europe absorbed most of the elements of the 1st and 4th Armored Divisions. These units were gradually reorganized and redesignated as constabulary organizations, the U.S. Constabulary becoming fully operational on 1 July 1946.

In addition to its headquarters and special troops, the Constabulary consisted of the 1st, 2d, and 3d Constabulary Brigades and the 1st, 2d, 3d, 4th, 5th, 6th, 10th, 11th, 14th, and 15th Constabulary Regiments. Most regiments had the usual three squadrons. Each regiment, to carry out its peculiar peacetime duties, had a light tank troop, a motorcycle platoon (25 motorcycles), and a horse platoon (30 horses).

By early 1947 the Constabulary strength reached nearly 35,000, but continuing turnover in personnel was one of its major problems. On 24 November 1950, Headquarters and Headquarters Company, U.S. Constabulary, was inactivated; most of its units were assigned to the newly activated Seventh Army. The last of the units, the 2d Constabulary Brigade and the 15th and 24th Constabulary Squadrons, continued to operate until inactivated on 15 December 1952.

Since the Armored Force had been created as a temporary measure for World War II, armor was not a permanent arm to which officers could be assigned. The officers retained their basic branch while serving with armored

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(tank) units. To prevent the loss of identity of armored officers, the War Department began action in early 1947 to assign them to the cavalry. At the same time, announcement was made of expected eventual statutory approval of an armored cavalry arm to replace cavalry. Pending that action, all qualified armored (tank) officers were to be detailed in cavalry, unless they objected. Cavalry officers not qualified in and not desiring to serve with armor could be transferred to or detailed to other arms and services.

As late as August 1949, official publications listed armored cavalry, instead of cavalry, as a branch of the Army. Described as "an arm of mobility, armorprotected firepower, and shock action," armored cavalry was to engage in all types of combat actions in co-ordination with other arms and services. Reconnaissance types of missions were usually to be performed by light armored cavalry units, which

were to avoid sustained offensive or defensive combat.

Use of the term armored cavalry was a compromise between those who wanted the word armor in the new branch name and those who were as reluctant to discard the term cavalry as they had been to part with their horses. To others, especially those who had not served with horse cavalry, armor was a new medium, and that term best described the branch. On the other hand, proponents for the continued use of the term cavalry contended that armor, or whatever it might be called, still was the mounted branch- regardless of its mode of transportation- teaching the same principles of mobility, firepower, and shock action. The combination term, armored cavalry, was not popular with either group, but the matter was finally resolved, at least legally, when Congress, in its Army Organization Act of 1950, designated armor as the new branch name and further provided that it would be "a continuation of the cavalry."

The armored division after World War II was larger and heavier than it had been during the war. Its authorized personnel strength was increased in 1948 from 10,670 to 15,973; its tank strength was increased from 272 to 373, most of the additional tanks being in the medium and heavy classes. The reserve command received additional officers, men, and equipment, placing it on a par with the two combat commands and enabling it to function as a third combat command when needed. Also added to the division were a battalion of heavy tanks, a battalion of heavy artillery, and a battalion of infantry; infantry companies were increase from 3 to 4 in the battalions, boosting the total infantry companies for the division from 9 to 16.

The 1st Cavalry Division, which continued to be the only division bearing the cavalry designation, was reorganized as infantry in 1945, its units retaining their cavalry designations. In the 1949 reorganization, however, only the division and its cavalry regiments survived the change to infantry designations, the squadrons becoming battalions and the troops becoming companies. The 1949

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reorganization deleted one cavalry regiment, leaving the division with three, the 5th, 7th, and 8th; the 12th was inactivated and withdrawn.

Except for the cavalry units in the U.S. Constabulary and those in the 1st Cavalry Division, there were no other active cavalry regiments in the Regular Army until the 3d Armored Cavalry was organized in 1948. Later that year three other armored cavalry regiments, the 2d, 6th, and 14th, were organized, their elements consisting of converted and redesignated units of the U.S. Constabulary.

The armored cavalry regiment of late 1948, with three reconnaissance battalions as its principal elements, had an authorized strength of 2,883 and was equipped with 72 light and 69 medium tanks.

One of the most difficult problems facing the National Guard after World War II was preservation of the historical continuity of its units. While in Federal service during the war, most National Guard units had undergone many redesignations, reorganizations, and inactivations. After the war the types of units allotted to the National Guard often varied considerably from the types inducted during the war. To keep from losing the histories of units traditional to certain geographical areas, the Department of the Army permitted the postwar units to retain the histories of the prewar units. Thus, in most instances, units allotted after the war perpetuated histories of prewar units.

Heading the post-World War II list of National Guard armor and cavalry units were the 49th and 50th Armored Divisions of Texas and New Jersey, respectively. Nondivisional units included 5 armored groups, 3 cavalry groups, 31 tank battalions, and 15 cavalry reconnaissance squadrons. Each of the 25

National Guard infantry divisions had a mechanized cavalry reconnaissance troop and a tank battalion, and each infantry regiment had a tank company. The National Guard had no horse cavalry units.

In the Organized Reserves, cavalry and tank units activated in late 1946 were the 19th Armored Division, the 301st through the 304th Cavalry Groups, the 75th Amphibian Tank Battalion, the 782d Tank Battalion, the 314th and 315th Cavalry Reconnaissance Battalions, and the 83d Reconnaissance Troop. In early 1948 the Organized Reserves became the Organized Reserve Corps, and in 1952 this component became the Army Reserve.

With swift advances during the postwar period in the development of atomic and recoilless weapons, rockets, and guided missiles, the tank appeared to many to be obsolete. Although emphasis upon armor did decline, efforts continued toward development of a tank with greater firepower and armor protection without losing mobility. But costs were increasing sharply. For example, the initial price of equipping an armored division rose from 30 million dollars in 1944 to about 200 million in 1950. A single light tank costing \$27,000 in 1939 increased to about \$225,000 in 1950.

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Because of rising costs and the trend toward atomic weapons and missiles, the modern Army's requirement for tanks was not sufficient to command all the funds for the tank development many advocated. Some progress, however, was made. In late 1948 the M46 Patton was introduced. Named for General Patton, the M46 was a modified version of the M26 of late World War II. Still mounting a 90-mm. gun, but with increased power and speed, the M46 was capable of 30 miles per hour. The Army was also modifying the M24 light tank into the T37 and T41, mounting 76-mm. guns.

### *Korean War*

When North Korea suddenly attacked the Republic of Korea on 25 June 1950, the U.S. Army was weak in tanks, and its units initially entered combat in Korea without them. The 7th, 24th, and 25th Infantry Divisions and the 1st Cavalry Division (organized as infantry), all on occupational duty in Japan, had assigned to them the 77th, 78th, 79th, and 71st Tank Battalions, respectively. But only one company (A) of each battalion had been organized, and those companies had only M24 light tanks. Heavier tanks, it was feared, would damage Japanese roads and bridges.

Although the rugged terrain in Korea had been considered generally unsuitable for tank employment, Russian-made T34's were used with success by the North Koreans during the early days of the war. American tanks were rushed to the scene in support of the United Nations and engaged in their first combat on 10 July. For several weeks they were outnumbered, and it was not until late August that the tank balance in Korea was tipped in favor of the United Nations. By then more than 500 U.S. tanks were in the Pusan Perimeter, outnumbering the enemy's there by over five to one. For the remainder of the war, tank units of battalion size and smaller were in most combat actions.

Tank battalions in the early Korean fighting of July and August 1950 were the 6th, 70th, 72d, 73d, and 89th, averaging 69 tanks each. The 6th was equipped with M46 Pattons; the other battalions were about equally divided between M26 Pershings and M4A3 Shermans. The 64th Tank Battalion entered the war in early November 1950 with the 3d Infantry Division.

No armored divisions were sent to Korea, although six armored divisions, the 1st, 2d, 3d, 5th, 6th, and 7th, were soon active. Actually only two, the 1st and 2d, were organized as armored, the others being principally training organizations, and only the 2d went overseas, going to Germany in 1951.

The armored division strength and organization were little changed by a TOE of late 1952, but its tanks, totaling 343, mounted more powerful guns. One battalion was authorized 69 heavy tanks (T43's, which later became M 103's ) with 120-mm. guns, the heaviest weapon yet carried by an American tank. Weighing approximately sixty tons and carrying a crew of five, the T43

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was the largest and most powerful tank that had been produced by the United States. Three battalions of the division each had 72 mediums (M47's) with 90-mm. guns, and the reconnaissance battalion had 30 light tanks ( T41E1's) mounting 76-mm. guns. The new model light tank was a modified version of the T41, and was christened the "Walker Bulldog" in early 1951 in honor of Lt. Gen. Walton H. Walker, killed in the Korean War. An additional 28 light tanks were dispersed within the division- 3 to each combat command and to the division headquarters company and 2 to each tank and armored infantry battalion.

In mid-1952 a new medium tank, the M48, also named the Patton, was introduced. With an improved fire control system, it was proclaimed to be capable of more first round hits than any other American tank yet built. Weighing 45 to 50 tons and armed with a high-velocity 90-mm. gun, the new medium had a crew of four-one less than its preceding model.

The activation in 1951 of the 11th Armored Cavalry brought the total active regiments of this type to five for the Korean War period, but none

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served in the Far East. The other four active regiments were the 2d, 3d, 6th, and 14th. The primary role of the armored cavalry regiment was described in 1951 as being "to engage in security, light combat, and reconnaissance missions. The regiment is not designed to engage in combat with hostile armor or strongly organized defenses."

Many Army National Guard units went into Federal service during the Korean War. Eight N.G. infantry divisions were called in, and organic to each were a tank battalion and a reconnaissance company. The 40th Infantry Division (California) and 45th (Oklahoma) fought in Korea; the 28th (Pennsylvania) and 43d (Connecticut, Rhode Island, and Vermont) went to Germany; and the 31 st ( Alabama and Mississippi), 37th ( Ohio ) , 44th ( Illinois ) , and 47th ( Minnesota and North Dakota) became training organizations for individual replacements for the Army. Other National Guard units entering Federal service brought N.G. units mobilized to approximately one-fourth of the total number organized and federally recognized.

Early in the war the period of service was set at 21 months; later it was extended to 24 months. In August 1952 when it became obvious that two years would not see the end of the war, Congress-disturbed that many areas of the country had sent most of their Guard units into service and had few at home stations- passed legislation to provide for the organization of corresponding National Guard units. These units would bear the same designations as those in the service, with the addition of "( NGUS )" after their designations. This arrangement permitted the states and territories to organize units, and to assign men returning from duty with a unit in Federal service to its counterpart in the National Guard. Maximum Federal service for Guard units (not personnel) was fixed at five years, and as the units reverted to state or territory control, the corresponding NGUS units were dropped.

Generally the system worked as planned, but in a few instances it did not. The NGUS units in some

states or territories were not organized in the same geographical areas as their counterparts and hence were not historical continuations of them. Other units, upon release from active military service, were not relocated in their former areas. In both instances, significant factors were the continuing changes in Department of the Army mobilization requirements for National Guard units and changes in the organizational structure for Regular Army units that were also applied to the National Guard.

Although the Korean Armistice Agreement of 27 July 1953 ended largescale combat in Korea, military forces were still required in positions of readiness.

### *Post-Korean War*

The decade following the Korean armistice was marked by two major reorganizations of U.S. Army divisions, both of which influenced the structure

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of armor units. First to come was the pentomic plan of 1957-59, then the Reorganization Objective Army Divisions (ROAD) plan of 1962-64. Underlying these reorganizations were developments in nuclear weapons that made wide dispersion, high mobility, and great flexibility- without loss of massed firepower- mandatory characteristics for military forces. Combat areas of future nuclear wars were viewed as much broader and deeper than battlefields of the past, requiring small, self-contained, fast-moving units. Speed was imperative not only in the concentration of forces for attack but also in dispersion for defense. On the other hand, the Army had to retain its ability to fight limited or nonnuclear wars, where the requirements for mobility or dispersion were not as important.

Tests of new division organizational concepts for atomic warfare, begun in early 1955, culminated in late 1956 in the pentomic organization, and by mid-1958 the new scheme had been applied to all armored divisions. Since combat commands already provided much of the flexibility that was sought, little change was made in the basic structure of the armored division. The greatest change was in firepower, the division artillery being given an atomic capability. The division still had its four tank battalions, and all were authorized 90-mm.-gun tanks (one battalion had previously been authorized 120-mm.gun tanks). Armored infantry and field artillery battalions also remained at four each. A small increase in tanks brought the full-strength total to 360- 306 mounting 90-mm. guns and 54 mounting 76-mm's. Strength of the new division stood at 14,617, only 34 fewer than its former number.

From 1951 to 1955 the Regular Army had two active armored divisions- the 1st and the 2d. In 1955 the 3d and 4th were added. Three continued as active divisions for the remainder of the 1953-68 period; the 1st Armored Division was reduced to a single combat command from 1957 to 1962.

By late 1955 the Army National Guard armored divisions had been increased from 2 to 6 by converting 4 infantry divisions- the 27th, 30th (that portion in Tennessee), 40th, and 48th. The North Carolina portion of the 30th Infantry Division became a full infantry division and retained "30th" also as its numerical designation. As of mid-1967, Army National Guard had the following armor units: 6 armored divisions, 2 armored brigades (separate), 7 armored cavalry regiments, an armored cavalry squadron, and 16 separate tank battalions. Also, the 17 infantry divisions of the National Guard had 34 tank battalions and 17 cavalry squadrons.

The second major reorganization of Army divisions, known as ROAD, was completed in 1964. Under this plan the Army was to have four types of divisions- airborne, infantry, armored, and mechanized- the base upon which each was built, being essentially the same. All had their usual types of organic

reconnaissance, artillery, and support units. The main differences came in the maneuver elements- tank and infantry battalions- which varied with missions and other factors.

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factors. All had three brigade headquarters, which, in the armored division, corresponded to its former combat commands. Thus while the organization of all divisions became more flexible, the change in the armored division was less than in other types.

For example, a ROAD armored division with a composition of 6 tank and 5 mechanized infantry battalions would have a full-strength total of 15,966. Since each tank battalion was equipped with 2 light- and 54 medium-gun tanks and each mechanized infantry battalion had 2 light-gun tanks, this combination of maneuver battalions gave an armored division 40 light- and 324 medium-gun tanks, including the 18 light tanks of its armored cavalry squadron.

Concurrent with the division reorganizations, another major change having far-reaching effect upon the organization of most combat-type units was the Combat Arms Regimental System, or CARS. Arrival of the atomic era with its new weapons and tactical doctrine had rendered the regiment, the traditional fighting unit of the Army, obsolete- it was too large.

Even during World War II armored regiments, except those of the 2d and 3d Armored Divisions, were broken up to form separate battalions, and many old cavalry regiments had been dismembered to form new units. With approval of the CARS plan early in 1957, the old cavalry and armored regiments could be revived, at least in name, to continue their regimental histories.

As illustrated in Chart No. 1, the plan provided an average of approximately fifteen battalions that could be organized to perpetuate the lineage and honors of a single regiment. The regimental headquarters was placed under Department of the Army control, and the other regimental elements were used to form separate battalions or squadrons as needed. Within these battalions and squadrons the organic elements were new.

Parent regiments for use under CARS were carefully selected. Except for the 2d, 3d, 6th, 11th, and 14th Armored Cavalry regiments, the 1st through the 17th Cavalry regiments were included. Armor parent regiments were the 32d through the 35th, the 37th, 40th, 63d, 64th, the 66th through the 70th, and the 72d, 73d, 77th, and 81st. A subsequent decision by the Department of the Army that CARS cavalry regiments would contain reconnaissance-type units instead of tank battalions caused the redesignation of three cavalry regiments- the 13th, 15th, and 16th- as the 13th, 15th, and 16th Armor. Not affected by this decision were those elements of the 5th, 7th, and 8th Cavalry, assigned to the 1st Cavalry Division, which remained organized as infantry. When the CARS reorganization was completed, cavalry had 9 regiments and armor had 20. Elements of these parent regiments were organized in both the Regular Army and the Army Reserve. Army National Guard parent regiments were selected from National Guard units.

The 2d, 3d, 6th, 11th, and 14th Armored Cavalry, which were not reorganized under CARS, retained their regimental structure. Four armored cavalry

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Chart: ARMOR OR CAVALRY REGIMENTS  
Under Combat Arms Regimental System

~~The number of organic elements vary in number and designations~~

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regiments remained active in the Regular Army, the 6th being inactivated in May 1961 and reactivated in March 1967.

Under the 1963 reorganization of the armored cavalry regiment, its organic elements reverted to the traditional cavalry designations of squadrons and troops and an aviation company was added. There was little change in the personnel or tank totals for the regiment. Under the 1965 tables, the regiment's full strength rose to 3,349, an increase of 550, and an air cavalry troop replaced the aviation company. The 1965 regiment had 48 helicopters, while its tanks numbered 132, an increase of 10.

In an era abundant with new weapons and organizations for the modern Army, yet another new military concept dawned in the mid-1950's when air vehicles were included in cavalry units. As part of a training maneuver, Operation SAGEBRUSH, during the winter of 1955-56, tests were made of an organization, called "Sky Cav," that had light tanks, reinforced infantry, and helicopters. Among its special equipment were electronic, photographic, and other devices for detecting an enemy at night as well as during the day. Initially the idea stemmed from a broadening of the term *communications* to cover "not only the transmission of information within Army units but also the acquisition and relay of combat intelligence on enemy activities, including observation and reconnaissance." It was in the nature of this reconnaissance phase of communications that "Sky Cav," combining both air and ground elements in the same unit, was born. First to be authorized a unit of this type was the airborne division, its airborne reconnaissance troop of 1956 being authorized 12 helicopters- 10 light cargo and 2 observation. In 1957, with the advent of CARS, Troop B, 17th Cavalry, was organized in the 101st Airborne Division and was soon followed by Troop A, 17th Cavalry, in the 82d Airborne Division.

By late 1957 the feasibility of armed helicopters had been accepted by the Department of the Army, and a third dimension was added to the Army battlefield. In September 1959 a provisional unit, called an aerial reconnaissance and security troop, was organized for test purposes within the 2d Infantry Division. It was equipped with 27 helicopters, 17 of which were armed.

When the divisions were reorganized under ROAD, the 1963 tables of organization and equipment provided for an air cavalry troop in the armored cavalry squadron in all types of divisions. The mission of the air cavalry troop was described as being the extension, by aerial means, of the squadron's reconnaissance and security capabilities. The troop's principal elements were an aero scout platoon, an aero rifle platoon, a service platoon, a flight operations section, and an aero weapons section. At full strength, it was equipped with 26 helicopters. In the airborne division, the air cavalry troop had greater firepower and a few more men.

When the 120-mm.-gun tank was eliminated in late 1955, more emphasis had been placed upon the medium-gun tank as the Army's main battle tank.

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By mid-1959 the first of the new M60 series, in the medium tank class, was placed in production. Mounting a 105-mm. gun and having a diesel engine, the M60 had more firepower and greater operational range than its predecessor, the M48. It also had improved crew protection and slightly less over-all weight.

The development of an entirely new weapons system, known as the Shillelagh, to provide a direct fire, surface-to-surface, guided missile that could be vehicle mounted, was hailed in 1961 as the initiation of a program to produce a "radical, new main battle tank." Four years later the Shillelagh system was installed on a revolutionary new tank, the XM551 General Sheridan, and for the first time a guided missile became part of a combat vehicle's main armament. Its 152-mm.-gun launcher had the dual capability of firing conventional rounds and launching missiles; the conventional ammunition represented another first with its fully combustible cartridge case. Also, with aluminum armor, the new tank weighed only about 16.5 tons combat loaded and had a maximum speed of over 40 miles per hour. The General Sheridan not only had greater firepower and ground mobility than any other current U.S. Army tank but also had both amphibious and airdrop capabilities. Moreover, its Shillelagh missile system was

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adaptable for installation on existing tanks in the M60 series. Changes in tactics and doctrine were in process to keep pace with the combat potential of the remarkable new tank and weapons system. Despite these giant strides in the development of armor vehicles and weapons, a program for yet another new main battle tank for the 1970 Army was already under way in a co-operative effort of the United States and West Germany. After three years of development, the first prototype of this joint undertaking- the MBT-70, described as the most advanced military tracklaying combat vehicle in existence- was unveiled in October 1967.

During the summer of 1965 the 1st Cavalry Division was reorganized as still another type of division, called airmobile, and was dispatched to the Republic of Vietnam when the U.S. Army began deploying major combat forces to help that country in its struggle for independence. The airmobile principle emphasized the use of Army aircraft to increase the division's battlefield mobility.

The airmobile scheme appears to have an even more far-reaching potential than this divisional concept- that of providing the long-sought capability of

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vertical envelopment by armor. Almost continuous experiments during World War II and since have still not resulted in a successful airborne tank. So far, a tank light enough to be airborne has not been rugged enough for survival in modern warfare. But progress in weight reducing- such as aluminum armor and in air transportability- such as the air supertransport- is rapidly narrowing the gap separating armor and airborne, and another major breakthrough could be in the offing.

The Army's arm of mobility spans nearly all of the 200 years of U.S. Army history. From the horse cavalry of the American Revolution to the armor and air cavalry of the Vietnam conflict, continuous improvements have been made in organization and techniques to take advantage of the constant advances in weaponry and equipment.

A few modern cavalry units can trace their lineages as far back as 1833, but the cavalry as an arm did not come into real prominence in the U.S. Army until the Civil War. Although some units existed from the American Revolution through the War of 1812, there were no organized cavalry units at all from 1815 to 1833. Then, as the country moved westward, horse cavalry in the Indian Wars-both before and after the Civil War-indelibly etched its place in U.S. Army history.

After the coming of the internal combustion engine in the early 1900's, warfare entered upon a new

phase during World War I. Tanks emerged and horses were used little. Between World Wars I and II, both tanks (as a part of infantry) and cavalry continued. Cavalry gradually became partially mechanized, some of its mechanized elements joining with tanks to form the Armored Force for World War II. The remaining cavalry units were either mechanized or dismounted before entering combat. Following World War II, after much controversy, the mechanized cavalry and armored units were finally welded together in 1950 into a single armor branch. Now, with airmobile units becoming prominent, another transition may be in the making. First, the mounted arm had the horse, next the tank, and then the helicopter as its means of mobility. Currently airborne armored units are being seriously discussed, and the types of future organizations and their tactics appear to be limitless. The only reasonable prediction that can be made is that change and progress will continue. With that background, no conclusion for this narrative has more appeal than a quotation from General Chaffee, made at the start of World War II, that rings as true today as it did then.

It is often said, and it may be true in the abstract, that the principles of war do not change. It is, nevertheless, absolutely true that methods do change and are constantly changing. We may study the great captains of the past to learn of their principles and, above all, of their character, but do not let us be tied too much to their methods. For methods change with every change of armament and equipment.

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