

Saddles and Sabers: From Medical Squadron to Armored Medical Battalion: Developing Medical Support for Mechanized Cavalry

by Dr. Grant T. Harward

When COL Daniel Van Voorhees and MAJ Adna R. Chaffee Jr. began mechanizing cavalry regiments in the early 1930s, they focused on the combat units. These armored pioneers needed to develop vehicles, organization, tactics and doctrine for combat units, but they neglected doing the same for support units – especially the medical service.

MAJ Merton Farlow, Medical Corps (MC), a surgeon in 1st Cavalry when it was mechanized, recalled “a great deal of talk about the future and probable utility of mechanized cavalry itself” but much less discussion about how to support it. “It was admitted that to render adequate medical service would probably be a difficult task,” Farlow wrote.¹

The Army Medical Department (AMEDD) faced an unprecedented challenge. Medical support for mechanized cavalry would have to be mobile to keep up, flexible to support a range of missions and capable of evacuation over long distances, but also be small enough to not encumber operations.

AMEDD took up the challenge with only limited help from the Cavalry Branch. The efforts to square that circle would be the foundation for the medical service for the Armored Force in World War II.

1920s mechanized cavalry

Mechanized cavalry resulted from the failure to create an independent tank force. The Army had established the Tank Corps in France in 1917 during World War I, but military and civilian leaders immediately questioned the need for it after the armistice in 1918. A post-war review board concluded that the tank was an “infantry-supporting weapon incapable of independent decisive action.”² Consequently, the National Defense Act of 1920 abolished the Tank Corps and assigned tanks to the Infantry Branch.

This situation started changing in 1927 when the U.S. Secretary of War observed the British Experimental Mechanized Force’s maneuvers, which demonstrated improvements in tank speed, range and reliability. That year, the Cavalry Branch also adopted an organization that made it smaller and more mobile by substituting some cavalrymen in combat units with machineguns and by motorizing some support units. These changes were supposed to keep cavalry relevant but unintentionally began a process of mechanization and motorization that eliminated horses from the Army.³

The War Department created the Experimental Mechanized Force in 1928 to test armored vehicles and concepts.⁴ A board recommended creating an independent mechanized force, but the timing for it was terrible.⁵ In 1929, the Great Depression hit America, devastating the economy. The War Department’s budget was slashed, and the Army deemed the mechanized force, created in 1930, a “luxury” it already could no longer afford.⁶

All branches to motorize

In May 1931, Chief of Staff GEN Douglas MacArthur disbanded the mechanized force, and he issued the “General Principles to Govern Mechanization and Motorization throughout the Army.” Missions, not equipment, would dictate organization, so all branches were to adopt mechanized and motor vehicles as far as practical. The tank’s role expanded from infantry support to include cavalry missions like reconnaissance, security, exploitation and pursuit.⁷

The Cavalry Branch’s mechanization program was limited to one mechanized-cavalry regiment for testing. In January 1932, Camp Knox, KY, was upgraded to Fort Knox to become the garrison for mechanized cavalry.⁸ In November, 1st Cavalry arrived to bid farewell to horses and say hello to armored vehicles.



Figure 1. An experimental cavalry ambulance is landed during an exercise for testing. This hybrid vehicle, horse-drawn but with modern tires, illustrates the Cavalry Branch's schizophrenic approach during the interwar years as it mechanized and motorized but still held onto its horses. (MFSS scrapbook collection, AMEDD Center of History and Heritage Archives, Fort Sam Houston, TX)

The War Department ordered all branches to mechanize and motorize; however, mechanization primarily impacted the Infantry and Cavalry Branches.⁹ Mechanization was the use of any mechanical means to enhance a combat unit's tactical effectiveness and mobility, but it became associated with the use of armored vehicles. Motorization, on the other hand, was the substitution of draft animals by motor transport in support units for greater operational mobility.¹⁰

With the Infantry Branch's monopoly over tanks broken, the Cavalry Branch began developing its own tank organization, tactics and doctrine.¹¹ To bypass congressional mandate, tanks in the Cavalry Branch were called "combat cars." The machines were basically identical, but the roles for Infantry Branch tanks and Cavalry Branch combat cars were utterly different. Tank regiments supported slow-moving infantry divisions, so the existing services only needed minor tweaking to provide support to these new combat units. In contrast, mechanized-cavalry regiments operated independently, advanced rapidly and fought dispersed or widely separated, which presented a myriad of problems for support units – including medical.

Bare minimum

The Cavalry Branch's priority for maneuver meant cutting support units to the bare minimum and only added to the difficulties confronting support services. In February 1932, 1st Cavalry (Mechanized) consisted of a headquarters and headquarters troop, a machinegun troop, a scout-car troop, an armored-car troop and a combat-car squadron with two combat-car troops.

Only after field testing and analysis could service units be added. The General Staff cautioned, "Our cavalry regiments (mechanized) must be kept stripped – and if we make any errors, they must be on the side of cutting out vehicles rather than adding a single one, no matter how very valuable the particular vehicle might be under certain considerations."¹²

In March 1933, 7th Cavalry Brigade (Mechanized) was established, but it was really only a small command cell. By January 1934, cavalry planners had solidified new tactics and doctrine. Mechanized cavalry would operate in small groups dispersed over a broad front, with armored cars carrying out reconnaissance, and two combat-car spearheads supported by machinegunners and engineers assaulting and then enveloping the enemy.¹³

In May, 1st Cavalry (Mechanized) impressed observers during maneuvers, but the Cavalry Branch moved slowly to mechanize another cavalry regiment.¹⁴ Nonetheless, it was clearly time to seriously examine what support a mechanized-cavalry brigade needed.

Cavalry planners added the bare minimum of support units, skimping particularly on medical assets. A 1934 Command and General Staff School (CGSS) paper by an Ordnance Department officer on supply and evacuation for a mechanized-cavalry brigade suggested adding medical detachments to subordinate units and a medical squadron.¹⁵ Regimental medical-detachment ambulances would provide first aid and evacuate casualties to a brigade collecting station, where corps or army ambulances – possibly even “ambulance airplanes” – would then evacuate wounded to corps or army medical facilities. The study declared that because of the need for “great mobility,” the mechanized-cavalry brigade should not have a brigade hospital station that might slow it down.¹⁶



Figure 2. An airplane view of a hospital station set up for a demonstration near the Washington Monument by 1st Medical Regiment. This medical asset is what cavalry planners wanted to cut from the mechanized-cavalry brigade so as not to impede its “great mobility.” (MFSS scrapbook collection, AMEDD Center of History and Heritage Archives, Fort Sam Houston, TX)

In April 1935, the War Department added a motorized field-artillery battalion to 7th Cavalry Brigade (Mechanized), but the medical squadron remained notional. It also authorized an updated organization for 1st Cavalry (Mechanized) that included a regimental headquarters, an armored-car troop, a machinegun troop, two combat-car squadrons, a service troop and a regimental medical detachment.¹⁷

AMEDD discussion

AMEDD planners believed the current medical squadron was unsuited for a mechanized-cavalry brigade, however. AMEDD tasked instructors and students at the Medical Field Service School (MFSS) to study the best solution for providing medical support to mechanized cavalry. MFSS was established at Carlisle Barracks, PA, in 1921 to train medical officers in field operations.¹⁸ Also, MFSS functioned like an AMEDD think tank. Students at MFSS had time to examine current problems and future challenges, so AMEDD used them to find innovative solutions.

For example, MFSS held an advanced course for field-grade officers each year that required students to write research papers on important medical issues facing the Army. Although student papers were not official, they were influential because the Army was smaller than today, and officers who attended such centers had greater impact. The creation and expansion of mechanized cavalry resulted in a slew of MFSS papers about how to best organize a medical service for these new units.

Obviously, mechanized cavalry needed motorized medical support. The existing medical squadron numbered 13 officers, 207 enlisted men, 211 animals, 18 wagons and 17 motor vehicles. It had a headquarters troop, a collecting

troop, an ambulance troop (half motorized), a hospital troop and a veterinary troop.¹⁹ This “mixed” medical squadron was supposed to fulfill the needs of horse, partly motorized or mechanized-cavalry regiments.

MAJ Adolphus McDaniel, MC, in his 1935 MFSS paper on the medical squadron’s capacity to evacuate wounded for a cavalry division, argued that it was unbalanced and that instead there should be two types of medical squadrons, either animal-drawn or motorized, depending on the cavalry division’s composition.²⁰ Without horses the veterinary troop became superfluous, except for meat and food inspection, so only one of two veterinary officers and one of 50 veterinary enlisted men should be retained for the motorized medical squadron.

McDaniel also suggested that the motorized medical squadron combine the collecting and ambulance troops and be equipped with a “small body vehicle” (like a machinegun cart or a half-track) capable of transporting two medics (still officially referred to as “aid men” at the time) and two litter cases.²¹ However, the Cavalry Branch only had one mechanized-cavalry regiment and just a few partly motorized cavalry regiments, so it held onto its “mixed” medical squadron.

Medical support limited

AMEDD planners were not only worried about the notional medical squadron for 7th Cavalry Brigade (Mechanized) but also the existing regimental medical detachment with 1st Cavalry (Mechanized). It was too small. After jettisoning 14 veterinary enlisted men, the regimental medical detachment only had three officers and 15 enlisted men plus an ambulance, two half-tracks, a truck and a motorcycle with a sidecar.²² This left just 18 medical personnel to care for 799 other soldiers.

In his 1935 MFSS paper on evacuating the wounded in a mechanized-cavalry regiment, MAJ Levy Johnson, MC, argued that this pigmy medical unit was unequal to the mission, especially considering the nature of mechanized-cavalry operations. Horse-cavalry regiments could advance 30 miles in a day’s march, but mechanized-cavalry regiments could conceivably race 150 to 250 miles a day. Mechanized-cavalry attacks would be violent, rapid and dispersed, leaving casualties spread over dozens or scores of miles. “A more difficult situation as a problem for the medical service is hard to imagine,”²³ Johnson warned.

Johnson expressed great concern about the armored-car troop because its reconnaissance missions into hostile territory were sure to produce isolated and widely spaced losses. “Information concerning such losses might, from the medical point of view, easily be fatally late in reaching the main body,”²⁴ Johnson said. Yet after filling regimental surgeon, assistant regimental surgeon, regimental dental surgeon, seriously-wounded department assistants, slightly-wounded department assistants, drivers and other key positions, the existing regimental medical detachment only had four medics to provide first aid to, collect and evacuate casualties. Moreover, since the two half-tracks with two medics each were assigned to trail the two combat-car squadrons, the armored-car troop and machinegun troop lacked dedicated medics.²⁵

Johnson recommended adding seven more enlisted men to the regimental medical detachment, for a total of 25, allowing four medics to be assigned to each half-track and two medics to be assigned to the machinegun troop. He also emphasized the need for first-aid supplies in each vehicle and “thorough instruction of the individual [mechanized cavalryman] in the use and application of first-aid measures” because medics could not be everywhere – especially with the armored-car troop.²⁶

AMEDD planners thought the great distances involved in mechanized-cavalry operations might overstretch the capabilities of motorized evacuation and examined other solutions. AMEDD considered fixed-wing air evacuation for mechanized cavalry. MAJ Ernest Harrison, MC, predicted in his 1935 MFSS paper on air evacuation that in a few years, most evacuation would be by motor transport, and in a couple of decades, practically all evacuation would be done by air transport.²⁷ His futurist depiction included fleets of large and small aircraft, with compartments for medical treatment operating from forward unimproved landing strips to established rear-area runways, but it was light on practical details and ignored challenges of navigation, weather and enemy air defenses.²⁸ The limitations of aircraft technology excluded air evacuation as a solution to AMEDD’s problem.



Figure 3. An example of an interwar “ambulance airplane.” This was the only type of airplane capable of operating from unimproved airfields to evacuate casualties from near the front, but it was vulnerable to navigational errors, bad weather and enemy air defenses. (Reeve photograph collection, Otis Historical Archives, National Museum of Health and Medicine)

Leaving wounded Soldiers behind?

Despite budgetary limitations and resistance to “dehorsing” the cavalry, the Cavalry Branch moved forward with turning 7th Cavalry Brigade (Mechanized) into a real unit.²⁹ In July 1936, 1st Cavalry (Mechanized) issued an organization mission statement for a mechanized-cavalry brigade emphasizing its increased speed, firepower and armor, but noting its more restricted cross-country mobility, greater reliance on supply (especially for fuel) and increased maintenance requirements.³⁰ During 2nd Army’s maneuvers in Michigan, 7th Cavalry Brigade (Mechanized) was temporarily augmented with another motorized-artillery battalion, a motorized-infantry battalion, service units and a squadron of observation aircraft to confirm that its tactical doctrine worked and motorized infantry could keep pace with mechanized cavalry to carry out double envelopments.

In September, 13th Cavalry moved to Fort Knox to be mechanized. After examining the summer maneuvers, observers recommended adding an infantry battalion, an air-reconnaissance squadron, an engineer troop, a signals detachment, an ordnance company and a quartermaster squadron to 7th Cavalry Brigade (Mechanized) – all of which was approved except assigning motorized infantry.³¹ Cavalry planners omitted an organic medical squadron or even a brigade medical detachment.

There had also been no effort to improve the regimental medical detachment, so Farlow’s 1936 MFSS paper on the medical service for mechanized cavalry again addressed the issue. Based on MFSS lectures and his own time with 1st Cavalry (Mechanized), he questioned the ability of the regimental medical detachment to do its job, arguing, “[T]he fact that casualties, under certain conditions, are supposed to be left with the civilian population is in itself an admission of failure.”³²

The Cavalry Branch’s efforts to make horse-cavalry regiments leaner and meaner had cut support units, including the medical service, to the bone. The mechanization of cavalry regiments had worsened the situation by removing veterinary personnel from their regimental medical detachments. Due to insufficient medical support, Cavalry Branch doctrine allowed casualties to be left behind with enemy civilians if combat units needed to keep advancing.³³

Farlow took umbrage not only at the insufficient number of enlisted men but also that there was “no information as to how the 15 enlisted men are to be used.”³⁴ He believed adding more medics and litter bearers would allow the regimental medical detachment to properly collect wounded men so they were not left spread across the battlefield lost, forgotten or captured.

Also, Farlow argued that the regimental medical detachment lacked the necessary vehicles to keep up with combat units, especially a mechanized evacuation vehicle with enough space to treat six casualties. He believed there

should be five officers and 23 enlisted men, plus four mechanized evacuation vehicles manned by a driver and three medics (with an accompanying motorcyclist each for communicating messages because there were no radios for individual vehicles) assigned to the two combat-car squadrons, machinegun troop and service troop.

Since there was no room for medics in armored vehicles, cavalrymen would evacuate wounded to the medics. Once enough wounded had been collected, the mechanized evacuation vehicles would transport them to an ambulance center. From the ambulance center, the ambulance would evacuate casualties directly to a division hospital because there would be no brigade hospital.³⁵

Farlow did not challenge the assumption that there was no need for more brigade medical assets for mechanized cavalry.



Figure 4. A mobile surgical unit consisting of trucks with a special operating-room body. During the mid-1930s, MFSS experimented with such vehicles to try to find a solution to providing mobile medical support to mechanized and motorized units. (MFSS scrapbook collection, AMEDD Center of History and Heritage Archives, Fort Sam Houston, TX)



Figure 5. A look inside one of the trucks with special operating room body. (MFSS scrapbook collection, AMEDD Center of History and Heritage Archives, Fort Sam Houston, TX)

Hawley's influence

Other AMEDD planners believed the whole medical service for the mechanized-cavalry brigade needed to be redesigned from the ground up. MAJ Paul Hawley, MC, was a veteran World War I surgeon, former Philippine Department medical inspector, recent instructor at the Army Medical School and a rising star in AMEDD. Hawley wrote a CGSS paper about the evacuation and hospitalization for a mechanized-cavalry brigade in 1936, pushing for change at every level.

“After pondering these problems for almost a year, I am convinced that the present doctrine of evacuation must be modified if a satisfactory medical service is to be provided for any force that is considerably more mobile than the echelon upon which it depends ultimately for supply and evacuation,” Hawley wrote.³⁶

Hawley argued that the “most critical link in the entire chain of evaluation” was moving a casualty from place of injury to an aid station for emergency treatment and organized transport to the rear.³⁷ Therefore, he reasoned, a mechanized-cavalry brigade needed aid stations on wheels stripped of all but the most essential equipment to keep pace with combat-car squadrons. Lacking equipment, these mobile aid stations needed to evacuate casualties as soon as possible after providing stabilizing first aid.³⁸

In Hawley's conceptual framework, each combat-car squadron should have a squadron medical detachment of one officer and five enlisted men, with two or three ambulances. The ambulances would rotate: one would be the aid station until it needed to evacuate casualties to the brigade hospital station, when the second would come forward to take its place, then the pattern would repeat.³⁹ The machinegun troop would have similar support, but the armored-car troop would have to transport its wounded in its own vehicles.

The regimental medical detachment would be responsible for the regimental aid station, which would have more equipment and supplies to collect, provide care to and evacuate casualties.⁴⁰ Hawley thought a regimental medical detachment should have five officers and 45 enlisted men, with eight ambulances, two trucks and three motorcycles. This was twice what MFSS papers had suggested.

Finally, the medical troop would focus on supply and hospitalization at the brigade level. The brigade hospital station needed to be just as mobile as squadron aid stations because Hawley expected it would have to move so often that it would have no time to waste unpacking and repacking equipment, setting up and taking down tents, or loading and unloading wounded. He suggested using “metropolitan” ambulances as mobile hospital stations because they could carry the necessary equipment, and two litter cases.⁴¹



Figure 6. A 1934 ambulance shown in contrast to the 1942 ambulance. The “metropolitan” ambulance on the right is the type considered for use as a mobile hospital station due to its roominess, comfort and ability to heat the inside temperature (to help treat shock). (U.S. Army Signal Corps photograph collection. Otis Historical Archives, National Museum of Health and Medicine)

The brigade medical troop had to evacuate casualties because higher medical echelons might not know where it was as it hurried to keep up with the rest of the unit.⁴² The brigade medical troop should have five officers and 60 enlisted men with 10 ambulances, eight trucks and eight motorcycles.

After graduating from CGSS, Hawley was promoted and became both the commander of 1st Medical Regiment (a training/demonstration unit co-located at Carlisle Barracks) and an instructor at MFSS, ensuring his ideas about the medical service for mechanized cavalry entered the mainstream of AMEDD thought.

Eve of war

Despite AMEDD's legitimate concerns, the Cavalry Branch ignored the medical-service issue even as it began pushing in 1937 to create a mechanized-cavalry division.⁴³ This prompted the War Department to re-examine its mechanization policy, as some believed mechanized cavalry was turning into a *de facto* independent branch and the mechanized force should be resurrected. However, Chief of Staff GEN Malin Craig decided against this in March 1938.⁴⁴ The War Department rejected the Cavalry Branch's proposed mechanized-cavalry division in May 1939; however, it suggested establishing another mechanized-cavalry brigade.⁴⁵

In September 1939, as German panzer divisions overran Poland, the Cavalry Branch again attempted to convince the War Department of the need for a mechanized-cavalry division. In December, the Infantry Branch established the Provisional Tank Brigade at Fort Benning, GA, belatedly beginning its own experiments in employing a large mechanized formation.⁴⁶ In May 1940, during Third Army maneuvers in Louisiana, the General Staff experimented with mechanized units, including turning 7th Cavalry Brigade (Mechanized) into a provisional mechanized-cavalry division and combining 7th Cavalry Brigade (Mechanized) and the Provisional Tank Brigade into the Provisional Mechanized Force.⁴⁷

Coincidentally, the day after the maneuvers started, Nazi Germany invaded France. The fall of France, changes that increased the chief of staff's authority, a growing budget and pressure from key people prompted Chief of Staff GEN George C. Marshall to radically change mechanization policy.⁴⁸ A mechanization conference decided to create two mechanized divisions under a mechanized corps, reorganize tank regiments like mechanized-cavalry regiments, put mechanized-cavalry officers in charge and adopt mechanized-cavalry doctrine.



Figure 7. A display of new equipment by 1st Cavalry (Mechanized) at Governor's Island in New York harbor in 1939. A medical trailer marked with a Red Cross is clearly visible. Despite AMEDD's efforts, 1st Cavalry (Mechanized) still only had an understrength medical detachment with few vehicles to support the entire regiment. (Frank R. McCoy photograph collection, U.S. Army Heritage and Education Center)

In July, the War Department created the Armored Force and gave it control over all tactical and technical developments for mechanized units.⁴⁹ The term "armored" instead of "mechanized" emphasized the force's independence from the other branches and the tank's new primacy on the battlefield.

The Armored Force initially consisted of I Armored Corps with 1st and 2nd Armored Divisions, which were built from 7th Cavalry Brigade (Mechanized) and the Provisional Tank Brigade, respectively, and 70th Tank Battalion (Medium). Armored divisions consisted of a headquarters and headquarters company, a reconnaissance battalion, an

armored brigade (with two light tank regiments, a medium tank regiment, an engineer battalion and an artillery regiment), an infantry regiment, a signal company, a supply battalion, a maintenance battalion and a medical battalion.⁵⁰

Now-LTC Hawley (again an instructor at MFSS after graduating from the Army War College) reprinted his four-year-old CGSS paper on the medical service for a mechanized-cavalry brigade so AMEDD could use it as the framework for the medical service for an armored division.

America enters war

In December 1941, the Japanese attack on Pearl Harbor brought the United States into World War II. The Armored Force hurriedly made more changes to its armored divisions. By March 1942, an armored division consisted of a division headquarters (including two combat commands), two armored regiments (with one light-tank battalion and two medium-tank battalions each), three artillery battalions, an armored infantry regiment, an engineer battalion and a division train, including a maintenance battalion, a supply battalion and a medical battalion.⁵¹ AMEDD had ensured the Armored Force enjoyed robust mobile medical support.

The chapter on the Armored Force medical service in Field Manual (FM) 8-5, ***Mobile Units of the Medical Department***, was updated in May. It began by emphasizing the Armored Force's speed and paucity of hospitals below armored corps level.⁵² A division surgeon advised on sanitation and medicine, oversaw medical training and liaised with forward medical units.

Each armored division had an armored medical battalion consisting of a headquarters and headquarters company with 13 officers and 90 enlisted men, and three armored medical companies that could be detached to either combat command or division train.⁵³

Each armored medical company had a headquarters platoon, a litter platoon, an ambulance platoon and a treatment platoon, with 11 officers and 122 enlisted men, a half-track, 31 trucks and two trailers. The treatment platoon even had trucks mounted with a special operating room body instead of tents to unpack and repack.⁵⁴

A unit surgeon in charge of health and running a unit medical detachment was assigned to each of the various regiments and battalions in an armored division. Every regimental medical detachment contained a headquarters section and two (sometimes more) battalion sections, with trucks and a half-track, and operated the regimental aid station.⁵⁵ Every battalion medical detachment had a headquarters squad and an aid-station squad (an extra aid-men squad or a litter-bearer squad was assigned to the reconnaissance battalion, infantry battalions and engineer battalion) that operated a battalion aid station.

Establishing battalion aid stations in the rear before an attack was deemed "impracticable" and squads were supposed to "advance along the axis and establish at the rallying point, where they will take over casualties removed from the armored vehicles."⁵⁶

The only major Armored Force addition to the original AMEDD plan was an emphasis on radios as the primary means for medical units to communicate and coordinate on the battlefield.⁵⁷ No one in the Army knew exactly how many casualties an armored division could expect to suffer while on campaign, although the British Army had begun sharing its figures from battles in North Africa, so only the test of battle would prove if the medical service for armored divisions was equal to the task.

From 1932 to 1939, the Cavalry Branch ignored mechanized cavalry's medical requirements while focusing on combat units and maneuver warfare to the extent that it planned to abandon wounded troopers in enemy country. AMEDD continued trying to provide support and find a better solution. The unsung efforts of MFSS students laid the groundwork for the firm foundation upon which AMEDD helped the Armored Force build its medical service at breakneck speed after 1940.

Today the Medical Center of Excellence (successor to MFSS) works to integrate medical support into the Army so units have both force health protection and treatment for wounded, ill and injured. Hopefully, Armor Branch and AMEDD collaborate better today and in the future than Cavalry Branch did during the interwar years.

Dr. Grant Harward is an historian with AMEDD's Center of History and Heritage, U.S. Army Medical Center of Excellence, Fort Sam Houston, TX. Previous jobs include graduate research assistant, Headquarters Department of

the Army Support Division, U.S. Army Center of Military History, Fort McNair, Washington, DC. He holds a bachelor's of arts degree in history from Brigham Young University; a master's of science degree in the history of World War II in Europe from the University of Edinburgh; and a doctorate in history from Texas A&M University. His awards and honors include the Fulbright Award to Romania and the Norman Raab Fellowship at the U.S. Holocaust Memorial Museum. He notes that he "wrote a book on the Romanian army and the Holocaust that will be published by Cornell University Press in a year or so."

Notes

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⁶ Robert S. Cameron, *Mobility, Shock, and Firepower: The Emergence of the U.S. Army's Armor Branch, 1917-1945*, Washington, DC: Center of Military History, 2008.

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¹² Quoted in Cameron.

¹³ Hofmann.

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¹⁸ Lewis L. Barger III, "Medical Field Service School," *Handbook of Texas On-line*, accessed Oct. 01, 2020, <https://www.tshaonline.org/handbook/entries/medical-field-service-school>.

¹⁹ MAJ Adolphus A. McDaniel, *The Medical Service of the Cavalry Division with Emphasis on the Medical Squadron as Now Organized Being Able to Adequately Evacuate and Hospitalize the Casualties of a Cavalry Division*, Carlisle Barracks, PA: Medical Field Service School, 1935.

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²¹ Ibid.

²² MAJ Levy S. Johnson, *The Problem of Evacuation for a Mechanized Cavalry Regiment*, Carlisle Barracks, PA: Medical Field Service School, 1935.

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²⁴ Ibid.

²⁵ Ibid.

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²⁹ Nenninger.

³⁰ Hofmann.

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³² Farlow.

³³ Ibid.

³⁴ Ibid.

³⁵ Ibid.

³⁶ MAJ Paul R. Hawley, *The Evacuation and Hospitalization of a Mechanized Brigade on the March in Hostile Territory and in Combat*, Carlisle Barracks, PA Medical Field Service School, 1940.

³⁷ Ibid.

³⁸ Ibid.

³⁹ Ibid.

⁴⁰ Ibid.

⁴¹ Ibid.

⁴² Ibid.

⁴³ Cameron.

⁴⁴ Nenninger.

⁴⁵ Cameron.

⁴⁶ Ibid.

⁴⁷ Nenninger.

⁴⁸ Cameron.

⁴⁹ Ibid.

⁵⁰ Ibid.

⁵¹ Ibid.

⁵² Change No. 1, FM 8-5, *Medical Field Manual: Mobile Units of the Medical Department*, Washington, DC: War Department, 1942.

⁵³ Ibid.

⁵⁴ Ibid.

⁵⁵ Ibid.

⁵⁶ Ibid.

⁵⁷ Ibid.

Acronym Quick-Scan

AMEDD – Army Medical Department

CGSS – Command and General Staff School

FM – field manual

MC – Medical Corps

MFSS – Medical Field Service School