

Fort Knox: Birthplace of Today's

by Dr. Robert S. Cameron

The U.S. Army Armor Center and School are preparing to relocate to Fort Benning, Georgia, in accordance with the recommendations of the 2005 Base Realignment and Closure (BRAC) Commission. This move will end a nearly 80-year association between mounted maneuver developments and Fort Knox. During this period, activities on the post shaped and influenced the branch's nature and determined its unique evolutionary path. When the realignment to Georgia is complete, armor will have left behind its Kentucky roots to begin a new chapter in its development. Although tanks have been associated with Fort Benning since 1919, armor's origins lie at Fort Knox.

The Tank Corps constituted the Army's first tank force. Established in 1917, after the nation entered World War I, its purpose lay in the organization and preparation of American tank units to support operations on the Western Front in France, where trench warfare predominated. When the war ended in 1918, the

Tank Corps included 12,000 soldiers deployed overseas with the American Expeditionary Forces and more than 8,000 in stateside training camps. Moreover, several tank units had acquired combat experience during the American-led offensives at St. Mihiel, the Meuse-Argonne, and during combined operations with the British army. In every case, tanks were employed to breach enemy fortified lines.¹

Despite the Tank Corps' battlefield success and growth, it did not become the foundation for a permanent branch. Postwar demobilization reduced its strength to less than 3,000 soldiers within a year.² The National Defense Act of 1920 concluded a force structure redesign effort that defined the Army throughout the interwar era. During this process, Tank Corps leaders failed to articulate a mission for tanks other than infantry support. Consequently, the national defense act abolished the Tank Corps and



Armor Branch

transferred exclusive responsibility for further tank development to the infantry.³

As an infantry support weapon, the tank's role lay in facilitating the advance of the rifleman. To ensure their widespread availability, tanks were distributed in companies assigned to infantry divisions. The Infantry School at Fort Benning, Georgia, and the Tank School at Camp George G. Meade, Maryland, maintained larger concentrations for demonstration and instruction purposes. The Tank School provided doctrine and training guidance, which generally focused on small unit tank-infantry coordination. During tactical exercises, tanks ruptured enemy lines and accompanied advancing riflemen. Often, these training events replicated attacks on fortified lines reminiscent of World War I. Coordination occurred via detailed planning, phase lines, common terrain objectives, and control of the tanks by the commanders of supported units.⁴

Doctrine effectively tethered the tank to the riflemen and discouraged independent operations. Tanks were not expected to shape the battlespace, instead remaining in close proximity to their supported infantry. This close association became more pronounced after 1932, when the Tank School relocated to Fort Benning and became part of the Infantry School. Tank programs of instruction shortened to permit all tank students to first attend training in the fundamentals of infantry operations.⁵ A close relationship between tanks and infantry on and off the battlefield resulted, which in turn established an expertise in tank-infantry operations at the small-unit level.

The narrow role envisioned for tanks encouraged simple tactical organizations. They did not, for example, include reconnaissance, artillery, and engineering assets. Maintenance support proved minimal, since tanks were to operate near parent formations and rely on the latter's service organizations.⁶ Some infan-





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try officers did recommend larger, combined-arms tank units, but their proposals contradicted the tank's support weapon status and required funding beyond the limited appropriations available.⁷

Consequently, infantry tank development remained limited in scope. Tanks remained tied to the advance of riflemen, ensuring them access to armored support. Tank units remained largely collections of tanks, configured for their singular role on the battlefield.⁸ Tactical innovation also remained constrained by understrengthened units and forced reliance on antiquated tanks that remained in the Army's inventory until gradually replaced on the eve of World War II.⁹

In 1938, infantry tank units underwent reorganization. Divisional tank companies disappeared, replaced by battalions and regiments assigned to a general headquarters pool for attachment to infantry formations as necessary. This change undermined the teamwork developed by tanks and infantry units of the same division routinely training together. Although larger tank organizations were expected to have a greater effect on the battlefield, War Department guidance proved confusing and contradictory.¹⁰ In 1939, the Tank School developed a new manual to govern tank operations that reflected organizational change, more flexible tactics, and a growing interest in radio communications. Yet, despite its training value, the manual remained tentative, awaiting War Department publication approval.¹¹

By 1940, the infantry tank force lay in a state of flux. Configured largely for infantry support missions, the tank force lacked the means for independent operations, and did not share a close relationship with the infantry divisions it would be called on to support during combat. Doctrine and training remained torn between existing principles of employment that the Tank School sought to change and the modernizing ideas incorporated in the new, yet unpublished, manual.

Today's armor organizations are characterized by their lethality, agility, and versatility. They constitute a decisive influence on the battlefield, and indeed, are intended to shape the battlespace at the enemy's expense. Armored formations possess the ability to influence decisively entire campaigns, as demonstrated

in Operation Desert Storm and more recently in Operation Iraqi Freedom. Current operations in Iraq demonstrate the importance of direct support to the rifleman by tank platoons and even sections, but the heritage of infantry support constitutes only one part of armor's capability. Where, then, does the branch's emphasis on organizational flexibility, decentralized command and control, high operational tempo, and maneuver originate?

In 1928, Secretary of War Dwight F. Davis directed the establishment of the Experimental Mechanized Force at Camp George G. Meade. His action reflected a growing sense within the Army that the tank's value transcended infantry support. It also constituted his reaction to British military maneuvers that included large numbers of tanks employed in a variety of tactical roles. The Experimental Mechanized Force served as an organizational test bed to determine functions other than infantry support for a mechanized unit.¹²

This unit disbanded after only six weeks, but its existence spurred further experimentation. In 1930, Congress authorized

creating the Mechanized Force at Fort Eustis, Virginia, to study mechanized tactics, organization, and materiel. The new unit soon focused on the employment of tanks in cavalry roles, a trend encouraged by its commander and executive officer, Colonel Daniel Van Voorhis and Major Adna R. Chaffee Jr., both cavalry officers.¹³ Previously, Chaffee participated in analysis of the Experimental Mechanized Force and recommended a large-scale increase in the Army's mechanization efforts.¹⁴ However, the Mechanized Force disbanded in 1931. With the economic effects of the Great Depression worsening, the cost of the Mechanized Force became untenable. Moreover, the cavalry nature of its activities suggested alignment with the mounted branch.¹⁵

Therefore, in 1931, the Army adopted a new mechanization policy to broaden mechanized development beyond the infantry. Implementation of this policy resulted in transforming the 1st Cavalry Regiment into the 1st Cavalry Regiment (Mechanized), partially through incorporation of assets from the now-defunct Mechanized Force. Van Voorhis and Chaffee provided leadership continuity by assuming the roles of commander and executive officer, respectively, in the new mechanized unit. Since tanks could not be assigned to cavalry organizations without violating the National Defense Act of 1920, legal conformance was obtained by redesignating all such vehicles as combat cars.¹⁶

Camp Knox, Kentucky, became the new headquarters of the mechanized cavalry. Centrally located, it possessed easy access via road and rail transport. Encompassing 33,000 acres, the installation constituted one of the largest in the country, possessing firing ranges, ample maneuver space, and varied terrain. Intended as an artillery training center in World War I, the need for such a facility ended with the war, leaving Camp Knox an empty, largely undeveloped installation. It suffered from disuse for much of the 1920s.¹⁷

The arrival of the entire 1st Cavalry Regiment (Mechanized) in 1933 changed its status — the installation became a permanent post, signified by its renaming as Fort Knox. New construction began to provide garage and training facilities. Initially, limited funding and drainage problems interfered with building, but conscripts from local prisons provided much of the necessary

labor. The 1st Cavalry, however, found little time to settle or focus on its primary function as a mechanized cavalry test bed.¹⁸

Creating the Civilian Conservation Corps (CCC) and the Army's oversight of this initiative resulted in a major diversion of military assets from training activities. The CCC was a federal program intended to offset unemployment during the Great Depression by providing jobs for males between the ages of 18 and 25 in public works projects such as landscaping, reforestation, and infrastructure development. Army responsibilities included the management and operation of work camps throughout the country.¹⁹ The 1st Cavalry alone became responsible for 144 such camps in Kentucky and its surrounding states. Its soldiers managed the camps, provided logistics support, maintained connecting roads, provided vehicular support, and directed the actions of the work gangs.²⁰

These activities reduced the regiment's readiness and limited training to platoon-size exercises. However, the nature of the CCC work provided invaluable experience in the coordination and operation of dispersed assets. Working far from major road nets and towns required the establishment of communications networks based on radios and couriers. Collectively, the CCC experience instilled an understanding of command, control, communications, and logistics — skills that directly benefited mechanized cavalry development.²¹

Between 1933 and 1939, Fort Knox became a new center of gravity for Army mechanization. In this period, the mechanized cavalry evolved from an experimental force that had little doctrinal guidance to a combat organization that was governed by unique organizational and doctrinal principles, complemented by a revolutionary command and control process. It grew from a single regiment into the 7th Cavalry Brigade (Mechanized) through the addition of the 13th Cavalry Regiment (Mechanized), the attachment of the 68th Field Artillery Regiment, and the expansion of the brigade headquarters. The brigade constituted the only combined-arms unit in the Army. In addition to mechanized cavalry development, its responsibilities also included the integration of fire support techniques and mechanized operations.²²

In the 1930s, cavalry missions included reconnaissance, attack, defend, delay, pursuit, exploitation, security, and the conduct of raids.²³ To perform all of these activities and transition among them, the mechanized cavalry required organizational flexibility. Little guidance, however, existed for the design of a vehicle-based force to perform this mission set. The Army traditionally favored rigid organizations separated by tactical function. Similarly, Cavalry School guidance included the cautionary note: "Aside from an armored car troop, the cavalry service has not had experience in the development of mechanization in our army."²⁴

The mechanized cavalry developed a concept of operations from horse cavalry doctrine, which directed mounted units to operate in small groups, dispersed over a broad frontage. This dispersion ensured survival on a battlefield dominated by artillery, machine guns, and aircraft. In the mechanized cavalry regiment, replacing horses with vehicles increased the extent of this dispersion. Moreover, the principal combat power of the mechanized cavalry regiment lay in its combat cars. Scattering them



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across the battlespace in small numbers increased their vulnerability. Therefore, each group of combat cars received a small attachment of cavalry troopers and mortars, transported in scout cars. The mortars provided fire support, while the troopers provided force protection for the combat cars and secured objectives once taken.²⁵

In effect, the mechanized cavalry regiment intended to operate as a collection of small, combined-arms teams. To facilitate the regiment's breakdown into these tactical groupings, its headquarters included detachable command cells. Once operations



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began, these cells assisted in the direction and coordination of the subordinate teams' activities. They extended the regimental commander's span of control, served as information conduits, and helped sustain operational tempo.²⁶

The unique nature of the headquarters organization, however, did not resolve all of the command challenges posed by multiple fast-moving teams, moving independently toward separate objectives. Effective command and control required a reliable communications network that could rapidly transmit information and operate over long distances. The mechanized cavalry sought a solution through innovative application of the most advanced information technology of the day — the radio.

In the 1930s, the Army considered the radio too prone to jamming and interception to be of much value on the battlefield. Mandatory security measures further eroded the radio's utility by slowing the rate of information transfer and encouraging greater reliance on wire and couriers. At Fort Knox, the mechanized cavalry sought a high operational tempo that permitted actions inside the enemy's decision cycle. It could not do so with a rate of advance tied to the speed of laying wire. Therefore, it dispensed with Army security requirements and embraced short, cryptic messages transmitted in the clear to accelerate information transfer.²⁷

The mechanized cavalry intended to offset the danger posed by intercepted message traffic through a faster pace of operations enabled by unfettered radio use. It also sought to reduce the quantity of information subject to interception. Before each operation began, team leaders were briefed on their mission and its relation to the regimental objective. Subsequent radio communications focused on mission changes and situation updates. Even if intercepted, the fragmentary nature of such messages complicated efforts by enemy intelligence to comprehend their significance without the context provided by the pre-mission briefing.²⁸

Radio nets constituted the foundation of the regiment's communications architecture. Each net was associated with a particular frequency and tactical function. The flow of information was

controlled and monitored to ensure critical information reached the appropriate command and to prevent subordinate commanders from being overloaded with extraneous information. The net configuration also accommodated changes in tactical teams and regimental attachments. This adaptability paralleled the unit's organizational flexibility.²⁹

The battle command techniques and communications structure developed by the mechanized cavalry at Fort Knox proved revolutionary. The effort to maximize the radio's communications value led to the emergence of mission-type and fragmentary orders. When combined with radio communications, this command style accelerated tactical decisionmaking and made possible the decentralized control of multiple fast-moving columns without sacrificing operational tempo. This development marked a revolution in command and control that would not become widespread in the Army until World War II. A similar result — albeit on a larger and more sophisticated level — inspired the Army's Force XXI initiative of the 1990s and more recent development of a common operational picture and net-centric operations.

The revolutionary principles established by the 7th Cavalry Brigade (Mechanized) at Fort Knox were tested and applied during maneuvers and field exercises in the 1930s. These events demonstrated the mechanized cavalry's ability to respond rapidly to tactical developments. Aggressive reconnaissance and extensive radio use helped commanders identify enemy positions and maneuver to either eliminate or bypass the positions. During First Army maneuvers in August 1939, the 7th Cavalry Brigade (Mechanized) enveloped the opposing force before overrunning its rear area elements. It decisively impacted operations, disrupted resistance to friendly forces, and lay poised for further action when the maneuvers ended.³⁰

Army leaders remained skeptical of the mechanized cavalry's ability to achieve similar success in an actual combat environment. The German invasion of Poland within days of the maneuvers' conclusion did much to end this uncertainty. On a much larger scale, combined arms panzer divisions and corps applied tactics similar to those demonstrated by the mechanized cavalry to conquer a nation in four weeks.

German operations validated the concepts developed at Fort Knox and fueled interest in a mechanized division. In May 1940, the Army conducted Third Army maneuvers in Louisiana. Participants included the 7th Cavalry Brigade (Mechanized) and nearly every tank unit in the Regular Army's inventory. Operations sought to determine the viability of creating mechanized divisions in the field on an as-needed basis. The maneuvers, however, demonstrated the need to create permanent formations whose components routinely trained together. The maneuver experience also generated a consensus to consolidate mechanized development.³¹

Abroad, the Germans invaded France and forced its surrender in a six-week campaign. Once again, panzer divisions and corps spearheaded the German success. In response to the Third Army maneuvers and France's defeat, the U.S. Army established the Armored Force on 10 July 1940. The new organization became responsible for crafting an American equivalent



7th Cavalry Brigade at U.S. Military Academy, 1939

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to the panzer division and developing related training programs, doctrine, and materiel. It replaced the separate development efforts of the infantry tank force and the mechanized cavalry. The 7th Cavalry Brigade (Mechanized) and active infantry tank units were reorganized into the 1st and 2d Armored Divisions and the 70th Tank Battalion. Considered a service test, the Armored Force possessed the status of an experimental organization rather than a permanently constituted branch of service.³²

Fort Knox became the headquarters location for the Armored Force, underscoring the post's association with mechanized development. The post's selection also symbolized an acceptance of the principles of mounted operations developed in the preceding decade by the mechanized cavalry. In fact, planning for the new organization anticipated the leading influence to be played by mechanized cavalry ideas and leadership. This linkage became more pronounced with the appointment of Major General Adna R. Chaffee Jr. as the first chief of the Armored Force. He had been closely associated with mechanized development since the days of the Experimental Mechanized Force and subsequently rose to command the 7th Cavalry Brigade (Mechanized).³³

Initially, fielding new formations dominated the focus of the Armored Force. Fourteen armored divisions activated between July 1940 and November 1942, followed by two more in 1943.³⁴ This large-scale expansion mandated the rapid generation of training programs, doctrine, and training facilities. Large-scale construction and expansion occurred at Fort Knox, as the post worked to accommodate not only the newly stationed 1st Armored Division, but also I Armored Corps Headquarters, the Armored Force School, the Armored Force Replacement Training Center, and the Armored Force Board.³⁵

The armored division incorporated the organizational flexibility of the mechanized cavalry regiment on a larger scale. It func-

tioned as a collection of combined-arms teams, or task forces. Each task force included a mix of tanks, infantry, reconnaissance, and artillery. Several task forces operated under the control of a combat command, a headquarters that reported directly to the division commander, who assigned divisional assets to each combat command, based on the division's mission. The combat command then fashioned task forces from assets provided. Hence, the division dispensed with the traditional, rigid brigade and regimental command structure.³⁶

The combat commands provided the means to track multiple fast-moving task forces that could react quickly to tactical developments. In general terms, the armored division had evolved into a collection of combined-arms teams that continuously redistributed its resources to capitalize on task force success. It also leveraged the command techniques and radio reliance pioneered by the 7th Cavalry Brigade (Mechanized).

A strong link emerged between the new armored divisions and Fort Knox. All armored doctrine, training guidance, personnel appointments, materiel requirements, and tables of organization and equipment emanated from the post. New soldiers and replacements also trained at Fort Knox before joining their units. Through its central influence, the Armored Force sought to ensure uniformity in training, doctrine, and adherence to common standards. The direct influence of Fort Knox on armored organizations diminished during World War II, especially after their deployment overseas. However, the Armored Force School remained a nexus for the dissemination of doctrinal updates and combat lessons pertinent to mounted operations.

The Armored Force also inherited responsibility for infantry support, a role previously borne by the infantry. Separate tank battalions, beginning with the 70th Tank Battalion and later incorporating National Guard armored units, were assigned to a general headquarters pool for temporary attachment to infantry

divisions as needed. While the armored divisions were expected to wield a decisive influence through independent operations, the separate tank battalions were intended to operate closely with rifle units.

Separate tank battalion development, however, suffered from several problems. From 1940 to 1942, lack of attention constituted the most pressing issue. In this period, the Armored Force focused its energies on fielding armored divisions, largely to the exclusion of the separate battalions, which lacked uniform doctrine, materiel, and training standards. Worse, the tank battalions initially retained their prewar organization with its absence of reconnaissance and support elements. After observing several tank battalions during maneuvers, one armored officer came to the realization that “the G.H.Q. tank battalions without reconnaissance, fire support, and adequate radios are nothing more than a herd of elephants, and blind at that!”³⁷

Major General Jacob L. Devers, who succeeded Chaffee as chief of the Armored Force, acknowledged this problem, noting “the tank battalions are now in the category of lost children and we must take prompt action to bring them into the fold and be in closer touch with their needs and problems.” Subsequent improvements included reorganizing separate tank battalions to make them identical to armor battalions in armored divisions, including the provision of reconnaissance assets. A new field manual issued in 1943 also provided more effective guidance for separate tank battalion operations and doctrinally aligned them with other armored operations.³⁸

Conversely, mounted reconnaissance remained outside the scope of Armored Force responsibilities. Instead, it developed separately under the guidance of the Cavalry School at Fort Riley, Kansas. There, light mechanized squadrons were organized to acquire battlefield intelligence. They were not intended to perform the full range of cavalry functions and did not possess the organic means to do so. Embedded as divisional reconnaissance assets or employed separately under a group headquarters, these organizations found few opportunities during World War II to conduct purely reconnaissance missions. Instead, they found themselves engaged in a broad range of roles for which they were not configured to perform. Consequently, postwar analysis emphasized the importance of crafting reconnaissance units equipped to fight for information and imbued with the same combined arms principles found in the armored divisions.³⁹

The armored cavalry regiment reflected these concepts. In the late 1940s, the onset of the Cold War generated a need for additional combat organizations to defend central Europe against a possible Warsaw Pact invasion. Those units performing stability operations in occupied Germany were reconfigured into the first armored cavalry regiments. These new units included considerable combat power. Their concept of operations embraced combined-arms principles; mobile dispersed operations; robust electronic communications; and a diverse mission set. In essence, they constituted a return to the general purpose combat unit represented by the 7th Cavalry Brigade (Mechanized) at Fort Knox in the 1930s.⁴⁰

The aftermath of World War II led to reconsideration of the future course of armored development within the Army. The wartime contributions of armored divisions, mechanized reconnaissance, and separate tank battalions warranted their retention, but the Armored Force possessed no legal status and no longer existed by war's end.⁴¹ The question of a permanent mounted branch became part of a broader discussion between Congress and the Army concerning the structure of the postwar army. Resolution occurred through passage of the Army Organization Act of 1950.⁴² This act provided the legal foundation for a single branch that consolidated armored and cavalry development. The Armor

Branch resulted and was responsible for the doctrine, materiel, training, and organization of mounted maneuver units other than mechanized infantry. The central role played by Fort Knox in mechanized development since 1931 found acknowledgement in the selection of the post as the headquarters of the new branch.

Cold War developments continued to reflect the shaping influence of the 7th Cavalry Brigade (Mechanized) and the wartime experience of the armored divisions. The flexible organization, battle command techniques, maneuver emphasis, and high operational tempo remained fundamental characteristics of mounted maneuver units. Even in today's operational environment, these qualities are readily discernible. The Army's transition to a modular combat team structure, for example, parallels the general principles embedded in the combat command structure of the World War II armored divisions.

However, the Armor Branch that emerged in 1950 also reflected the experiences of the separate tank battalions intended for infantry support. The battlefields of World War II demonstrated the need for close armor support of the rifleman at the small-unit level. More recently, the importance of tank-infantry operations at company level and below has been demonstrated in Operation Iraqi Freedom. Tactical coordination problems experienced between separate tank battalions and infantry formations in World War II resulted in the permanent assignment of tank units to postwar infantry divisions.⁴³

Infantry influences on armored development also became manifest in other areas. In the years prior to World War II, the infantry consistently sought greater tank firepower in contrast to the mechanized cavalry, which feared a degradation of platform maneuverability and mobility. After the war, American main battle tank designs consistently favored a more powerful main armament and increased armor protection. Similarly, Major General George A. Lynch, chief of infantry from 1937 to 1941, associated the tank with antitank operations. His view was rejected at the time by senior leaders, who considered tank-versus-tank combat an exceptional occurrence. Wartime experiences, however, validated the need for using tanks in an antitank role, and postwar doctrine embraced the tank as the best antitank weapon available to the Army.⁴⁴

However, Fort Knox remained at the center of armored development, where the Armor Center and School shaped the doctrine, organization, training, and leadership of the mounted branch. Even after initial training, all armored soldiers tended to return to the post for either further training or as part of a duty assignment. Armored materiel also reflected the study and analysis of battlefield needs conducted by combat developers at Fort Knox. The Abrams tank, for example, originated as a concept and set of requirements determined by the Main Battle Tank Task Force, a special team assembled on post for this purpose in 1972.⁴⁵

Today, it is hard to disassociate Fort Knox with armored development. Since 1931, the post has been in the forefront of mounted maneuver, developing ideas and principles of operations now embedded in Armor doctrine and training programs. The roots and heritage of the branch lie at Fort Knox. From the earliest days of the 1st Cavalry Regiment (Mechanized) to the current global war on terror and the design of the Future Combat Systems, activities on the post have shaped the Nation's armored warfare capability. Hence, the current realignment of the Armor Center and School to Fort Benning constitutes a new chapter in armor's development. It does not represent a return to the branch's roots — those lie at Fort Knox, where the Thunderbolt was first forged.



Notes

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⁴S.D. Rockenbach, "Tanks Lecture," lecture delivered at Tank School, 4 June 1923, pp. 59-60, U.S. Army Military History Institute (MHI) Library; House Document 863, "Report of the Chief of the Tank Corps," 30 June 1920, p. 1896; Memorandum from the Adjutant General, AG 537.3 (3-25-36) Misc. M-C, "Policies governing mechanization and the tactical employment of mechanized units," MHI Archives, Willis D. Crittenger Papers, Box: "1st Armored, 3d Army, Orders and Memoranda 1935-1941," 6 April 1938, pp. 3-4; The Infantry School, "Tank Combat Principles (Tentative)," MHI Archives, Alvan C. Gillem, Jr. Papers, Box: "Infantry Training, Pre-World War II Tank Training, Fort Benning," 1939-1940, pp. 7, 13-16; George A. Lynch, "Final report of Major General George A. Lynch: A summary of infantry developments during his term of office," MHI Library, 30 April 1941, pp. 60-61; and Nenninger, pp. 62, 68, 73.

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²¹H. Jordan Theis, "Yet Another Treasure and Problem for the Army," *Cavalry Journal*, XLV, No. 4, July-August 1936, pp. 292-295.

²²The Adjutant General, "War Department policies for mechanization," 5 April 1935, p. 2.

²³For an overview of horse cavalry missions and principles of employment, see War Department, *Field Manual (FM) 2-15, Cavalry Field Manual: Employment of Cavalry*, GPO, Washington, D.C., 1941.

²⁴Academic Division, the Cavalry School, "Mechanized Cavalry," 1932-1933, p. 45.

²⁵War Department, *Cavalry Field Manual*, 3 vols., GPO, Washington, D.C., 1938; II, *Mechanized Cavalry*, pp. 92-93 and 106-112; III, *Employment of Cavalry*, pp. 122-123, 129. See chapter 2 of Volume II for a description of the intended operation of the mechanized cavalry as multiple columns with detachable headquarters elements.

²⁶Letter from Van Voorhis to Henry, 29 June 1933; letter from Van Voorhis to Henry, 11 July 1933; letter from Lieutenant Colonel Adna R. Chaffee to Major I.G. Walker, 15 August 1934, NARA, Record Group 177, Entry 39, Office of the Chief of Cavalry, General Correspondence, 322.02; Grow, p. 54.

²⁷War Department, *Cavalry Field Manual II, Mechanized Cavalry*, pp. 139, 140-145.

²⁸*Ibid.*, pp. 134, 139, 144-145.

²⁹*Ibid.*, pp. 136-139.

³⁰Adna R. Chaffee, "The Seventh Cavalry Brigade in the First Army Maneuvers," *Cavalry Journal*, XLVIII, November-December 1939; Adna R. Chaffee, "Mechanized Cavalry," Lecture delivered at the U.S. Army War College, 29 September 1939, p. 6, in "Army War College Lectures 1939-1940," Part 2, MHI, Army War College Curricular Archives.

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³⁴Historical Section, "Armored Force Command and Center," pp. 144-146.

³⁵Letter from Lieutenant Colonel Willis D. Crittenger to Lieutenant General Daniel Van Voorhis, MHI Archives, Willis D. Crittenger Papers, Box: "Correspondence: 1939-1941," 2 December 1940, pp. 2-3; Historical Section, "The Armored Force Command and Center," p. 11; Lucian K. Truscott Jr., *The Twilight of the U.S. Cavalry: Life in the Old Army, 1917-1942*, University Press of Kansas, Lawrence, KS, 1989, pp. 160-161.

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³⁸Historical Section, "The Armored Force Command and Center," pp. 44-47, quote from p. 46.

³⁹United States Forces, European Theater, "The General Board, Study No. 49: Tactics, Employment, Technique, Organization, and Equipment of Mechanized Cavalry Units," 1945.

⁴⁰Colonel Charles H. Reed, "Armored Cavalry Light: Its Organization as Derived From Missions," *Armored Cavalry Journal*, LVIII, January-February 1949, pp. 12-17, 35; Mary Lee Stubbs and Stanley Russell Connor, *Army Lineage Series: Armor-Cavalry: Part I: Regular Army and Army Reserve*, Office of the Chief of Military History, Washington, D.C., 1969, p. 76.

⁴¹The Armored Force underwent several changes during the course of the war that reduced its independence within the Army command structure. In July 1943, the Armored Force became the Armored Command, followed in February 1944 by downsizing and redesignation as the Armored Center. The end of the war resulted in the inactivation of the Armored Center for several months until its reactivation in November 1946.

⁴²Stubbs and Connor, p. 75.

⁴³John B. Wilson, *Maneuver and Firepower: The Evolution of Divisions and Separate Brigades*, Center of Military History, Washington, D.C., pp. 225-227.

⁴⁴Memorandum from Chief of Infantry Major General George A. Lynch to the Assistant Chief of Staff, G3, "Antitank Doctrine and Development," NARA, Record Group 337, Entry 57, Headquarters, Army Ground Forces, General Headquarters, 470.8, File 201, 3 July 1940.

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Robert S. Cameron is the armor branch historian.