Combatant Arms vs. Combined Arms

The U.S. Army's Quest For Deep Offensive Operations And an Operational Level of Warfare

by George F. Hofmann

"If the military persists in thinking out tactical problems in terms of cavalry, infantry, and artillery, then we shall render our minds rigid to all new ideas." [1]

Christie-based Combat Car T-4 climbs log ramp during tests in 1934.

The prevailing attitude between "light" infantry, "heavy" armor, and "can-do-all" field artillery needs to be seriously addressed if the Army is to move into the 21st century. The purpose of this paper is to examine the post-World War I conflict between the traditional combatant arms concept, championed by the branch chiefs, and a combined arms idea based upon mechanization and deep offensive operations.

This paper will also explain why the Army was unable to execute an operational level of warfare (the theory of larger unit operations) with a combined arms mechanized force.[2] The interwar historical model is relevant because it has a contemporary analog in today's debate regarding doctrine and service traditions. Is the traditional decentralized organization of the combatant arms suitable for a modern modular combined arms force in a technologically driven army?

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At the insistence of the Army General Staff in 1928, the Army launched its turbulent road to mechanization and the Armored Force. Shortly after he returned from viewing the British mechanized force, Secretary of War Dwight D. Davis made two important decisions. First, he ordered the creation of an experimental mechanized force during the summer of 1928. Second, he directed the Army Chief of Staff, MG Charles P. Summerall, to initiate a preliminary study of the employment of a mechanized force on the future battlefield and determine how the United States could effectively be prepared for such an employment. During World War I, Summerall had been a member of a Board of Officers detailed to evaluate French and British tanks and their tactical deployment. Investigating British experiences, the Board quoted from a future proponent for armor warfare, then Lieutenant Colonel J.F.C. Fuller, that the creation of a mechanized army would-be "one of the greatest epochs in the art of war."[3] Based on his wartime experiences, Summerall became a firm believer in tanks. After the war, he supported a separate status for the Tank Corps and, during the 1920s, was an enthusiastic supporter of the role tanks would play in a future war. Summerall attempted to make their development his first priority. He told students at the War College that the United States always entered a war unprepared. He cautioned against viewing future military problems in light of the Army's World War I experience and warned that the next war would be different as the Army's experience was "a special case that cannot be repeated."[4]

BG Frank Parker, at left, as a colonel in WWI, and BG Adna R. Chaffee, then a major, were key players in U.S. studies of mechanization in the late 1920s and early '30s.

Subsequently, Summerall delegated the study to the assistant chief of staff, G-3 (Training and Operations), BG Frank Parker, who directed members of his staff to execute the secretary's order. However, the chief architect of the study, "A Mechanized Force," was Major Adna R. Chaffee, Jr., who had been assigned to the General Staff in June 1927. According to historian Dr. Tim Nenninger, Chaffee became interested in mechanization shortly after he was assigned to the G-3 staff. A friend serving as a military attaché in England provided the inquisitive Chaffee with details of British efforts in mechanizing its army.[5] Chaffee, the loyal cavalryman, initially wanted to revitalize the horse cavalry, but in 1928, he realized the part mechanization would play in a future war. He admired the Civil War cavalry officer, James Harrison Wilson. By the end of that war, Wilson had used his Union cavalry *en masse*, fought mounted and dismounted, cooperated with the infantry, and used the best weapons available. He was a strong proponent of open warfare, combining fire and movement with a mounted assault when feasible. Wilson's performance was a model of deep offensive operations and battle; he knew how to use a combined arms team. This was an example of what

Professor Schneider called distributed free maneuver, the essence of operational art.[6]

The most innovative conclusion from the G-3 study called for a tactical evaluation of the role of tanks in deep offensive operations. Fuller, one of the most creative proponents of armored warfare in the British Army, recalled meeting with Parker in August 1917. Fuller claimed Parker held "ultramodern views" and called him a "veritable he-man." No doubt this was due to Parker's agreement with Fuller on the need for mechanization and tank employment to end the position warfare that stalemated the Western Front. At the time, Parker shared with Fuller his views that a combined mechanized force, supported by aviation, could widen the breach after a breakthrough and then rapidly progress deep around the German defenses in depth. Parker believed this return to mobility would break the stalemate on the Western Front because the Germans were not capable of adopting such a plan. Fuller gave credit to Parker's views and indicated they were "not put into practice until 1939, and then by the Germans in Poland, when it became known as Blitzkrieg."[7]

The 1928 G-3 study called for a self-contained, highly mobile mechanized force capable of spearheading an attack and holding "distant key positions." Regarding tactics and techniques, the study viewed the mechanized force reflecting more the cavalry's spirit of mobility, rather than that of the arm of close combat, the infantry. The most controversial part of "A Mechanized Force" was the plan for a balanced combined arms force of light and medium tanks, self-propelled field artillery, mechanized infantry, engineers, air support, and a service detachment. This organization differed from the predominantly tank force assembled on the Salisbury Plain in England in 1927. The U.S. Army's combatant arms at the time were the infantry, cavalry, artillery, signal corps, engineers, and air service — all autonomous and controlled by the their branch chiefs. "A Mechanized Force" was the first rational attempt to move the autonomy of the combatant chief of arms to a force structured upon a combined arms organization. General Parker's directed study met approval from the secretary of war, the G-1, the G-2, the G-4, and the chief of the war plans division. In addition, the branch chiefs concurred, except for the chief of infantry,[8] MG Robert H. Allen, who was "heartily opposed" to setting up another branch with the tank as its focus. Instead, he recommended that tanks remain with the infantry, and that armored cars and self-propelled artillery remain with their respective arms.[9] He based his opinion on the 1919 AEF Superior Board, which was convened to consider the lessons of the war and how they would affect tactics and organization of the combatant arms. The Board's report noted that "tanks were accompanying weapons incapable of independent decisive action. There is no such thing as an independent tank attack."[10] Thus, the Superior Board established the tactical tone for the peacetime army. General John J. Pershing supported the Board's recommendations during the 1919 Congressional hearings. Subsequently, the 1920 National Defense Act abolished the World War I Tank Corps and assigned all tanks to the infantry.[11]

General Parker responded to the chief of infantry by noting that World War I tanks were used as auxiliaries to the infantry because they were slow, and that newer tanks allowed for a greater radius of action and greater mobility. This situation, he reasoned, "forces the consideration of [tanks] as a principal arm under certain circumstances, as well as auxiliaries of the infantry." By continuing to acknowledge that the chief of infantry was better positioned to develop tanks, he concluded, tank development was tied to that branch and to the speed of the foot soldier.[12] Limiting tanks to the role of adjuncts of the infantry also obstructed creation of a more efficient organizational framework, a combined arms team, rather than a combatant arms policy, for the future Army.

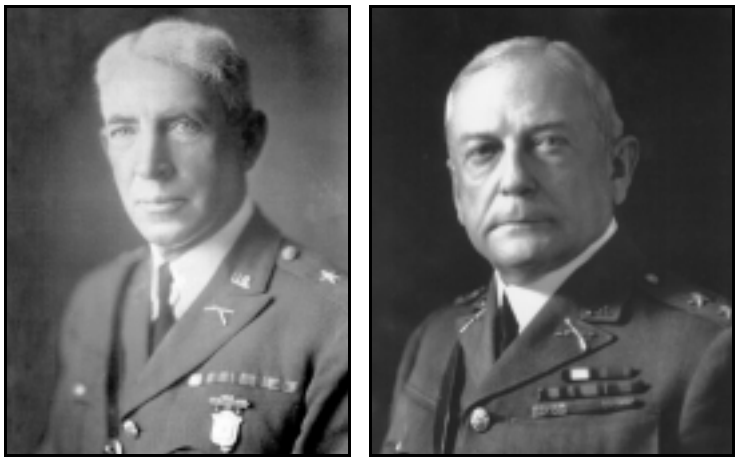
Shortly after the G-3 study's completion, the War Department directed that a board of officers from the various branches be appointed "to make recommendations for the development of a mechanized force within the Army and to study questions of defense against such forces." One of the eleven officers detailed to the board was Major Chaffee, from the G-3 Troop Training Section. The board summarized its results by endorsing a combined force, with tanks forming the backbone of the attack. The board also proposed that the infantry mechanize and that artillery be self-propelled to furnish mobile fire support. In addition, it suggested that the mechanized force act "as a tactical laboratory for the determination of the proper tactics involved in the action of fast tanks." However, in an apparent compromise with the chief of infantry, the board recommended "that a new and separate branch should not be set up."[13]

At this time, J. Walter Christie demonstrated his new, fast tank chassis, M-1940 so named because he believed it represented a ten year advancement in tank technology.

In September 1929, Chaffee delivered his famous lecture at the Army War College, entitled "The Status of the Mechanized Combat Organization and the Desired Trend in the Future." The lecture was an elaboration on "A Mechanized Force." He held that future offensive operations in modern war required a self-contained, highly mobile, mechanized corps with the ability to extend its striking power over great distances. For the first time, Chaffee discussed the impact of French and British experiments with mechanization. The French, who had adopted a defensive and passive orientation, viewed the tank as an adjunct to the infantry, while the British preferred to economize their manpower by equipping their army with movable armor, he told the audience.[14] He added that the situation was different in the U.S., while the French and British were obligated allies under the Locarno agreements, "We have no ally who can be depended upon to furnish either the manpower or the armored mobility."[15] Chaffee understood and analyzed Fuller's idea on a mechanized force, but questioned, as did Parker, its dependence on tanks, armored cars, motorized machine guns, artillery, and engineers at the expense of mechanized infantry or a balanced force.

The tactical principle of open warfare and the importance of fire and movement was critical to Chaffee's thinking about developing a new doctrine. This traditional American doctrine was offensively oriented, the opposite of the position warfare that characterized

combat on the Western Front during World War I. To restore fire and movement, Parker agreed with Chaffee that a logical doctrine that would bring the Army into the future involved rapid and deep attacks by fast moving tanks, supported by a balanced combined arms team of mechanized infantry and self-propelled field artillery. This would provide an opportunity to move to an operational level of warfare, a theory of larger unit operations with a mechanized force capable of deep independent maneuver. But this could only become a reality if the combatant arms were willing to relinquish some of their autonomy.



MG Robert H. Allen, at left, and MG Stephen O. Fuqua, successive chiefs of infantry, opposed a new mechanized combat arm to be created from the horsed cavalry. Later, chiefs of cavalry also opted to hold onto their horses.

Major Chaffee also assessed the intangibles of the officers serving in the British mechanized force, suggesting a similar profile for officers in our mechanized or armored force. They "must be imbued with the spirit of mobility, rapidity of action, and simplicity of control." Furthermore, he explained: "They must be of a progressive, creative mind and not afraid of radical changes." Apparently he was more impressed with psychological motivation than with British tank doctrine.[16]

One book that impressed Chaffee and an officer who later served under him, Major Robert W. Grow, was the award-winning study by George T. Denison, *A History of Cavalry* (1877). Grow recalled one impressive sentence: "A cavalry general should be possessed of a strong inventive genius, and be self-reliant to strike out a new line and adopt reforms where he sees them necessary."[17]

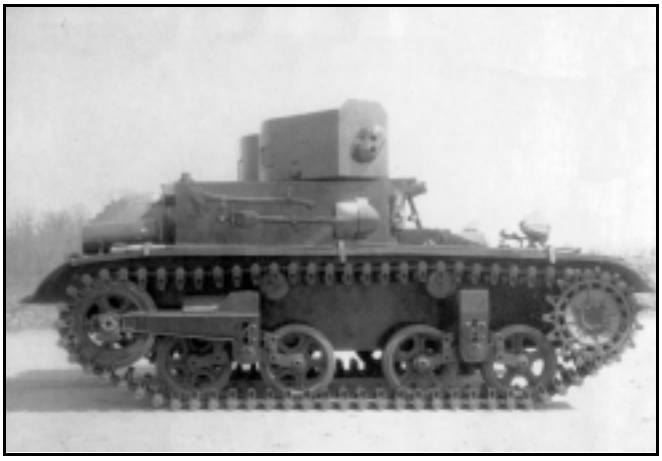
Shortly before he left office in 1930, General Summerall had ordered the creation of a permanent mechanized force to be established at Fort Eustis. Because of the new Christie tank chassis' speed, the G-1, BG Campbell King, visualized it as the basic maneuver weapon for this force.[18] There was considerable interest in the General Staff in developing the Christie for deep offensive operations. The Christie system, with its long helical spring suspension, provided greater compression and extension amplitude for its large road wheels, which noticeably enhanced the firing platform and speed of the vehicle, and had the potential of increasing the operational mobility of armored fighting vehicles. The chief of staff was so impressed with its possibilities that he ordered the Infantry Tank Board to test the Christie tank.[19] The chiefs of infantry and cavalry also wanted to acquire the Christie for their respective branches. This competition over the Christie system altered tank development during the 1930s, because each arm had specific missions that were guarded with traditional reverence.

Meanwhile, the Red Army, through the Soviet Union's purchasing agent in New York City, the Amtorg Corporation, contracted for two Christie tank chassis.

Though costs were a constraint in creating a suitable mechanized force, the main obstruction came from the chief of infantry, MG Stephen O. Fuqua, who had succeeded General Allen. The notion that the cavalry, because of its mobility, was more suitable for managing a mechanized force was rejected. "There is no such animal as 'armored cavalry' in these modern days. Remove the 'horse' and there is no cavalry," was the comment. General Fuqua, in a highly charged memorandum to the deputy chief of staff, stated: "I am trying to lead infantry thought into the same doctrine of open warfare" that was adopted in France by General Pershing. Continuing, "the dehorsing of these units [due to mechanization] will mean an irretrievable loss to the Cavalry." General Fuqua believed fire and movement was the infantry's phase of the attack, with tanks supplying close combat support for the attacking foot soldier.[20] Thus, by the end of 1931, the American doctrine of open warfare conducted by fire and movement had created a conflict between the Army Staff in the War Department and the chief of infantry. The infantry believed open warfare could be restored by placing tanks with its attacking force, while the Army Staff concluded that it could be restored with a combined arms mechanized force.

At the time, the economic pressures of the Depression and a strong pacifist tendency in American politics affected military policy, activities, and technology. In addition, it imperiled doctrine and plans for a future ground war. Factors included the notion that World War I was "the war to end all wars," the naval limitation treaties, the Kellogg-Briand Pact that outlawed war, a strong pacifist element in America, and the Great Depression. By the time General Douglas MacArthur became chief of staff, Congress and the President were trying to restore economic stability by balancing spending with revenue, so the funds required to modernize the Army were far from adequate. As a result, the Mechanized Force created at Fort Eustis was short-lived.[21] General Summerall's successor, General MacArthur, ordered its termination and directed all branches to adopt mechanization and motorization to their traditional roles. This action, though based upon budget restraints and the cost of fielding a mechanized force, kept the Army from developing a combined arms force for deep offensive operations. In addition, it deprived the Army from establishing an operational level of warfare. As a result, the combatant arms had retained their antiquated tactical orientation as World War II approached.

The army chief of staff's decision to decentralize mechanization caused the branch chiefs, especially the infantry, to reinforce their traditional missions and combat tactics as outlined in the 1923 *Field Service Regulations: Operations.* The regulation reflected the French infantry-dominated *Instruction sur l'emploi tactique des grandes Unites* that



The T-5 Combat Car, 1934

The T-4 Combat Car, 1934

Lower cost, in-house design, and the cantankerous personality of inventor J. Walter Christie led the Army to adopt the T-5, an Ordnance design, over the superior Christie vehicle. The T-4 easily outclassed the Army's candidate in head-on-head tests.

defined combat missions within the separate arms. The French doctrine had been assimilated by the AEF during the war, and was echoed in the Superior Board report. Furthermore, the 1920 National Defense Act fixed branch autonomy, which dampened inventiveness during the interwar period. The 1923 *FSR*, which remained in effect until World War II, stated that combined employment of all arms was essential to success. However, the "coordinating principle which underlines the employment of the combined arms is that the mission of the infantry is the general mission of the entire force."[22] So Chaffee could not politic for an all army mechanized force at the time, but had to settle for a decentralized effort to be determined by his branch chief. Consequently, his only road to furthering a mechanized doctrine was through his branch, cavalry.

Years later, then-BG Chaffee gave credit to General Summerall and Parker's G-3 Division for getting the Army thinking about mechanization.[23] The doctrine that emerged from the Army General Staff in 1928, embraced by Chaffee, broke from the 1923 *FSR* that gave primacy to the infantry over other branches. Instead, the General Staff perceived that future armies would be mechanized and organized on the combined arms idea, and positioned for deep offensive operations with the tank as the primary maneuver element. The propelling force behind this new doctrine was the traditional principle of open warfare, shaped by fire and movement. General Summerall's staff focused on this principle, rather than totally accepting the dogma of armored warfare advanced by England, and later Germany. Colonel Daniel Van Voorhis, the commander of the permanent mechanized force assembled at Fort Eustis in October 1930 and later the commander of the mechanized cavalry at Fort Knox, added that the mechanized cavalry's characteristic of fire and movement was its strength. He also recalled German interest in developments at Fort Knox in 1933: "They were not particularly interested in our equipment....They were keenly interested in our views on the proper tactical and strategic employment of mechanized forces."[24] General Grow — then a major — recalled evenings with the German staff officers at the Doe Run Inn near Fort Knox. They said that the U.S. mechanized cavalry was ahead of them in tactical employment "of self-contained fighting units, but that they were ahead of us in the development of vehicular equipment."[25]

While the mechanized cavalry at Fort Knox was developing an organization and tactics based upon their mechanical mounts, U.S. diplomats at the 1932 Geneva Disarmament Conference were proposing "the total abolition of tanks and all heavy mobile land artillery over 155mm in caliber."[26] General MacArthur had concurred. He was ready to give up tanks, because they were considered offensive weapons of war.[27]

MacArthur's opinion undercut any mechanization policy, but another order, by the secretary of war in April 1933, further impeded conditions for establishing a balanced doctrine. This order, spurred by a desire to control costs, limited the weight of tanks and combat cars to 7.5-tons,[28] so it was evident the Army was being subjected not only to budget restraints, but facing limitations on the type of vehicles it could develop. Finally, the drive toward mechanization was also hindered by a strong pacifist element in the United States that still believed America's geographical isolation would insulate it from the Japanese aggression then raging in Asia and the dangerous fascist regimes rising in Europe.

In spite of the mechanized cavalry's advanced thinking, branch tradition and budget pressures smothered the Army's ability to revitalize its doctrine to meet the demands of the future. An example was the main lesson drawn from the 1934 Fort Riley maneuvers, which demonstrated the conflict between tradition and modernity caused by General MacArthur's directive. The maneuvers were designed to determine how far the cavalry had progressed with mechanization, motorization, and new weapons development. The 1st Cavalry (Mechanized), commanded by Chaffee, demonstrated its ability to extend its "sphere of action" within the cavalry's prescribed mission. Generally his unit carried out all normal cavalry missions, such as "reconnaissance and counterreconnaissance, seizing and holding positions, flank cooperation, and delaying action."[29] Before the Fort Riley maneuvers, a new, convertible combat car, the CC T4, which was based upon the Christie helical suspension system, was tested at Fort Knox. The test committee recommended standardization of the vehicle, with certain modifications, a decision Chaffee supported because of the vehicle's operational mobility and speed. During the maneuvers, the Christie-type CC T4 outperformed an Ordnance-designed CC T5, which displayed an ominous profile and a less

The Ordnance-designed Combat Car T5 was selected over the Christie design.

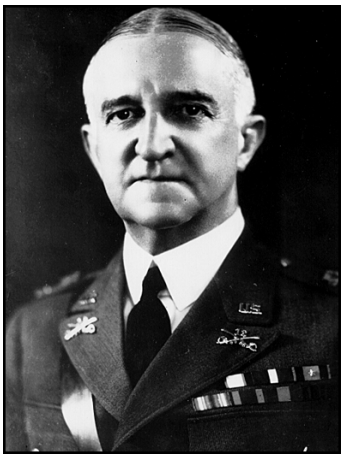
sophisticated volute spring suspension system.[30] By the end of the year, the Army decided to acquire the CC T5 for the cavalry because of the high unit cost of the convertible CC T4 and the convenience of developing an Ordnance Department vehicle to be manufactured at Rock Island Arsenal.[31] By that time, the stubborn Christie had so irritated the Ordnance Department officers that they refused to deal with him.[32]

After extensively evaluating the Fort Riley maneuvers, the Cavalry School's Academic Division recommended further participation with both horsed and mechanized units.[33] The chief of cavalry, MG Leon B. Kromer, speaking later before the students at the Army War College, placated the horse soldiers by reiterating the Academic Division's recommendation.[34] General Grow later claimed the chief of cavalry "possibly could have made cavalry the mechanized arm, had he been supported by the General Staff and senior officers in his branch."[35]

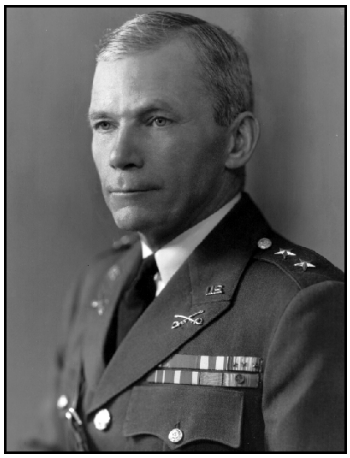
However, the Infantry Board observer at the maneuvers claimed the purpose of the exercise was to determine "first and foremost, whether or not mechanized cavalry could entirely replace horsed cavalry." The observer concluded that the mechanized cavalry's principal role was to supplement the mission of horse cavalry, and further noted that "independent mission will only occasionally be assigned."[36] This proved to be an unimaginative assessment of the future potential of mechanized operations.

In effect, the 1934 maneuvers determined that combat cars, the cavalry's tanks, be harnessed to the horse units as the tank was anchored to the foot soldier. These developments fell in line with the 1923 *FSR* and further stifled the Army's effort in developing a new doctrine of deep offensive operations driven by a combined arms team. Nevertheless, the events at Fort Riley that spring convinced the Fort Knox contingent that a self-contained unit, with new equipment and organized as a mechanized division, could carry out the cavalry's role and fight independently. When the mechanized cavalry returned to Fort Knox, two mechanized field artillery firing batteries were added to the force. Years later, an attempt was made to establish a mechanized division. During 1936 and 1937, the Command and General Staff School published an instructional text for the purpose of tactically employing a mechanized division and its table of organization. It stated such a force be all arms and self-contained capable of deep independent operations with the ability to exploit and consolidate advantages gained. To assist in its mobility, the text supported the use of aviation for control, reconnaissance, and tactical support. However BG Walter Krueger, chief of the War Plans Division, opposed efforts to establish a mechanized division because "it was too big and too much of a fighting unit."[37]

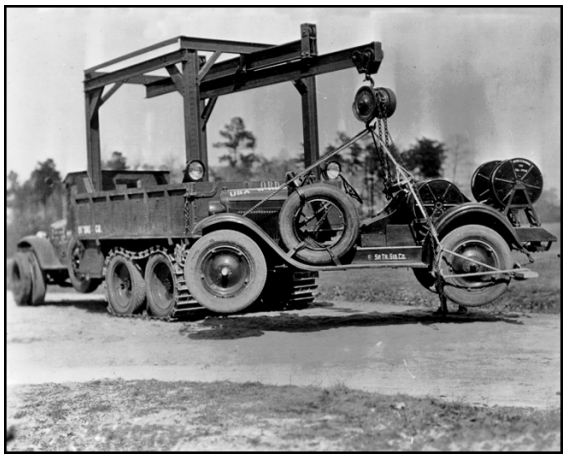
Meanwhile, in the Soviet Union, the Red Army had developed the Christie system into the BT (*Bystrokhodnii Tahk*/fast tank) series, the backbone of its plans for deep offensive operations and a modern operational level of warfare. By 1935, the Red Army had es-



Colonel Daniel Van Voorhis, the commander of the permanent mechanized force assembled at Fort Eustis.



MG Leon B. Kromer, chief of cavalry, opted to keep both horse and mechanized units.



MacArthur's directive was for each branch to experiment with mechanization. Above, a dual-tandem-wheeled crane truck with tracked tires lifts a Signal Corps cable-laying car.

Following the Spanish Civil War, General Malin Craig, the Army Chief of Staff, believed tanks would be too vulnerable to antitank guns.

The chief of infantry, MG George A. Lynch, also believed that the use of tanks had been largely discredited in the Spanish Civil War.

MG John K. Herr, chief of cavalry in the late 1930s, favored keeping horse units. Ultimately, mechanization passed him by.

tablished an equilibrium between doctrine, mechanization, and an operational level with a combined arms force.[38] This allowed the Red Army to demonstrate the importance of operational art. The Soviet milieu was more receptive to arms development because, in Stalin's warfare state, the military budget was not controlled by elected officials and their constituents. In contrast, the U.S. Army — stressed by the reform liberalism of the New Deal, budgetary limitations, four Neutrality Acts, and an unimaginative tank policy — was unable to bring about a similar equilibrium, which could have established an operational level of warfare. The Army during the 1930s failed to implement the doctrine of deep offensive operations imagined in 1928 by the Army Staff and then elaborated by Chaffee in 1929, because it was driven by a flawed organization preserved by the 1923 *FSR*, which entrenched branch conservatism and decentralization. By deferring to the traditional autonomy of the infantry branch chief, the Army failed in any attempt to develop a doctrine of deep offensive operations with an armor-mechanized force.

The Spanish Civil War era (1936-1939) further reinforced the parochial attitude of the Army, especially that of the chief of staff, General Malin Craig, and the ground combatant arm branches. General Craig noted that a balanced army operating in any theater of operations could never "dispense with a proper proportion of mounted cavalry and horse-drawn artillery."[39] The chief of field artillery added that, despite tremendous improvements in mechanization and transportation, "horse-drawn is a little better than motor-drawn" artillery.[40] On tank development, the chief of staff had recommended "a type suitable for close support of [the] infantry."[41] The chief of staff summarized his feelings before a congressional subcommittee hearing on military affairs. He believed future military operations "must be carried out by the traditional arms; that well-trained infantry and artillery form the bulk of armies. Air and mechanized troops are valuable auxiliaries." Regarding military operations in Spain, he observed that tanks were not successful due to antitank weapons, insufficient armor, and mechanical defects, tactical errors in their employment especially *en masse*, and inadequate support from artillery and tactical aviation.[42] One of the officers influencing General Craig and the Army General Staff was the former chief of infantry, General Fuqua, who was the U.S. military attaché in Spain during that country's civil war. It was his opinion, and the opinions of his peers in England and France, that tanks did not prove themselves in separate offensive operations because they were effectively challenged by antitank guns. They concluded their only value was in support of the attacking infantry.[43]

In April 1938, the War Department issued an important but reactive policy governing mechanization and its tactical employment. It noted that operations abroad — as in Spain — had demonstrated that "combatant arms will fight in their traditional roles." Mechanized cavalry, in turn, adhered to its traditional mission in exploiting success.[44] The chief of infantry, MG George A. Lynch, ordained a board of officers to rewrite the Army's tank manual, taking into consideration that the accepted use of tanks had been largely discredited.[45] *Army Ordnance* noted that "independent tank forces are delusion," and suggested they be heavily armored and function as mobile supporting artillery or as accompanying artillery for the attacking infantry.[46] However, the Spanish Civil War provided many misguided observations: tanks on both sides were not tactically or strategically employed *en masse*; most models were deficient in armor protection; their handling was usually inadequate for a country that favored the defense.

Even before the German invasion of Poland in September 1939, the chief of cavalry, MG John K. Herr, made known his preference for the horse. The chief of infantry made no secret that his first love was for the foot soldier. Later — before the Armored Force was created — he vetoed a proposal to convert foot troops to tank units.[47] The chief of cavalry, who had initially supported the establishment of a mechanized cavalry division, changed his mind and refused to mechanize his horse units. Grow, who served in the Office of the Chief of Cavalry during General Herr's tour, claimed he "lost it all."[48] Shortly after the German blitzkrieg consumed Poland, Herr, whose only commitment to mechanization was its use with the horse cavalry, told the attendees at the War College it was obvious "that the machine cannot eliminate the horse."[49] Ultimately, mechanization slipped away from Herr; Chaffee and the forces at Fort Knox finally prevailed when the Armored Force was created. This, according to Grow, was not because a new combatant arm was necessary, but because General Herr and the cavalry did not

grasp the role of mechanization in the next war.[50]

When the G-3, MG Frank M. Andrews, recommended to the chief of staff, General George C. Marshall, in November 1940 that the Armored Force created in June be legally established as a separate combatant arm, it was strongly opposed by Generals Lynch and Herr. The chief of infantry claimed "the Armored Force had only asked for a field force headquarters, not a separate arm; that the infantry and tank battalions under the Armored Force were suffering from a lack of combined arms training." He requested that his units be returned to infantry control.[51] The chief of cavalry claimed the G-3's recommendation was a "petty effort," arguing that "the Armored Force had been violating the terms of the National Defense Act of 1920 in creating non-infantry and non-cavalry armored units." He reasoned that the attainments of the Armored Force "could have been accomplished equally well" in the established branches.[52] Years later, after the war, a bitter General Herr still lamented the loss of his horse soldiers.[53] It was evident the self-serving autonomy of the combatant arms branch chief organization fueled a regression in military thinking. The chiefs of infantry and cavalry could not grasp the difference between traditionalism and modernity, and the role an independent combined arms mechanized force played in deep offensive operations.

The most detrimental position regarding the formulation of a cohesive doctrine guiding the Army on how it could fight its next war was the traditional combatant arms view, mainly articulated by the infantry. General MacArthur's policy of decentralizing mechanization had intensified the autonomy of the combatant arm branches, which reinforced their concentric tactical orientation. This action, along with budget restraints, retarded any attempt to establish a unified tank program. It also deprived the Army of gaining experience in skillfully coordinating a mechanized combined arms force at the operational level. Chaffee blamed this on costs, pacifist tendencies, differences of opinion, and especially, a lack of branch chief awareness. He also agreed that — as in England — the United States "failed to evaluate properly the importance of combined arms in armored units."[54] After General Summerall left office, the General Staff was

LTG Lesley J. McNair, who had once questioned the cost of funding an armored force, instead prescribed a tank destroyer force, established as a separate branch.

Established as a separate branch in 1940, the new Armored Force practiced combined arms operations as it rushed to prepare for war. Here, 1st Armored Division troops maneuver in Louisiana in September 1941 in the already-obsolete M2 medium tank.

driven by the austerity of the Depression, maintaining a conservative attitude toward doctrine, organization, training, and research. This in turn was reinforced by the autonomy of the combatant arm branches. The Army's mission was fitted to an antiquated organization controlled by the self-direction of the branch chiefs and a General Staff prone to parochialism.

During the 1930s, the U.S. Army also looked at military innovations in other countries, especially in Germany and the Soviet Union, but still adhered to its linear tactical doctrine of fire and maneuver whose management was controlled by the infantry. This self-directed attitude among the combatant arms precluded any effort to establish the viable combined arms force necessary to bring the Army into the next decade. The Army's elite were unable to identify the relationship between strategy and tactics and an operational level of warfare. Because of their fixation on the traditional combatant branch concept and the desire to defend their institutions, the chiefs became inflexible to significant ideas that could have moved the Army to change. Their military perception on how the Army was to fight the impending war became archaic. Thus, the conservative action of the branch chiefs and their organizations was inappropriate for preparing the United States for war. Even after the United States entered the war, they refused to rescind their autonomy until it was abolished in March 1942.

Conclusion

To summarize, the chief of infantry — as ordained by the 1923 *FSR* — controlled the tactical level of engagement that was designed to force the linear battle of annihilation with fire and maneuver. This tactical dominance kept the mechanized cavalry from developing a large force capable of dislocating the enemy's psychological and physical equilibrium through deep battle. Only a few farsighted officers recommended an emphasis on an operational level, beyond the realm of tactics, with a large combined arms force capable of deep operations. This would have been possible only if the combatant arms were willing to relinquish some of their autonomy to create a large, modern, mechanized maneuver force. But this was impossible due to the traditional autonomy of branch chief organization. Furthermore, this organization prevented the establishment of an equilibrium between doctrine and tank technology, a necessary factor to achieve an operational level. Added to this was a lack of a national interest in military affairs that financially affected the Army, depriving it of the means necessary to prepare for and fight the next war.

During World War II, the tactically oriented army fought with infantry and armored divisions. The infantry retained separate tank battalions to assist in their attack. The armored divisions fought with a combined arms team, with the tank as the main maneuver element. Pursuit and exploitation in the tradition of the cavalry were their primary role. For antitank action, the Army Ground Forces commander, LTG Lesley J. McNair, who had once questioned the cost of funding an armored force, prescribed a tank destroyer force as a separate branch, but this concept

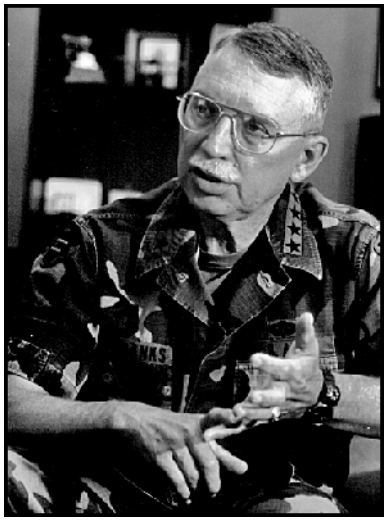
soon proved invalid.[55] Supported by the productivity of American industry and an abundance of weapons and manpower, the Army was able to meet the challenges of World War II. Though successful in defeating the German forces in Western Europe, it is questionable whether the Army's organizational arrangement would have been suitable for the tank-versus-tank environment that existed on the Eastern Front. There, the major engagements were initially driven by the *Wehrmacht*'s blitzkrieg and then by the Red Army's reintroduction of deep offensive operations and battle with tanks *en masse* providing the maneuver element for the combined arms mechanized force. The critical vehicle for executing deep offensive operations and the Red Army's version of an operational level of warfare was the medium tank, T34, which, through continued product improvement, was the final development of the Christie BT. Recall that in 1930, before General Summerall left office, the general staff, especially the G-1, General King, was suggesting the fast Christie for deep offensive operations as outlined in the G-3's "A Mechanized Force."

In the early 1980s, U.S. armed forces adopted the nonlinear AirLand Battle doctrine that depended on speed and depth, a concept worked out by a Vietnam-era generation of officers, led by General Donn Starry. The Abrams and Bradley weapons systems were critical to this doctrine. With the publication of the 1986 edition of *FM 100-5: Operations,* a stress on operational art began to emerge, calling for the capability of conducting an operational level of warfare. This was finally demonstrated with the remarkable success of LTG Frederick Franks' VII Corps, and its long left hook during Desert Storm. Thus, the realization of a mechanized operational level conceived by Chaffee and the Army general staff in 1928, was finally achieved in 1991. This delay was caused, in part, by the Army's elite. It was their failure during the interwar period to establish a prerequisite for operational art, an operational level of warfare with a combined arms mechanized force.

General George C. Marshall ordered the creation of the Armored Force despite the opposition of the chiefs of infantry and cavalry. He is seen here in his postwar role as Secretary of Defense.

The interwar period offers an interesting paradigm today, as the Army thinks about its future. Budget restraints and force reduction have always been a challenge, but this should not affect the revision of doctrine and warfighting concepts as long as inspiration, innovation, and intellectual growth are not hampered by service conservatism. History feeds the imagination; more awareness of it would be appropriate in a technologically driven Army. Unfortunately, the same kind of interwar branch parochialism still exists. If the Army is to embrace change with a mixed organization and a modular force, then it needs to go beyond the traditional service arms. One movement in the direction of change would be the creation of a combined arms officer designation for the Mounted Force rather then the traditional infantry, armor, and field artillery option. The success of Full Dimensional Operations and modernization objectives will depend on identifying the vulnerabilities and deficiencies of the past and present, and then making adjustments and corrections as the Army moves to information-age technology and Force XXI.

General Donn Starry, who developed the AirLand Battle concept, an approach to an operational level of war.



Then-LTG Frederick Franks, who led VII Corps during Desert Storm, demonstrated a new U.S. approach to operational art.

Notes

[1]J.F.C. Fuller, "Tactics and Mechanization," *Infantry Journal* (May 1927), pp. 457-65.

[2]Dr. James J. Schneider sees the first discriminators of an operational level as a perquisite for operational art during the Civil War. See Schneider, "Theoretical Implications of Operational Art" in Clayton R. Newell and Michael D. Krause, eds., *On Operational Art* (Washington: GPO, 1994), and "The Loose Marble—and the Origins of Operational Art," *Parameters* (March 1989).

[3]Board of Officers, Report on Tanks, "Tanks Types to be used by AEF," Appendix 6, Fuller, "The Tactical Employment of Tanks in 1918," 8 August 1917, G-3 Report, AEF-GHQ, Tank Corps Folder No. 1, Records of the American Expeditionary Forces (World War I), 1917-23, Record Group 120, National Archives (NA), p. 13. (Hereinafter cited by RG 120)

[4]Letter, Summerall to BG Samuel D. Rockenbach, Chief of Tank Corps, AEF France, 13 January 1919, "Tanks," File No. 42-1, United States Army Military History Institute (USAMHI), p. 1; "Summerall Paints War of the Future: It will conserve soldiers and use planes and tanks in attack," *New York Times,* 2 September 1927, p. 18; and R.H. Allen, "A Resume of Tank Development in the United States Army," Lecture, Army War College, 27 October 1927, USAMHI, pp. 1-2.

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COMBINED ARMS...

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[5]Nenninger, "The Development of American Armor 1917-1940. The Experimental Mechanized Force," *ARMOR* (May-June 1969), pp. 34-5.

[6]Dr. John T. Broom suggests Wilson's operations in Alabama and Georgia in 1865 formed the basis of Chaffee's vision. See Broom, "The Commander's Vision in Blue and Gray. The Roles of Adna R. Chaffee, Jr., James H. Wilson and the American Civil War in the Development of American Armor Doctrine," (Ph.D. dissertation, Union Institute, Cincinnati, Ohio, 1993), and Chaffee, "James Harrison Wilson," *Cavalry Journal* (June 1925), p. 200. Also see Schneider, "Theoretical Implications of Operational Art," pp. 18-9.

[7]Fuller, *Decisive Battles of the U.S.A.* (New York: Thomas Yoseloff, Inc., 1942), p. 398 fn 6; *Tanks in the Great War* (London: John Murray, 1920), p. 277-8; and *Memoirs of an Unconventional Soldier* (London: Ivor Nicholson and Watson, Ltd., 1936), p. 158. For additional comments on Parker's observation on the use of French and British tanks during World War I, see Report on Tanks, "Classes," AEF GHQ, 17 July 1917, G-3 Reports, RG 120, NA, pp. 1-7.

[8]Parker, "A Mechanized Force," 20 March 1928, AG 537-3 (3-20-28), Records of the Adjutant General's Office, RG 407, NA, pp. 1-4. (Hereinafter cited by RG 407) The study was vague on air support. It noted: "Appropriate squadrons of air corps may assist in overcoming enemy resistance, both ground and aerial." See p. 8.

During the interwar period, ground support attack aviation did not develop as realized late in World War I. This was due to neglect, technical problems, and the controversy over mission and air tactics. By 1933, attack aviation emphasis give way to high-speed, long range heavy bombers. Earlier, Brigadier General William Mitchell had questioned the future application of attack aircraft because he believed air power should focus on deep strategic operations against the enemy's supply concentrations and manufacturing areas. See Mitchell, *Winged Defense. The Development and Possibilities of Modern Air Power—Economic and Military* (New York: G.P. Putnam's Sons, 1925), pp. 188-9, and Thomas H. Greer, *The Development of Air Doctrine in the Army Air Arm 1917-1941* (1955 reprint, Washington: GPO, 1985), pp. 12, 66-7.

[9]Willey Howell, for the Chief of Infantry, Memorandum for the Assistant Chief of Staff, G-3, 26 March 1928, RG 407, NA, p. 3.

[10]"Report of Superior Board on Organization and Tactics," General Orders 68, AEF-GHQ, Chaumont, France, 19 April 1919, Command and General Staff College Library, Fort Leavenworth, Kansas, pp. 64-77. Two other boards were also established to deal with the lesson of the war. The AEF Lewis Board was convened also at Chaumont to study infantry tactical lessons. Rejecting position warfare, it noted that "the training of our infantry [for the future] should be by all means in open warfare and designed to foster the offensive spirit. It is the infantry which gives an army its character. Infantry normally requires strong support in the form of tanks, artillery, air services, supplies...." See "Proceedings of the Lewis Board 1919," Special Order 98, AEF-GHQ, Chaumont, 18 April 1919, *Ibid.*, pp. 3-7.

The Westervelt or Caliber Board was established by the War Department to study and make recommendations for future use of artillery. Of the three boards, it was the most foresighted. It declared that "mechanical transport is the prime mover of the future." The board recommended a self-propelled field artillery vehicle "capable of operating as a caterpillar over cross country terrain [and], at a moments notice, capable of conversion..." to a wheel mode. This idea of a tracked self-propelled artillery vehicle was the forerunner of the World War II M 7 105mm Howitzer Gun Motor Carriage, which served in the combined arms role with the armored divisions. However, in late 1922 and 1923, the Field Artillery Board that tested the Christie convertible and Holt gun carriages concluded they were "devoid of tactical usefulness for light guns and howitzers." See "Report of Board of Special Officers," Special Orders 289, War Department, 5 May 1918, Ordnance Technical Intelligence Files 334.3/1.17, Records of the Chief of Ordnance, RG 156, NA, pp. 24, 48. (Hereinafter cited by RG 156) Also see William I. Westervelt, "A Challenge to American Engineers," *Army Ordnance*, 1 (1920), pp. 59-64, and "Horses, Tractors and Self-Propelled Mounts," *Field Artillery Journal* (November-December 1923), pp. 491-2.

[11]*Historical Documents Relating to the Reorganization Plans of the War Department and to the Present National Defense Act*, 1 (Washington: GPO, 1927), pp. 365, 366, 404-5.

[12]Parker, "A Mechanized Unit," 2 April 1928, RG 407, NA, pp. 3-4.

[13]Proceedings of a Board of Officers, Subject: A Mechanized Force, 1 October 1928, AG 537.3/7884-B, Records of the Chief of Arms, RG 177, NA, pp. 4, 7-10, 15-6, 18, 35. (Hereinafter cited by RG 177) Unfortunately the Proceedings and the G-3 study paid no attention to tactical air other than observation and reconnaissance missions in support of a mechanized force.

[14]Chaffee, "The Status of the Mechanized Combat Organization," Lecture, Army War College, 19 September 1929, USAMHI, pp. 2, 10.

[15]*Ibid.*, p. 3.

[16]*Ibid.*, p. 10.

[17]Denison, *A History of Cavalry From the Earliest Times with Lessons for the Future* (2nd ed., London: Macmillan and Co., 1913), p. 447. The Cavalry School's bible, R.M.P. Preston, *The Desert Mounted Corps: An Account of Cavalry Operations in Palestine and Syria* (London: Constable and Company, Ltd., 1921) was rejected by Chaffee and Grow because it stated that the horse soldier would be more valuable in a future war.

[18]Memorandum for General Mosely, Subject: Organization—Mechanized Force, 27 April 1931, RG 177, NA, pp. 2-3, and Summerall, "New Developments in Warfare," *Infantry Journal* (February 1931), pp. 91-2.

[19]For a history on Christie's relationship with the army, see George F. Hofmann, "The Troubled History of the Christie Tank," *ARMY* (May 1986), pp. 54-65.

[20]Fuqua, "An analysis on the chronological history of progress toward the formation of a Mechanized Force in the United States Army and the purpose of the organization," 24 March 1931, RG 177, NA, pp. 4-5.

[21]John W. Killigrew, "The Impact of the Great Depression on the Army, 1929-1936," (Ph.D. dissertation, Indiana University, Bloomington, Ind., 1960), pp. IV: 13-9.

[22]U.S. Army, *1923 Field Service Regulations: Operations*, 1 (Washington: GPO, 1924), pp. 11, 13, 88-9. The *FSR* directed that one of the missions of aviation units was to attack hostile ground forces and their supporting units, including supply columns. No direction was given regarding a tactical effort against enemy tanks or in support of an infantry assault with breakthrough and accompanying tanks. See pp. 21-3.

[23]Chaffee, "Mechanized Cavalry," Lecture, Army War College, 19 September 1939, USAMHI, p. 1.

[24]Van Voorhis quoted in "Prelude to Armor" in *Armored Force Command and Center*, Study No. 27, Historical Section, Army Ground Forces, 1946, RG 407, NA, p. 5.

[25]Grow, "Ten Lean Years. From the Mechanized Force (1930) to the Armored Force (1940)," (Manuscript, Falls Church, Va., 1969), pp. 55-6. Copy on file at the Patton Museum of Cavalry and Armor, Fort Knox, Ky. An edited version of "Ten Lean Years" appeared in four series in *ARMOR* during 1987.

[26]U.S. Department of State, *Foreign Relations of the United States, 1932*, 1 (Washington: GPO, 1948), pp. 65-7, 70, 180-2.

[27]*Ibid.*, p. 65.

[28]Directive for the Future Development of Combat Cars and Tanks, 29 April 1933, Ordnance Office, O. O. 451.24/622, RG 156, NA, p. 1.

[29]Chaffee, "Report of Maneuvers," The Cavalry School, Fort Riley, Kan., 1 October 1934, RG 407, NA, p. 419.

[30]Report of Technical Committee, 24 March, and Proceedings of Board of Officers, 25 March 1934, HQ, 1st Cavalry. (Mechanized), Ordnance Office, O. O. 451.24/1789, RG 156, NA, pp. 1-5 and 1-4.

[31]Daniel Chase, "The Developmental Record in Combat Vehicles" in "History of the Ordnance Department in World War II. Research and Development," II (Unpublished manuscript, Aberdeen Proving Grounds, Md., 1947), Icks Collection, Patton Museum, pp. 12-21.

[32]George F. Hofmann, "More on Christie's Battles with Ordnance," *ARMOR* (September-October 1990), pp. 3, 44.

[33]Academic Division, "Report on Maneuvers," The Cavalry School, Fort Riley, Kan., 1 October 1934, RG 407, p. 419.

[34]Kromer, "The Cavalry Maneuvers, Fort Riley, Kan., May 1934," Lecture, Army War College, 22 June 1934, USAMHI, p. 27.

[35]Grow, "Ten Lean Years," p. 93.

[36]Jesse A. Ladd, "Report of Observations of Fort Riley Maneuvers (May 14 to May 26 1936)," RG 407, NA, pp. 1, 10.

[37]*Tables of Organization Mechanized Division (Tentative)* (Fort Leavenworth: The Command and General Staff School Press, 1936, pp. 3-24; *Tactical Employment of the Mechanized Division* (*ibid.*, 1937), pp. 3-4, 6, 23-4, 31; and Krueger Memo quoted in Grow, "Ten Lean Years," p. 88.

[38]A. Ryzhakov, *"K voprosy o stroitel'stve bronetankovykh voisk Krasnoi Armii v 30-e gody"* [Concerning the formation of the Red Army Armored Forces in the 1930s], 8 *Voenno-Istoricheskii Zhurnal* [Military History Journal] (August 1968), p. 107; E. A. Kosyrev, E. Orekhov and N.N. Fomin, *TANKI* [Tanks] (Moscow: Voenizdat [Military Publishing House], 1973), pp. 30-41; Fritz Heigl, *Tashenbuch der Tanks*, 2 (Munich: J.F. Lehmanns Verlag, 1935), p. 456; Subject: Armament and Equipment — organization (Mechanization); and Soviet Combat Vehicles, From: MA Riga, Latvia, 20 November 1935, Report No. 7915, File No. MID 2281-D-85, Records of the Military Intelligence Division, G-2, RG 165, NA, pp. 1-2. (Hereinafter cited by RG 165)

[39]"Horse-Drawn Artillery," *Army and Navy Register*, 9 October 1937, p. 4.

[40]Upton Birnie, Jr., "Obsolescence of Horse-Drawn Artillery," 16 May 1937, *Ibid.*, p. 11.

[41]"Report of Chief of Staff," *Ibid.*, 11 December 1937, pp. 1, 21.

[42]Craig, "Mechanization and Tanks," Special Statement in "General Craig's Hearing," *Ibid.*, 26 March 1938, p. 4. Earlier the *Register* predicted "the horse may come back." See 5 March 1938, p. 9.

[43]"Fuqua, U.S. Mainstay in Spain, is Returning," *New York Times*, 20 February 1938, p. 15; Subject: Employment of Troops in Domestic Disturbances. The Spanish Civil War, From: MA London, 25 January 1937, Report No. 38512, RG 165, NA, p. 1; Subject: Foreign Intervention in Spain, From: MA Valencia, 15 April 1937, Report No. 6519, *Ibid.*, pp. 2-3; Subject: Armament and Equipment — General. New Weapons in Spain — Value of Bombers and Tanks, From: MA London, 24 May 1937, Report No. 38776, *Ibid.*, p. 1; and Cavalry in the Foreign Press, "Lessons from the Spanish Civil War," *Cavalry Journal* (January-February 1938), p. 79.

[44]Subject: Polices governing mechanization, and tactical employment of mechanized units, 6 April 1938, AG 537.3 (4-6-38), RG 407, NA, pp. 1-4.

[45]"Tank Tactics," *Army and Navy Journal*, 4 June 1938, p. 884.

[46]Henry J. Reilly, "Proving Ground in Spain. Armament Trends as Revealed by the Spanish War," *Army Ordnance* (May-June 1939), pp. 333-6.

[47]"Prelude to Armor," p. 5.

[48]Grow, "Ten Lean Years," pp. 94, 113, 116.

[49]Herr, "The Cavalry," Lecture, Army War College, 19 September 1939, USAMHI, p. 13.

[50]Grow, "Ten Lean Years," p. 116.

[51]"Redesignation of the Armored Force" in *Armored Command and Center*, p. 108.

[52]*Ibid.*, and Herr, "Editorial Comment," *Cavalry Journal* (May-June 1946), p. 38.

[53]Herr and Edward S. Wallace, *The Story of the U.S. Cavalry* (Boston: Little, Brown and Company, 1953), pp. 248-61.

[54]Chaffee, "Statement of...," *Military Establishment Appropriations Bill, 1942*, 14 May 1941 (Washington: GPO, 1941), pp. 552-5.

[55]For an excellent study on the flawed antitank doctrine, see Christopher R. Gabel, *Seek, Strike, and Destroy: U.S. Army Tank Destroyer Doctrine in World War II, Leavenworth Paper No. 12* (Washington: GPO, September 1985).

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Comments Sought on Revisions to 71-1 FM and ARTEP

As a result of the end of the Cold War and various other factors, there have been many changes in Army doctrine, to include the revision of significant Army publications such as *FM 100-5 Operations*. *FM 71-1, The Tank and Mechanized Infantry Company Team* is under revision at this time, necessitating corresponding changes with *ARTEP 71-1-MTP Mission Training Plan for the Tank and Mechanized Infantry Company and Company Team*. The new editions of *FM 71-1* and *ARTEP 71-1-MTP* will incorporate the many lessons learned since 1988 at the Combat Training Centers (CTCs) and during recent conflicts.

Copies of the *FM 71-1* initial draft were sent out to all divisions and brigades, branch schools, and CTCs in December, and are available on the Internet on the Armor Center's Home Page. *ARTEP 71-1-MTP* will begin revision soon at the Armor Center. The Armor Center shares proponency with the Infantry School for these manuals, but has primary writing responsibility. We are looking for specific comments on the content of the *FM 71-1* (Initial Draft) and the 3 October 1988 edition of *ARTEP 71-1-MTP*, or suggestions for the future edition.

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