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MASS, MOBILITY, AND THE  
RED ARMY'S ROAD TO  
OPERATIONAL ART, 1918-1936

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MASS, MOBILITY, AND THE RED ARMY'S  
ROAD TO OPERATIONAL ART, 1918-1936

by

Dr. Jacob W. Kipp  
Soviet Army Studies Office  
U.S. Army Combined Arms Center  
Fort Leavenworth, Kansas

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✓ The first requirement for this paper is to deal with the problem of exactly what we mean by the three terms employed in the title. Mass in the Russian context has a double meaning. To some it unquestionably calls to mind the image of the Russian steamroller, which provided nightmares of Schlieffen and his planners in the decades before World War I. A simple process of extrapolation based upon the size of Russia's standing army, the number of conscripts being inducted in any year under the universal military service statute, and the Empire's total population provided a rough estimate of the total number of rifles and bayonets which the tsar could put into the field. The tsarist government's adoption of the Grand Program for rearmament in 1912 thus threatened to change the military balance on the continent.<sup>1</sup> Those forces would mobilize slowly, but, like a steamroller, their momentum would carry all before them. (Key words) ✓

Given the predominance of a short-war paradigm among European general staffs, this threat was real but not immediately compelling. The Germans assumed it could be answered by a rapid victory over France before such numbers could make their weight felt. It led German officers to influence their Austro-Hungarian counterparts to undertake initial offensive actions to reduce pressure upon the German covering forces protecting East Prussia and Silesia. The major modernization and expansion of Russian forces for which the "Great Program of 1912" provided did create a window of vulnerability which German officers assumed would open around 1917. This in its own way contributed to an enhanced sense of impending threat. At the same time, fears that Russian manpower would not affect German deployments against their own offensive led French generals and politicians to press for commitments to immediate offensive operations by the Russian Army, even before mobilization was completed. In this context the myth of the Russian steamroller played its own special role in shaping pre-war military policy and the maneuver phase of World War I.<sup>2</sup>

Ironically, the Russian steamroller embodied one of the central contradictions of military affairs in the decade prior to World War I, i. e. the confusion of mobilization and concentration with deployment and maneuver. Mobilization and concentration through the systematic exploitation of the national railway system had, since Moltke's victories, been interpreted to be the key to strategic success. War plans, which became the domain of the various European general staffs, were a matter of defining the operational line which would permit the most decisive concentration of troops against the enemy's center of gravity during the initial phase of war. The location and capacity of the railroad net, when combined with a rational system for its rapid exploitation for the movement of standing and reserve formations, assumed paramount importance, while the



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maneuver of army groups was confined within the operational lines dictated by the mobilization process and the rail net. This has been described in some recent scholarship as the "cult of the offensive" since it envisioned using speed of mobilization as a means of gaining the initiative and imposing one's will upon the adversary by conducting offensive operations.<sup>3</sup>

Mass or the massing of forces and means was one of the problems of industrial war and war planning which most troubled the Russian General Staff prior to World War I. These officers were well aware of the relative disadvantages under which the Empire labored in its efforts to mobilize, assemble and deploy its forces at the start of hostilities. The scale and density of the German and Austro-Hungarian rail nets favored their mobilization, not Russia's. Until two years before the outbreak of hostilities Russian war plans had, in fact, counted upon a covering force action in the initial period of war, while the mobilization was executed.<sup>4</sup>

Mass or more precisely the massing of forces and means [massirovanie sil i sredstv] refers to one of the principles of military art relating to the concentration of such forces and firepower upon the decisive sectors in order to secure a decisive superiority over the enemy and thereby achieve the goals of an operation or battle.<sup>5</sup> As Soviet authors assert, the massing of forces and means has long been a principle of military art. However, its application in practice has depended upon the level of development of the means of armed struggle and the talent of the military leader [polkovodets] to apply it in practice.

Mobility [podvizhnost'] traditionally has referred to the ability to move forces and means rapidly prior to combat and in battle. Speed of deployment and redeployment were said to be relative to the capabilities of an opponent and have been characterized as a force's maneuverability. General H. Leer, Russia's strategic theorist of the last part of the nineteenth century under the influence of Lloyd, Jomini and Napoleon, distinguished between strategic and tactical mobility. Strategic mobility took the form of the "march-maneuver," by which the commander sought to bring his forces to bear at the decisive point, in superior numbers at the decisive time. Successful march-maneuvers set the stage for the general engagement. Thus, maneuvers were only a means of preparing for the decisive battle and not its conduct.<sup>6</sup> The distinction between strategic and tactical mobility was absolute. Under the influence of a worldview which sought out universal, unchanging laws, Leer sought to fit maneuver into the pre-existing categories of military art. For him, Moltke's genius consisted of the application of those laws in new circumstances. Leer sought those elements which united Moltke and Napoleon, not what made them different sorts of commanders in different sorts of wars.

## THE RUSSIAN ARMY AND THE INDUSTRIALIZATION OF WAR

With the industrialization of war in the mid-nineteenth century the problems of mass and mobility became infinitely more complex. The new weapons extended the breadth and depth of the battlefield, increased the lethality of fire arms, played havoc with well-established concepts of combined arms, and made possible the more rapid mobilization of manpower for the conduct of the campaign. The traditional definitions of tactics as the direction of forces on the field of battle and strategy as the control of units as they maneuvered prior to engagement began to break down. This industrialization process had a number of salient features, which impacted upon all European armies, including that of tsarist Russia. First, it stimulated and guided a process of professionalization within the military, which emphasized technical mastery of the new means of destruction in a relatively narrow, applied form.<sup>7</sup> Second, it placed greater emphasis upon the problems of mobilization, concentration and deployment of forces. This, in turn, led to a fixation upon the problem of strategic war plans, which became identified with the most rational and expeditious means of getting men and materiel into the theater of military action.

Following the Crimean War and during the period when Prussian victories were reshaping military concepts, Russia embarked upon those reforms which would shape the way Russians would prepare for and go to war for the next half century. The Russian War Ministry executed its first mobilization and deployment plan in 1876-1877 in the Balkan and Caucasian theaters for the war against Turkey.<sup>8</sup> While Miliutin's reformed War Ministry and Obruchev's war plan proved equal to the task of getting troops into the theater and across the Danube, they did not provide effective guidance for the conduct of sustained operations, and the Russian campaign against the Turks bogged down north of the Balkan Mountains. This crisis drew attention to the problem of the command and control of ever larger formations under conditions where the field commander could not exercise direct supervision. Russian dilemmas south of the Danube in the summer of 1877 were in good measure a result of the inability of the theater commander and his staff to provide effective command and control of the various detachments. This, in turn, led to a situation where the massing of forces for the decisive thrust over the Balkan mountains and on to Constantinople could not be achieved.

For Russia the central lessons of the Russo-Turkish War were not easily assimilated. Partly this was the result of command politics, involving members of the imperial family, who did not want their reputations sullied.<sup>9</sup> On the other hand, it was also a result of a particular mindset among the army's most important strategic thinkers, especially General H. A. Leer (1829-1904) who taught strategy at the Nikolaevskaia Academy of the General

Staff. Leer believed in eternal principles and laws, interpreted Moltke as a mid-century Napoleon, and had a disdain for the recent unpleasantness in the Balkans. Neither his book on strategy, which dominated the field until his death, nor the guide to his lectures at the Academy, which was published in 1887, addressed the lessons of 1877-1878. Leer and his generation looked for didactic tools, rather than evolutionary concepts. In a time of radical change they sought a firm doctrine. The latter slowly ossified into dogma. Such was the critical judgment of A. A. Svechin, one of the military specialists [voenspetsy], who provided the young Red Army with its intellectual links to the tsarist army and its general staff.<sup>10</sup> Yet, Svechin, who was critical of narrow, technical specialists because they lost sight of the larger picture of war as a social phenomenon, did believe that Leer had provided an aiming point or director [bussol'] for Russian military theorists to address modern war. Leer emphasized and reemphasized the role and function of the operational line in determining the strategic direction of a campaign.

When Russia went to war in 1904 the problems of industrial war came back to haunt General Kuropatkin and his staff in Manchuria. Kuropatkin had been an excellent chief of staff to General Skobelev in the Balkans, had written extensively on that experience and had later campaigned effectively in Central Asia.<sup>11</sup> As Minister of War he had directed Russia's rearmament in the years before the outbreak of war and proved a talented logistician. Russia mobilized a half million men and sent them over five thousand miles by rail. Kuropatkin was also a devoted disciple of Leer. His initial deployments and the slow build up of his operations on the Mukden-Port Arthur axis were clear proof that he understood and was applying the concept of the operational line. What he could not do was provide effective command and control of his forces in the field. He spent the entire war in Manchuria seeking the single setpiece battle which would decide the campaign.

The Japanese, using the German mission-oriented tactics of Sigismund von Schlichting, seized the initiative, threatened his flanks and repeatedly forced him to abandon the field after a spirited but inconclusive defense. The Japanese commander, rather than waiting to deploy his forces and then enter into a general engagement, allowed his troops to engage the enemy from the march, thereby seizing the initiative and frustrating Kuropatkin's elaborate plans.<sup>12</sup> Russian reserves found themselves marching from one side of the battlefield to the other and either taking no decisive part in the action or being so exhausted by the process that they had lost their effectiveness. In Manchuria the battle field had assumed a breadth and depth, which was unthinkable only a half century before. At Mukden in 1905 three Russian armies, numbering 300,000 men, 1475 field guns, and 56 machine guns, faced five Japanese armies, numbering 270,000 men, 1063 guns, and about 200 machine guns. The fighting lasted

for six days and covered a front of 155 kms and a depth of 80 kms.<sup>13</sup>

Critics, including Svechin, concluded that the impact of technology on the scale of battle was in the process of working a radical change in the conduct of war. Russian officers began to speak of a new focal point in military art between strategy and tactics, war and battle. They sought a new terminology to give expression to this intermediary level of combat and employed engagement [srazhenie], to define the scale of combat above battle, operation [operatsiia], to describe the linking together of maneuver and combat into a series of "individual bounds of the attacker forward and the defender backward."<sup>14</sup> For Lieutenant Colonel A. Neznamov, the Russian defeats in the Far East had one basic cause: "We did not understand modern war."<sup>15</sup> Already in 1909 Neznamov had used a public lecture to identify the central changes in the art of military leadership, which were arising from the demands of mass, industrial war. Much of what Neznamov said was taken from German writings, especially Schlichting, but they were presented within a very Russian context. Neznamov redefined control [upravlenie] and initiative [pochin] so as to stress the role of the commander in imposing order from above in the form of his plan of action. Initiative among junior commanders became subject to be the limits imposed by their understanding of each of their unit's role in that plan and the subordination of their actions to its needs. Initiative no longer was shouting hurrah and leading the troops forward into battle but the application of professional skills to the persistent development of the attack in the necessary direction. Control embraced a feedback loop as well, for the commander could only develop his operational plan on the basis of timely intelligence and situation reports.<sup>16</sup> The available technical means of control and communication were not, however, equal to the demands of time and space, which the new weapons imposed.

This attention to the operation as the keystone of modern war stirred considerable controversy within Russian military circles and within the imperial government. On the one hand, critics were accused of presenting foreign, i. e. German or French, military theory without regard for Russian traditions. B. M. Shaposhnikov, then a student at the Academy of the General State Academy, reports in his memoirs that when a Russian translation of Schlichting's work became available in 1910 it was apparent that his professor, Lt. Colonel Neznamov, "had been bringing us German views on operational art."<sup>17</sup> Much later A. Svechin openly acknowledged the influence that Schlichting had had on his own concepts of strategy. A close reading of Svechin's presentation suggests that the German's ideas also influenced the views of I. I. Mikhnevich, the officer who succeeded him in the Chair of Strategy at the Academy.<sup>18</sup>



Some senior faculty members were particularly concerned that such foreign ideas would evolve into an undigested dogma, stifling critical thought and promoting stereotyped solutions among junior officers.<sup>19</sup> On the other hand, the competing conceptions quickly degenerated into intrigue and back-stabbing among the teaching staff of the General Staff Academy. B. A. Gerua, who taught there during the period, reports in his memoirs that he and his fellow "Young Turks" associated with the Francophile approach to the teaching of applied tactics which N. N. Golovin championed, were removed thanks to the denunciations carried to the suspicious V. A. Sukhomlinov, then the Minister of War. The "informer," according to Gerua, was Colonel M. D. Bonch-Bruevich, an intimate of Sukhomlinov's during the latter's tenure in the Kiev Military District as Chief of Staff.<sup>20</sup> At the same time Shaposhnikov, then a student at the Academy, complained about the total domination of French ideas and concepts at the institution. For that reason the war game [Kriegsspiel] did not figure in the educational program.<sup>21</sup> The subtext to much of this intrigue and animosity at the Academy was the hostility between the professional officers, drawn from the poor nobility and service estates of the empire and the higher aristocracy with its access to the Court, the Corps of Pages, and the Guard.

Colonel Neznamov's advocacy of a unified military doctrine to prepare the entire state for the conduct of modern war brought the young professor into conflict with Nicholas II, himself, who ordered the colonel to cease his writings on that topic.<sup>22</sup> Neznamov's views were in no way radical or subversive of the autocracy. As General Mikhnevich stated in his book on strategy, Russian military theorists had concluded that modern war required a centralized, coordinated effort which would mobilize the nation's total resources for war. The ideal state structure for such an effort was, according to Mikhnevich, "a powerful monarchy" which could maintain internal political unity and sustain the war effort to make maximum use of time and space in the conduct of the struggle.<sup>23</sup> The fumbling, disjointed, and ineffective national leadership provided by Nicholas II's government during the war years hardly fit what Mikhnevich or Neznamov had in mind.

These interwar debates did, however, have some impact upon the way in which Russia went to war in 1914. On the one hand, the critics were able to get the concept of a unified supreme headquarters [Stavka] accepted and were able to introduce the intermediary command instance of front to control the operations of a group of armies in a given sector of the theater. New Russian field regulations placed greater emphasis upon effective combined arms, the meeting engagement, and march-maneuver. In addition, thanks in part to changing diplomatic circumstances and bureaucratic politics, Russian war plans shifted from General Mikhnevich's covering force strategy to one of initial offensive action, a position in keeping with Colonel Neznamov's views on

the decisiveness of initial operations.<sup>24</sup> Yet, war plans "A" [Austro-Hungary] and "G" [Germany] as drafted did not provide for a decisive massing of forces and means against either opponent. When war came in the summer of 1914, after the false start of the proposed partial mobilization against Austro-Hungary, Russian forces were committed to immediate offensive operations against German forces in East Prussia and Austro-Hungarian forces in Galicia. General Zaionchkovskii noted that both operational plans were remarkable for their "diffusion and distribution of means." Nowhere did Russian forces achieve an overwhelming superiority, which would have brought about a decisive victory.<sup>25</sup> Thus, while the Academy of the General Staff had begun the work of studying the operational level of war, the results of its work were not in evidence in the initial maneuver phase of World War I. The Russian Army did not achieve the mass, which worried its adversaries and consoled its allies. Nor did it achieve the operational massing of forces, which the professors-genshtabisty had advocated. Zaionchkovskii argues that such did not occur because the General Staff Academy was cut off from the rest of the army. Its generals were professors in uniform, who were frequently incapable of command. On the other hand, the higher leadership of the state and the Army did not take its ideas seriously. New concepts were proposed in Russkii invalid and Voennyi sbornik, but they seemed to have little positive impact on either the Chiefs of the General Staff or the Ministers of War. General Sukhomlinov's memoirs are typical of the lack of attention paid to the Academy by senior officers.<sup>26</sup> The Academy was not the "brain" of the General Staff, and the General Staff hardly qualified as the "brain of the army."

In spite of the reformers' efforts, the Russian officer and NCO corps were hardly prepared for modern war. This was particularly true regarding the ability of Russian units and formations to maneuver with dispatch. Zainonchkovskii argued that Russia went to war in 1914 with "good regiments, average divisions and corps and poor armies and fronts . . . ." <sup>27</sup> To borrow from the language of A. A. Bogdanov on the science of control systems, the army's organism had a stronger skeleton than nervous system. Its training created good junior officers but not an effective staff system or high command structure.<sup>28</sup>

#### THE RED ARMY AND THE SEARCH FOR A SOVIET MILITARY ART

Intellectual speculation about the nature of operations took second place to the praxis of war for Russian officers over the next six years. World War and Civil War tore apart the fabric of Russian society and with it the old army. Russian officers did, however, built up a rich fund of experience in modern war, and some of these officers, especially those who joined the Red Army as military specialists [voenspetsy] had an opportunity to develop a theory of operational art on the basis of the prewar speculations and experience in WWI and the Civil War. This

opportunity was to some measure the product of the Bolsheviks' and Lenin's attitude towards the expertise of the professional soldier.<sup>29</sup> In part, it was a product of ideological commitment to a transcendent Russian nationalism of the type which moved General Brusilov to offer his services to the Soviet state during the Polish attack in the spring of 1920. Finally, it was partly a matter of luck.

At the start of World War I on the assumption that it would be a short war, the War Ministry had closed the Academy of the General Staff and mobilized its faculty and students. However, as the war dragged on and the need to train more general staff officers became evident, the Academy was reopened in late 1916. During the next turbulent year the Academy resumed its mission under the most difficult circumstances.<sup>30</sup> Following the October Revolution and the German advance on Pskov towards Petrgrad, the Commandant of the Academy ordered most of the faculty and students and the library moved to safety. In this case safety was Kazan, where most of those who went joined Kolchak. The minority of faculty and students moved to Moscow, where the Soviet government set about organizing its own Academy of the General Staff.<sup>31</sup> As I. A. Korotkov has acknowledged, the first steps taken by Soviet military science during the Civil War were carried out by voenspetsy associated with the tsarist general staff and its academy. The first Soviet professional military journal, Voennoe delo carried articles on military doctrine by Neznasnov, Svechin, and P. I. Izvest'ev--the last being the author of a major study on the significance of the estimate in the working out and conduct of military operations.<sup>32</sup>

What emerged during the years of the Civil War was an atmosphere most conducive to the development of operational art. On the one hand, the experience of Russian forces on the East Front during World War I never degenerated into the absolute linearity of positional warfare in the trenches of the Western Front. In part this was a result of the correlation of area, i. e. the very length of the front; density, i. e. relatively lower number of forces and means available along the front, making it difficult to create deeply echeloned defenses like those seen in the West; and the underdevelopment of the transportation and communication assets of the theater, which reduced the defender's relative advantage in responding to an attack. Thus, scale, density, and economic backwardness combined to create greater opportunities for maneuver. War in the East became a "Gummikrieg" [rezinovaia voina] as one captured Austrian officer described the autumn fighting in the Carpathians to his Russian interrogators at 8th Army Headquarters.<sup>33</sup> Operational maneuver persisted throughout three years of fighting without either side being able to gain the upper hand. Commanders on both sides developed the techniques necessary for a breakthrough but were unable to transform the breakthrough into a sustained drive, which would destroy the opposing force, overcome the enemy's reserves as they

redeployed to meet the threat, and bring about decisive victory. General Brusilov's Southwestern Front provided a model for such a breakthrough operation on the Russian side, one which Red Army staff officers would study in detail.<sup>34</sup> It is probably fair to describe the 1914-1917 struggle as a mobile war, in which neither side was able to execute decisive maneuver.

The disintegration of the old army and the mounting prospects of civil war and foreign intervention created a situation in which the newly established Soviet Republic had to set about the creation of its own armed forces. The RKKA or Workers and Peasants Red Army which emerged during the Civil War relied heavily upon tsarist military specialists for combat leadership, staffing, and training. By the end of the Civil War about one-third of all Red Army officers were voenspetsy and in the higher ranks the ratio was even greater. Thus, 82 percent of all infantry regiment commanders, 83 percent of all division and corps commanders, and 54 percent of all commanders of military districts were former tsarist officers.<sup>35</sup>

The forging of this union between the new Bolshevik government and the tsarist military specialists had not been easy. Lenin and his new Commissar of War L. D. Trotsky had faced criticism from Left-wing advocates of partisan warfare and critics who doubted the loyalty of the tsarist officers. In March 1918 Trotsky wrote:

We need a real armed force, constructed on the basis of military science. The active and systematic participation of the military specialists in all our work is therefore a matter of vital importance. The military specialists must have guaranteed to them the possibility of exerting their powers honestly and honorably in the matter of the creation of the army.<sup>36</sup>

Over the next six months the young Soviet state created a Main Staff, initiated the publication of Voennoe delo, formed a military-historical commission to study World War I and later the operations of the Civil War, and begun creation of an Academy of the General Staff.<sup>37</sup> Some voenspetsy did change sides, but the system of political commissars, the hostaging of military specialists' relatives in some cases, and the infusion of Party cadre into the military kept such defections within bounds. S. I. Gusev, an old Bolshevik with close ties to General Staff circles in the prewar period when he served as one of the editors of the Military Encyclopedia, noted the loyalty of the military specialists with whom he served at the front.<sup>38</sup>

In spite of reservations among Bolsheviks and even among their fellow officers, the genshtabisty proved an increasingly vital component in the Red Army's conduct of the Civil War. M. N. Tukhachevsky, a former tsarist officer and the dashing commander

of the 5th Army, had initial reservations about the genstabisty, whom he considered with the exception of the cohort of officers educated after 1908 to be totally unprepared for modern war or the special conditions of a civil war between social classes. Tukhachevsky called for the creation a "Communist command cadre."<sup>39</sup> Tukhachevsky himself, however, as the scale of the fighting and the quality of the opposing forces improved changed his tune. In explaining the setbacks which he suffered during the Western Front's May offensive against the "White Poles," he pointed to the lack of staff support under which he suffered at the division, army, and front levels.<sup>40</sup> By the end of the Civil War S. S. Kamenev, himself a genshtabist and the C-in-C of the Armed Forces of the Soviet Republic, described the new relationship as one of combination, in which the Communist and genshtabist joined to create the perfect command team.<sup>41</sup> One of the best examples of such a combination was that of M. V. Frunze, who went from political commissar to Red Army commander under the guidance of such genshtabisty as F. F. Novitsky, A. A. Baltiisky, and V. S. Lazarevich.<sup>42</sup>

On their side the Red genshtabisty understood the most pressing needs of the new workers and peasants army. A. Neznamov set the immediate goal of officer education in the Red Army at the level of Tolstoy's Captain Tushin, i. e. to give these officers the ability to act in combat. The Red Army did not need young Fredericks or Napoleons. The basic education of junior officers was to consist of teaching them uniform tactics so that they might be "good executors" of orders.<sup>43</sup> Many junior officers suffered from that independence of action, associated with the partizanshchina, out of which many Red Army units emerged. At the operational level Neznamov prized creativity.<sup>44</sup> But here the commander's plan and his orders had to limit the creativity of his subordinates. Neznamov's approach had three specific consequences which would shape the Red Army's officer corps. First, uniform tactics put a high premium on battle drills as a way of providing a general response to tactical developments. Second, it emphasized the dissemination of such uniform tactical views to all combat arms so that combined arms would come naturally at the tactical level. Third, it established a specific need to educate senior commanders in the conduct of operations. Creativity was to be most prized here.<sup>45</sup>

The marriage of the RKKA with the voenspetsy made for a most favorable environment for the development of operational art. The experience of the Civil War set in motion a process of evaluation. The historical orientation of Marxist ideology served as a powerful stimulus, while the Academy of the General Staff provided focus, military-historical perspective and professionally competent judgment of that distinctive experience. As is well known, the evaluation of that experience set the context for the political-ideological polemics between Frunze and Trotsky regarding the appropriateness of a "unified military

doctrine" for the Soviet state and the Red Army. On one side Trotsky argued that the Civil War experience had not created the bases for a Marxist military science and on the other Frunze argued that the nature of new state, the Red Army, and its combat experience in the Civil War had forged the preconditions for the formulation of a unified military doctrine, which he described as the concept "which determines the character of the construction of the country's armed forces, the methods of combat training for troops and command personnel." The ruling group's concept of its military system was in turn shaped by class relations, external threat, and the level of the nation's economic development.<sup>46</sup> Trotsky, like the prewar opponents of a unified military doctrine, worried that giving official sanction to a particular concept would invite the transformation of doctrine into an ossified dogma. He worried about efforts to universalize the validity of the combat experience derived from the Civil War.<sup>47</sup>

Clearly, the Soviet experience in the Civil War had been qualitatively different from that of World War I on either the Western or the Eastern fronts. If the Imperial Army had suffered from the economic backwardness of old Russia, enduring a shell crisis in 1915 which radically reduced its combat capabilities, the Red Army had to confront the utter disintegration of the national economy. Revolution, civil war, international boycott and foreign intervention combined to undermine national economic life. The regime's response, War Communism, was less social utopia and more a form of barrack socialism, in which all resources were organized to field a mass army equipped with the most basic instruments of industrial war--the rifle, machine gun, and field artillery. And even in the procurement of these vital weapons the level of production fell radically in comparison with what had been achieved by Russian industry during World War I. Thus, in 1920 the production of rifles was three times less than in 1917.<sup>48</sup> It was the Whites who, thanks to foreign assistance, were able to field in small quantities the latest weapons of war, especially the tank.<sup>49</sup> By the end of the Civil War the Soviet Republic put into the field a rag-tag force of 5.5 million men.

The Civil War was also noteworthy for a number of politico-geostrategic features, which had a profound impact on the nature of the struggle. First, it was in every sense a civil war in which neither side asked nor gave any quarter. The Russia over which the Reds, Whites and Greens struggled might be described as a few island-cities in a sea of peasant villages. The cities emptied as the links between town and countryside collapsed. Red Guard detachments swept through Tiutchev's "poor villages," seizing grain and recruiting soldiers. Red Terror and White Terror mounted in scale and intensity. At times it was difficult to distinguish between combatants and brigands. The Red and White armies were notoriously unstable with a persistent problem of desertion. In 1920 when he was preparing for the Western Front's offensive Tukhachevsky had to face the fact that the Commissariat

of War could not find many additional troops to support the operation, and so he instituted a campaign to extract 40,000 deserters from the region's villages and back into service. Within a month Western Front found that it had "extracted" 100,000 deserters, whose presence taxed the supply and training capacity of the Front.<sup>50</sup> Such reinforcements were none to stable in the attack and tended to vanish at the first sign of disaster.

The second reality of the Civil War was the fact that the Bolsheviks controlled the central heartlands around Moscow and managed to maintain an effective, if much reduced in scale, rail system, which permitted them to use their internal lines of communication to great effect. On the other hand, the White Armies fought on the periphery of Russia, in lands often inhabited by non-Russians who had no great interest in the revival of a centralized Russian state. The presence of the White Armies on the periphery, especially in south Russia, the Kuban, and Siberia, meant that operations were frequently conducted in "underdeveloped [malokul'turnye] theaters of military action." As R. Tsifer observed in 1928 the Civil War seemed to confirm the general rule that the more developed the theater of war, the more likely the emergence of positional forms of warfare and conversely the less developed the theater of war, the greater the opportunities for the employment of maneuver forms of combat.<sup>51</sup> This situation, when linked to the low density of forces, the ineffectiveness of logistical services, and the low combat stability, created conditions for a war of maneuver. It was not uncommon, as Tukhachevsky pointed out, to have each side launch operations that would sweep 1000 versts [600 miles] forward and another 1000 versts back.<sup>52</sup> The instability of the rear in military and political terms meant that a successful offensive, if a vigorous pursuit could be maintained, would often lead to the routing of the opponent and the disintegration of his political base.

Maneuver in this case took the form of a "ram" of forces directly at the enemy in the hope of disorganizing and demoralizing him. It would be fair to characterize this operational approach as an attempt to substitute mobility for maneuver, since the Red Army lacked either the staff assets or communication facilities to sustain the necessary command and control to carry out more complex maneuvers which might lead to the encirclement and destruction of enemy forces.<sup>53</sup> In Tukhachevsky's case this approach was linked with the concept of political subversion and class war as a combat multiplier, what he called "the revolution from without."<sup>54</sup>

One of the most conspicuous developments of the Civil War was the resurgence of cavalry as a combat arm. Russian cavalry had not distinguished itself particularly during World War I. Now under civil war conditions, cavalry recovered its place as the combat arm of a war of maneuver. The loyalty of the Don

Cossacks and the support of many senior cavalry commanders gave the Whites substantial initial advantages in the use of this arm. Trotsky's famous call, "Proletarians to horse!" initiated the process of creating a "red cavalry."<sup>55</sup> Soviet cavalry units were raised from the beginning of the war, however, greater attention was paid to creating troop cavalry detachments to provide the eyes and security screens for the newly formed infantry divisions. Army cavalry, i. e. cavalry units organized into independent brigades and divisions, were gradually formed into corps and later armies.<sup>56</sup>

The raid mounted by General K. K. Mamontov's cavalry in August-September 1919 provided the stimulus for the creation of the First Red Cavalry Army, Budennyi's legendary Konarmia. In order to take pressure off Denikin's forces, Mamontov's IV Don Cavalry Corps (7,500 sabres) undertook an independent raid deep into the rear of the Southern Front. The 36th and 40th divisions which held the 100 km section of the line through which Mamontov's corps passed were widely dispersed, and Mamontov used air reconnaissance to find a sector where his cavalry could slip through without serious opposition. Using his air reconnaissance to avoid contact with Bolshevik units, Mamontov struck deep into six gubernias, wrecking the railines and destroying military stores as they advanced.<sup>57</sup> The Revvoensovet of the Republic took this threat seriously and created an internal front under the command of M. M. Lashevich to deal with Mamontov's corps. On its return to Denikin's lines the corps' pace slowed under the weight of booty and Lashevich was able to concentrate Red forces against its strungout columns. Mamontov reached Denikin's lines but suffered serious losses on the retreat south from Kozlov to Voronezh.<sup>58</sup> The use of air assets to provide effective reconnaissance for large-scale cavalry raids was noted by the Red Army and became an important part of its own concept of strategic cavalry.<sup>59</sup>

In November the Revvoensovet ordered the creation of the Konarmia under the command of S. M. Budennyi, a former NCO in the tsarist army and then the commander of the I Cavalry Corps. Konarmia was initially composed of three cavalry divisions, an armour car battalion, an air group, and its own armored train. Later two other cavalry divisions were added and an independent cavalry brigade was also included.<sup>60</sup> The basic units of the Konarmia were its cavalry divisions, armed with rifles, sabres, revolvers, and hand grenades. Each division was also to have, according to its TO&E, 24 machine guns mounted on tachanki, but in practice the number was often two or three times higher. The most effective commanders used such guns to provide concentrated fire. Each division also had its own artillery, three batteries of light field guns and one battery of horse-howitzers (45mm). In offensive operations it also became common practice to assign a "mounted infantry" to each cavalry army. This force amounted to about one battalion for each cavalry division--a battalion being



between 1000-1300 men and 18 machine guns mounted on roughly 200 tachanki.<sup>61</sup>

Budennyi's Red Cavalry quickly became the stuff of legends. Issac Babel, who served as a political commissar with one of its units, immortalized its exploits in a cycle of short stories.<sup>62</sup> The legend later turned into official myth as Budennyi, Voroshilov and Stalin invented history to fit their personal cults of personality. In the decade after the Civil War it was still possible to give a reasonably objective evaluation to the contribution of the Konarmia and strategic cavalry in general to Soviet operations on the various fronts of the Civil War. Strategic cavalry repeatedly played the role of shock force striking deep into the enemy rear, disrupting his command and control, and demoralizing his forces. Among the most celebrated of these operations were those in the Ukraine in June-July 1920, when Konarmia was redeployed from the Caucasian front to the Southwestern Front to form the strike group for a drive to liberate Kiev and push the Poles out of the Ukraine. At the start of the operation, Budennyi's Konarmia had 18,000 sabres, 52 guns, 350 machine guns, five armored trains, an armored car detachment and 8 aircraft. The Polish 3rd Army was spread thin and had few effective reserves. Thus, one cavalry division was able to break through the lines and mount a raid on Zhitomir-Berdichev in the first week of June. The Polish commander responded by shortening his lines and giving up Kiev. The blows of the Konarmia were in this case combined with pressure from the Soviet 12th Army, and this created the impression that the Polish defenders faced the possibility of being surrounded and cut off.<sup>63</sup> Polish cavalry proved totally ineffective in maintaining contact with Budennyi's forces. Over the next month the Konarmia took part in heavy fighting around Rovno, taking that town by a flanking maneuver on July 4, losing it to a Polish counter-attack on July 9, and regaining it by direct assault the next day.

Budennyi's force engaged in 43 days of intensive combat without effective logistical support. Cavalry brigades which at the start of the campaign had numbered 1500 sabres were down to 500 or less by the end of the fighting. The fighting at Zhitomir and Rovno exemplifies the combined arms approach which typified Soviet employment of strategic cavalry. It also showed its limited ability to engage in sustained combat.<sup>64</sup> At the same time, the Zhitomir and Rovno operations exemplified the psychological impact of the strategic raiding force. Marshal Pilsudski credits Budennyi's Konarmia with an ability to create a powerful, irresistible fear in the deep rear. Its effect on the Polish war effort was like the opening of another, even more dangerous front within the country itself.<sup>65</sup>

The Red Cavalry's success at Rovno set the stage for one of the most controversial and frequently studied operations of the

Civil War, i. e. Marshal Tukhachevsky's general offensive of July-August 1920, in which his Western Front struck beyond the Vistula to threaten Warsaw. Pilsudski's counter-attack, coming at the very gates of Praga and resulting in the destruction of major Soviet formations pinned against the Polish-East Prussian border, became known as the "Miracle of Warsaw." More realistic Soviet assessments of the campaign doubted this implied connection between the Vistula and the Marne and said that the "miracle" was that the bedraggled, unfed, poorly armed, ragtag divisions of the Western Front got as far as they had. Tukhachevsky's general offensive took place without adequate reserves, effective command and control, and logistical support.<sup>66</sup> Believing his own theory about "revolution from without," he fell into the trap of assuming that the psychological weight of the advance would break the will of the Polish defense without having to destroy those forces in the field. His forces did manage to push the Polish defenders back over several natural defensive positions and the line of German emplacements along the Auta.<sup>67</sup> However, Pilsudski's counter-attack struck the over-extended forces of Western Front near Seidlice and drove a wedge between Tukhachevsky's 13th Army and the Mozyr Group. The attack threw Western Front back in disarray and trapped the RKKA's 4th Army against the East Prussian border.<sup>68</sup>

The geographic peculiarities of the theater, i. e. the fact that Belorussia and the Ukraine are dissected by the Pripiat Marshes, created two distinct axes of advance towards the Vistula. The existing Soviet command structure called for Tukhachevsky's Western (Belorussian) Front to direct the fighting north of Polesie and Egorov's Southwestern Front (Ukrainian) to direct the fighting south of Polesie. This military case of "dual power" combined to frustrate Soviet control of the Vistula Campaign. In addition to directing the fighting in the Kiev sector, Southwestern Front also had to combat Wrangel's army based in the south and cover the potential threat of Rumanian intervention. Memoir literature by the principle commanders on both sides addressed the issue of strategic-operational direction and control. Budennyi's Konarmia persisted in its attacks toward Lvov, even after Kamenev as C-in-C had ordered it and the 12th Army to regroup, join Western Front and undertake a drive towards Lublin to relieve pressure on Western Front. Southwestern Front Commander A. I. Egorov, in the words of Triandafillov, found himself caught trying to manage operations on two axes without staff support and did not feel "the beating pulse of the operation."<sup>69</sup> Thus, Tukhachevsky's Western Front lacked support from the south when its 4th, 15th and 3rd Armies tried to turn Warsaw from the north by crossing the Vistula between Modlin and Plock. Since Joseph Stalin served as the Political Commissar of the Konarmia, Budennyi's independence and insubordination became entangled in the political struggles following Lenin's death. Under Stalin's cult of personality the unpleasant truth about Lvov and Warsaw was covered up by blaming Trotsky, the Commissar

of War, for ordering the regrouping of forces to support a drive on Lublin.<sup>70</sup>

#### THE DEVELOPMENT OF OPERATIONAL ART

Before Stalin, Budennyi and Voroshilov were able to rewrite history to their own liking, a host of Soviet works in the 1920s addressed the Vistula Campaign in a critical and fruitful manner. Some of this was undoubtedly fueled by the usual postwar "battle of the memoirs." However, there was something more to the Soviet debates. Marshal Pilsudski caught the kernel of this difference when he observed that Tukhachevsky's published account of the campaign showed an "extraordinary penchant for the abstract" and noted that the underlying theme of the work was "an attempt at the solution of the problem of handling great masses on a large scale."<sup>71</sup> The Soviet military authors, including Tukhachevsky's defenders and critics, seem to have taken seriously Neznamov's assertion regarding the role of historical criticism in the development of military theory.

It would seem that nothing could be higher than combat experience in war itself, and yet historical experience shows us that without the criticism of science, without the book, it, too, is of no use.<sup>72</sup>

The emphasis was on the development of military theory and A. Verkhovsky, a voenspets and professor of Tactics at the Military Academy, seems close to the truth when he describes the internal struggle among military intellectuals as a contest between a right and left flanks for support. The former wanted to take the realities of World War I and the Civil War and codify them into military doctrine while the latter sought to envision a future "class war" which negated the more mundane concerns of the military art.<sup>73</sup> The debate and a very sharp, almost brutal criticism, which did not spare personal feelings, seem to have kept these two flanks in a dynamic balance, creating the necessary conditions for the emergence of a distinctive Soviet operational art, which addressed the conduct of initial operations in a future war.

The emergence of operational art as a specific topic of study within the Red Army coincided with the end of the Civil War, the introduction of the New Economic Policy at home, and the recognition of a temporary restabilization of capitalist system. The Party's leadership and the military had to deal with the pressing problem of postwar demobilization and the creation of a military system, which would provide for standing cadre forces and mobilization potential. By the mid-1920's and simultaneous with Lenin's death and Trotsky's removal from the post of Commissar of War, these reforms were enacted under the Party's new collective leadership. Frunze was entrusted with the task of putting these measures into practice. For him, as for the

Party leadership, the nature of the threat confronting the Soviet state was quite clear. As opposed to Trotsky, who had told the Red Army's leadership that it should use the postwar period to master mundane matters of troop leadership and leave strategy to the Party, Frunze had explicitly defined the threat posed by capitalist encirclement as one demanding constant vigilance and military preparations:

Between our proletarian state and the rest of the bourgeois world there can only be one condition -- that of a long, persistent, desperate war to the death: a war which demands colossal tenacity, steadfastness, inflexibility, and a unity of will. . . . The state of open warfare may give way to some sort of contractual relationship which permits, up to a definite level, the peaceful coexistence of the warring sides. These contractual forms do not change the fundamental character of these relations. . . . The common, parallel existence of our proletarian Soviet state with the states of the bourgeois world for a protracted period is impossible.<sup>74</sup>

This threat created a need to study future war [budushchaia voina], not as an abstract proposition but as a foreseeable contingency. In the 1920s the study of past campaigns, current trends in weapons development, and force structure requirements coalesced around the concept of operational art [operativnoe iskusstvo].

The linchpins in this development were Svechin, Frunze and Tukhachevsky, who promoted the development of Military Scientific Societies and identified a group of talented officers, some of whom were destined to become the first Red genshtabisty. Many of these officers entered the newly renamed Military Academy during Tukhachevsky's short tenure as its commandant in 1921-1922. Others came later, when Frunze took over as Commissar of War. Two of Red genshtabisty were N. E. Varfolomeev, and V. K. Triandafillov. For the first few years of the academy, the problem of how to conceptualize warfare remained unresolved. Its academic program reflected the conventional divisions of strategy and tactics, but new terms were being used to describe the more complex combat of World War I and the Civil War. "Grand tactics" and "lower strategy" were employed but without rigor or definition. Only in 1923-1924 did Svechin tackle the problem by proposing an intermediary category, which he called operational art. This he defined as the "totality of maneuvers and battles in a given part of a theater of military action directed toward the achievement of the common goal, set as final in the given period of the campaign."<sup>75</sup> These lectures served as the basis for Svechin's Strategiia, which appeared in 1926. Here Svechin for the first time wrote about the nature of "operational art" and its relationship to strategy and tactics.<sup>76</sup> As Svechin formulated this relation:

Then, battle is the means of the operation. Tactics are the material of operational art. The operation is the means of strategy, and operational art is the material of strategy. This is the essence of the three-part formula given above.<sup>77</sup>

Svechin's own work then turned towards the study of the problem of national preparation for war. Here he emphasized the need to address the political and economic preparation of the nation for war. His formulation of two competing strategic postures, i. e. annihilation [sokrushenie] and attrition [izmor], raised a host of issues regarding the relationship between operational art and the paradigm of future war. Drawing up the work of Delbrueck, Svechin was critical of the German General Staff's one-sided emphasis upon the conduct of decisive operations in the initial period of war.<sup>78</sup> Svechin saw the seeds of disaster in such short-war illusions. He stressed the need to prepare for a long war, given the geostrategic and political situation confronting the USSR. Here Svechin emphasized political and economic objectives for strategy at the expense of the enemy's armed forces as the center of gravity. This focus led Svechin and others into a consideration of the problem of the relationship between the civilian and military leadership in the conduct of war and preparations for war. Svechin criticized a narrow perception of military logistics and emphasized the need for a unification of front and rear through the planned mobilization of the entire "state rear" by which he meant the national economy to the purposes of supporting front operations.<sup>79</sup> Using Conrad von Hotzendorf's memoirs as vehicle to explore the role of the general staff in modern war and preparations for war, the voenspets-genshtabist Boris Mikhailovich Shaposhnikov characterized that role as "the brain of the army."<sup>80</sup>

The problem of studying operational art was left to a newly established "chair" at the Military Academy, named "Conduct of the operation." This chair, which was founded in 1924, immediately took on the problem of studying the conduct of operations during World War I and the Civil War. Special attention was devoted to the summer campaign of 1920 against Poland. Leadership of the new chair went to N. E. Varfolomeev, who had fought with Western Front during the Vistula Operation and served as chief reporter on the large-scale maneuvers which Tukhachevsky conducted with that Front in 1922.<sup>81</sup>

Following the Civil War Varfolomeev had turned his attention to the difficult problem of conducting deep pursuit so as to bring about the conditions for the destruction of the enemy. The focus of his attention was the advance on Warsaw and the failure of Western Front to turn that operation into a decisive victory. Varfolomeev emphasized the need to organize a relentless pursuit by advance guards, the use of army cavalry to turn the enemy's

flanks and preclude the organization of a defense on a favorable line of terrain, the sutainment of close contact between the advance guard and main forces to allow for the timely commitment of fresh forces to the attack, and the maintainance of a viable logistical system in support of the advance. Varfolomeev still spoke in terms of pursuit to "the field of the decisive engagement," but his attention was focused on the utilization of reserves to maintain the pace of the pursuit without risking pauses in the advance, which would permit the enemy to recover.<sup>82</sup>

Varfolomeev's arrival at the Military Academy in 1924 coincided with Tukhachevsky's return to Moscow as Deputy Chief of Staff of the RKKA. Over the next three years, 1924-1927, the chair addressed the problem of how to conduct operations of annihilation to bring about the total destruction of enemy forces in the field. Varfolomeev summed this up in two propositions. First, there was the need to combine breakthrough and deep pursuit so as to destroy the enemy forces throughout their entire depth. Under conditions of modern warfare this could not be achieved in a single operation but required successive, deep operations, "the zigzags of a whole series of operations successively developed one upon the other, logically connected and, linked together by the common final objective." Second, success in such successive, deep operations depended funamentally on the "successful struggle against the consequences of the attendant operational exhaustion." Logisitics, the unity of front and rear as an organization problem, thus assumed critical importance as an aspect of operational art. In both teaching and research the faculty sought means of defining the operational norms which would set the parameters of such deep operations.<sup>83</sup>

Varfolomeev found the roots of the theory of deep, successive operations in Tukhachevsky's attempt to use the techniques of class war and civil war in an "external war" against a much better prepared adversary. He saw the failure of the Vistula operation as rooted in Tukhachevsky's over-optimistic evaluation of the potential for "intensification of the revolution" within Poland by means of "a revolution from without" [revoliutsiia izvne] and the mounting exhaustion with the Red Army, brought on by attrition and the total disorganization of the rear services during the advance.<sup>84</sup> Prudent operational plans, which took into account the need to breakthrough and penetrate the enemy's defenses throughout their depth sobered revolutionary elan. In the 1930s he turned his attention to the employment of shock armies in the offensive and the problem of overcoming enemy operational reserves as they joined the engagement. In these studies he focused upon the German and Allied offensives of 1918, especially the Anglo-French offensive at Amien in August 1918. The Amien Operation was noteworthy for both the achievement of surprise and the mass employment of armor and aviation to achieve a breakthrough.<sup>85</sup>

The logistical parameters of such deep, successive operations to a great extent depended upon the visions of the Soviet Union as a political economy and the nature of the external threat. In the hands of Svechin and those like him who emphasized the need to prepare for a long war, the maintenance of the workers and peasant alliance became the central reality of the Soviet Union's domestic mobilization base. Such a view assumed that Lenin's New Economic Policy with its emphasis upon agriculture's recovery would be the long term policy of the USSR. At the same time, such authors cast the nature of the external threat in terms of the states immediately bordering the USSR. Such authors could not ignore postwar developments in military technology, but they concluded that Europe was, in fact, divided into two parts, two military-technical systems. The West was industrial, and the potential for a mechanization of warfare was there to be seen. Eastern Europe, which included the USSR, was dominated by a peasant economy and a "peasant rear" [krest'ianskii tyl].<sup>86</sup>

One of the most important advocates of an operational art adapted to the realities of a future war, fought on the basis of a peasant rear was V. K. Triandafillov. Triandafillov had served in the tsarist army during World War I, joined the Red Army in 1918, where he commanded a battalion, regiment and brigade. He fought on the Ural Front against Dutov and on the South and Southwest Fronts against Denikin and Wrangel. Joining the Party in 1919, he was a natural choice for education as a Red genshtabist posted to the Academy in the same year. During his four years with the Academy he divided his time between theory and praxis. As a brigade commander with the 51st Rifle Division, one of the best in the Red Army, he took an active part in Frunze's successful offensive at Perekop Isthmus against Wrangel. At the same time, Triandafillov began writing military analysis of operations from the Civil War as his part in the activities of the Academy's Military Scientific Society. These included essays on Southern Front's offensive against Denikin and the Perekop Offensive against Wrangel.<sup>87</sup> He also took part in the suppression of the Tambov Insurrection in 1921, where he served under Tukhachevsky. Following his graduation from the Military Academy in 1923, Frunze chose his former subaltern to join the Main Staff of the RKKA, where he took over as Chief of the Operations Section in 1924. From there he moved on to command a rifle corps and then returned to Moscow as Deputy Chief of Staff for RKKA in 1928.

Charged with putting operational art in to practice, Triandafillov authored what was the chief work on the nature of the operations of modern armies. The work laid out in detail the military context of the theory of successive, deep operations. Triandafillov called attention to the process of technological development which was making possible the "machinization" of warfare, but noted its limited impact upon the economically

backward regions of Eastern Europe with their peasant rear. New automatic weapons, armor, aviation and gas would affect such a war but would not become decisive. He also treated the problem of manpower mobilization and the reality of mass war quickly becoming a war of conscripts and reservists. This brought him to the problem of addressing the means of achieving breakthrough and sustaining pursuit in successive deep operations. Here he drew upon Frunze's use of shock armies for the breakthrough and the use of echeloned forces to facilitate exploitation and pursuit. Much of the success in such operations turned upon two related problems: the organization of an effective command and control system to coordinate the operations of several fronts and the establishment of realistic logistical norms in keeping with the geographic-economic realities of the theater of military action.<sup>88</sup>

As Deputy Chief of Staff to the RKKA Triandafillov's views reflected some basic assumptions regarding the sort of war the Red Army would fight in the future. The Field Regulations of 1929 in its treatment of the offensive touched on many of the same themes developed by Triandafillov in greater depth.<sup>89</sup> While the new regulations did provide for successive, deep operations based upon a combined-arms offensive, the armies described by Triandafillov and the regulations were modernized versions of the Red Army from the Civil War. This vision was in keeping with what Svechin had described as the political-military context of Soviet strategy.

#### THE MECHANIZATION OF DEEP OPERATIONS

There were, however, other advocates of operational art, who argued that technological developments and the nature of the external threat made it absolutely essential to carry out a total mechanization of the Red Army and Soviet rear. One of the leading proponents of such views was M. V. Tukhachevsky, who was Triandafillov's immediate boss as Chief of the RKKA Staff from 1925 to 1928. Tukhachevsky argued that what was required to make the new operational art into a sound strategic posture was nothing less than "complete militarization" of the national economy to provide the new instruments of mechanized warfare. Committed to an operational art which would end in the total destruction of the enemy, Tukhachevsky crossed pens with Svechin, whom he accused of being an advocate of attrition.<sup>90</sup> According to G. S. Isserson, one of his closest collaborators in the 1930s, Tukhachevsky came forward with a master plan for the mechanization of the Red Army in December 1927, only to have it turned down by the party leadership under Stalin.<sup>91</sup> Several years later, in 1930 Tukhachevsky's views won favor, when Stalin broke with Bukharin's thesis on the stabilization of capitalism and began to associate the Depression with a rising threat of war to the Soviet Union. This threat the Party leadership openly used to justify the brutal processes of industrialization and forced



collectivization by now linking them with an improvement in the level of national defense.

During the intervening two years Tukhachevsky had left the RKKA Staff to take over as Commander of Leningrad military district, where he conducted a number of experiments relating to mechanization. These experiments came at a time when motorization versus mechanization emerged in Western Europe as alternative solutions to the problem of integrating the internal combustion engine into the armed forces. The former implied grafting automobile transport on to existing combat arms, while the latter called for the creation of "self-propelled combat means" with an emphasis upon armor, especially, tanks, armor cars, and self-propelled artillery. Soviet officers who followed developments in France, England, and the United States noted that all armies were exploring both paths but that, owing to strategic, operational, tactical, political and financial circumstances, the French Army was more sympathetic towards motorization and the British towards mechanization.<sup>92</sup> Tukhachevsky in his comments on the training exercises of the troops of the Leningrad Military District emphasized the need to increase their mobility as a combined-arms force, which could engage in a multi-echeloned offensive. His interest in the development of tank, aviation, and airborne forces during this period marked him as an advocate of mechanization.<sup>93</sup>

At the XVI Party Congress and IX Congress of the Komsomol in 1930-1931 K. E. Voroshilov, the Commissar of War and Stalin's closest collaborator, spoke out regarding the mechanization of warfare as bringing about a qualitative change in the nature of future wars. But in Voroshilov's case mechanization would in the future bring about the possibility of a short, bloodless war, carried quickly on to the territory of the attacking enemy.<sup>94</sup> Such views emerged at a time when it appeared that world capitalism had gone back into a profound political-economic crisis which was creating greater instability and increased risks of war. This, in turn, was creating the bases for the formation of a broad anti-Soviet alliance, which threatened war on every frontier. At home the strains of the first five-year plan were also underscoring the possibilities of an alliance between the external threat and the internal enemy, i. e. the forces of counter-revolution.

In 1930 Tukhachevsky came forward with his own powerful arguments for a mass, mechanized army as the means to execute the new operational art. He used a number of forms to present this argument. One was the Foreword to the Russian translation of Hans Delbrueck's Geschichte der Kriegkunst in Rahmen der politischen Geschichte, which provided a forum in which to attack Svechin's concept of attrition as the appropriate strategy for the USSR.<sup>95</sup> This work was conspicuous for the tenor of the political-ideological assault mounted by Tukhachevsky against the old

genshtabist. In a time of heightened suspicions towards all specialists as wreckers, Tukhachevsky called his colleague an idealist in Marxist dress.

Worse attacks followed within the confines of the Section for the Study of the Problems of War in the Communist Academy. Organized in 1929 as part of an effort to infuse Marxism-Leninism into military science. Within the Section, as within the Communist Academy, the notion of a struggle between an old, bourgeois past and a young, dynamic Communist future were given free reign. There, Tukhachevsky, armed with the appropriate citations from Stalin and Voroshilov, attacked Professors Svechin and Verkhovsky because their writings were infested with bourgeois ideology. In Svechin's case the fault was that he did not believe in the possibility of decisive operations but defended the idea of limited war. Verkhovsky was charged with favoring a professional army at the expense of mass. Tukhachevsky spoke positively of Triandafillov's book, but noted some shortcomings.<sup>96</sup> His line of criticism fit that offered in a review of Triandafillov's book, published in the spring of 1930, in which the reviewer took the author to task for talking of a peasant rear without noting the possibility of transforming that rear through industrialization. That industrialization, the reviewer pointed out, would make it possible to speed up the massing of forces and their maneuver, creating opportunities for decisive operations, if the political, i. e. revolutionary, possibilities were exploited.<sup>97</sup>

In 1931 Tukhachevsky became Deputy Commissar of Military and Naval Affairs, a member of the Revvoensovet, and Director of Armaments for the RKKA. Over the next six years he directed the mechanization of the Red Army, laying the foundations for the creation of mass, mechanized force designed to conduct successive, deep operations in a war of annihilation. The Stalinist industrialization did make the USSR into a major industrial power with the capacity to mechanize its armed forces to an extent undreamed of by Triandafillov. During that same period the nature of the military threat confronting the USSR became more complex and serious. To his credit Tukhachevsky never fell into the trap of assuming that mechanization would negate mass war. He was an informed critic of "Blitzkrieg theory," and his criticism of the works of Fuller, Liddell-Hart and others deserves serious attention. They contain a good clue about the emerging Soviet way of war. In 1931 he wrote regarding the professional mechanized army:

Let's imagine a war between Great Britain and the USA, a war, for example, which breaks out along the Canadian border. Both armies are mechanized, but the English have, let's say Fuller's cadres of 18 divisions, and the US Army has 180 divisions. The first has 5,000 tanks and 3,000 aircraft, but the second has 50,000 tanks and 30,000

planes. The small English Army would be simply crushed. Is it not already clear that talk about small, but mobile, mechanized armies in major wars is a cock-and-bull story. Only frivolous people can take them seriously.<sup>98</sup>

Thus, in Tukhachevsky Soviet military theory, building upon the work of the tsarist general staff and the combat experience of four industrial wars, i. e. Russo-Turkish, Russo-Japanese, World War I, and the Civil War, focused on the mechanization of the mass army as the means to conduct decisive operations in a total war. The Vremennyy polevoi ustav RKKA 1936 with its emphasis upon the "decisive offensive on the main axis, completed by relentless pursuit" as the only means to bring about the total destruction of the enemy's men and equipment underscored Tukhachevsky's twin themes of combined arms and mechanized forces. Tanks were to be used in mass, and mechanized formations, composed of tank, motorized infantry, and self-propelled guns were expected to strike deep into the enemy's rear, using their mobility to outflank and encircle enemy forces. Aviation formations, apart from independent air operations, were expected to act in close operational-tactical cooperation with combined arms formations. At the same time airborne units were to be used to disorganize enemy command and control and rear services.<sup>99</sup>

In one of his last publications Tukhachevsky warned that the Red Army should not confuse mastery of theory with command of practice. Discussing the basic questions of combat covered in the new Field Regulations, he warned against the tendency to transform a healthy doctrine into a sterile dogma and noted that technological changes were qualitatively reshaping the combined-arms concept. The new content of mechanized combined-arms operations set the 1936 regulations apart from those of 1929. The employment of mechanized forces, constructed around "long-range tanks, mounted infantry, artillery, aviation and airborne forces made it possible to win the "battle for the flanks" through the application of maneuver. Rapid mobility was the only means to exploit the temporary appearance of an open flank in the enemy's battle order. "Therefore the struggle for the flanks demand rapid actions, surprise, lightning blows."<sup>100</sup>

Tukhachevsky appreciated the threat which the Wehrmacht posed to the Soviet Union and warned of the dangers of Blitzkrieg and surprise attack by its Panzers and the Luftwaffe.<sup>101</sup> The purge of the military and the experience of combat in the Spanish Civil War called the theory of deep, successive operations into question on both political-ideological and military-operational grounds. The organic development of operational art stopped for almost three years. One might well wonder how much that hiatus affected the covering force engagements at the start of Operation Barbarossa in the Belorussian and Ukrainian theater of military operations when the Wehrmacht won Tukhachevsky's "struggle for the flanks."<sup>102</sup>

During the succeeding operations attrition imposed major changes in both sides' force postures, especially their mechanized forces. The autumn fighting on the approaches to Moscow resembled more the conditions described in Triandafillov's "peasant rear" than they did to Tukhachevsky's. Indeed, Soviet operational art during the winter counter-offensive before Moscow which relied so heavily upon infantry and cavalry, in the absence of tank, motorized infantry and aviation, fit Triandafillov's model of successive operations. Later Soviet offensives did try to put into practice the principles of operational art outlined in the 1936 Field Regulations, which bore Tukhachevsky's imprint. Gradually through a process of trial and error Soviet commanders achieved the skills necessary to handle the massive, mechanized forces that the Marshal championed.

None of the architects survived to witness those events. Triandafillov died in an airplane crash in 1931. Tukhachevsky, along with much of the Soviet military elite, died at the hands of Stalin's terror, labeled a traitor and enemy of the people. Svechin, who was hounded in the early 1930's as a class enemy, outlasted his critic by less than a year, dying in 1938. Varfolomeev was arrested by the NKVD and imprisoned where he died in 1941. What followed was a time when the Red Army had a theory, whose authors it could not acknowledge, and a mythical past which precluded the sort of criticism necessary for the perfection of theory. The shock of real war in Manchuria, Poland, Finland, and France cracked the myth, allowing needed reforms prior to the German invasion. These measures were too little in practical accomplishments, too late in initiation, and too radical in scale either to undue the damage of the purges or to offset German advantages in command and control and operational surprise. Painfully the young commanders of the Red Army gained the talents necessary to put into practice the deep, successive operations for which their field regulations called. Gradually Soviet society forged the new weapons necessary to conduct such operations. Step-by-step the Red Army adjusted its force structure to provide the combined-arms armies, tank armies, air armies, and mechanized corps to mount such operations. In the final phase of the war Soviet operations achieved what prewar theory had promised.<sup>103</sup> Only after Stalin's death could historians begin serious study of the roots of these successes during this dynamic and tragic period in Russian and Soviet military history and thus grasp the significance of operational art.<sup>104</sup>

#### Endnotes

1. Jack Snyder, The Ideology of the Offensive: Military Decision Making and the Disasters of 1914. (Ithaca: Cornell University Press, 1985), pp.
2. L. L. Farrar, Jr., The Short-War Illusion: German Policy, Strategy & Domestic Affairs, August-December 1914. (Santa Barbara: ABC-Clio, 1973), pp. 3-18.
3. Stephen Van Evera, "The Cult of the Offensive and the Origins of the First World War," in: Stephen E. Miller, ed., Military Strategy and the Origins of the First World War (Princeton: Princeton University Press, 1985), pp. 58-107.
4. I. I. Rostunov, Russkii front pervoi mirovoi voiny (Moscow: voenizdat, 1976), pp. 60-67.
5. Sovetskaia voennaia entsiklopediia. (Moscow: Voenizdat, 1976-1980) V, pp. 179-180.
6. G. Leer, Opyt' kritiko-istoricheskago issledovaniia zakonov iskusstva vedeniia voiny (polozhitel'naia strategiiia (St. Petersburg: Tipografiia tovarishchestva "Obshchestvennaia Pol'za," 1871), pp. 154-202. For an excellent critique of Leer's strategic theory and worldview see: A. Svechin, ed., Strategiia v trudakh voennykh klassikov (Moscow: Gosvoenizdat, 1926), II, pp. 272-275. Svechin praised Sigismund von Schlichting's work because, as opposed to Leer, the German officer began with Moltke's practice and sought to discover what made the Prussian's applied strategy different from that of Napoleon. To borrow from the work of Thomas Kuhn on scientific revolutions, Leer belonged to an era when the dominant paradigm of military art was beyond question. When, however, military praxis began to present anomalies, with which the dominant paradigm could not deal, Leer tended to exclude the anomalies, while Schlichting sought to make them the heart of a new paradigm. For Kuhn's views see: Thomas S. Kuhn, The Structure of Scientific Revolutions (Chicago, 1970) 2nd edition, pp. 43-76.
7. William C. Fuller, Jr., Civil-Military Conflict in Imperial Russia, 1881-1914 (Princeton: Princeton University Press, 1985), pp. 3-46; and Natituahu Nayzel, Generals and Revolutionaries: The Russian General Staff during the Revolution. a Study in the Transformation of a Military Elite in: Studien zur Militaergeschichte, Militaerwissenschaft und Konfliktforschung XIX, (Osnabruck, 1979), pp. 38 ff.
8. I. I. Rostunov et al., Russko-Turetskaia voina, 1877-1878. (Moscow: Voenizdat, 1977), pp. 54-59. The best work still on Miliutin's reforms of the War Ministry remains: P. A. Zaionchkovsky, Voennye reformy 1860-1870 godov v Rossii (Moscow:

Moskovskii universitet, 1951).

9. P. A. Zaionchkovsky, Samoderzhavie i russkaia armia na rubezhe XIX-XX stoletii (Moscow: Nauka, 197 ), p. 322.

10. A. A. Svechin, ed., Strategiia v trudakh voennykh klassikov. (Moscow: Gosvoenizdat, 1926), II, pp. 272-273.

11. A. N. Kuropatkin, Deistviia otriadov generala Skobeleva v rusko-turetskuiu voinu 1877-1878 godov (St. Petersburg: Voennaia tipografiia, 1885), II, 674-678.

12. A. Svechin, "Strategicheskii ocherk Russko-Iaponskoi voiny ot nachala kampanii do srazheniia pod Liaonianom vkluchitel'no," Voennyi sbornik, No. 4, (April 1907), pp. 47-69.

13. Voennaia entsiklopediia (St. Petersburg: I. D. Sytin, 1914), XIV, pp. 474 ff.

14. A. Neznamov, Sovremennaia voina: Deistviia polevoi armii 2nd edition, (Moscow: 1912), pp. 13-17.

15. Ibid., p. vi.

16. A. Neznamov, Konspekt lektsii podpolkovnika Neznamova (26-go marta 1909 g.): Trebovaniia, kotoryia pred'iavliaet sovremennyi boi k podgotovke nachalnikov i mass (St. Petersburg: Tipografiia Gr. Skachkova, 1909), pp. 21-37.

17. B. M. Shaposhnikov, Vospominaniia. Voenno-nauchnye trudy (Moscow: Voernizdat, 1974), p. 144.

18. A. A. Svechin, "Evoliutsiia strategicheskikh teorii," in: B. Gorev, ed., Voina i voennoe iskusstvo v svete istoricheskogo materializma (Moscow: Gosizdat, Otdel voenlit, 1927), pp. 88-100.

19. P. A. Zhilin, Problemy voennoi istorii (Moscow: Voenizdat, 1975), pp. 135-140. General Zaionchkovskii, himself an honored professor at the General Staff Academy, argued that the young Turks within the Acedemy of the General Staff proved better critics than builders. See: A. Zaionchkovskii, Mirovaia voina 1914-1918 gg.: Obshchii strategicheskii ocherk (Moscow: Gosvoenizdat, 1924), pp. 22-23.

20. Boris Vladimirovich Gerua, Vospominaniia o moei zhizni (Paris: Tanais, 1969), I, pp. 250-261.

21. Shaposhnikov, Vospominaniia. Voenno-nauchnye trudy, pp. 164-165.

22. Zhilin, Problemy voennoi teorii pp. 140-141.

23. N. I. Mikhnevich, Strategiia 3rd editon, (St. Petersburg: Beregovskii, 1911), pp. 106-107.

24. Rostunov, Russkii front pervoi mirovoi voiny, pp. 93-95; Zaionchkovskii, Mirovaia voina 1914-1918 gg., pp. 50-53; and A. Zaionchkovskii, Podgotovka Rossii k mirovoi voine (Moscow: Shtab RKKA, 1926), pp. 141-154.

25. Zaionchkovskii, Mirovaia voina 1914-1918 gg., pp. 51-52.

26. V. A. Sukhomlinov, Erinnerungen (Berlin, Verlag von Reimar Hobbing, 1924). Sukhomlinov mentions General Leer on five occasions, but most of these concern his own education. He never mentions Mikhnevich, Neznamov, Maslovskii, Baiov, or Svechin. Bonch-Bruevich, his supposed informer on Academy affairs, is mentioned once in connection with Sukhomlinov's service as Chief of Staff of the Kiev Military District.

27. Ibid., p. 23.

28. A. A. Bogdanov, Vseobshchaia organizatsionnaia nauka (tektologiya). (Moscow, 1913), I. pp. 185-255. Bogdanov, an early Bolshevik and renaissance man who could claim significant contributions in the fields of medicine, politics, philosophy, economics, literature, and literary criticism, quarrelled with Lenin in 1909 but kept close ties to the Bolsheviks through his marriage ties with Lunacharsky. After the revolution he was one of the founders of Proletkul't movement in the arts and literature and the Socialist Academy in Moscow, lecturing frequently at the Proletarian University there. One of pre-revolutionary novels, one of two science fiction works he authored, was called Krasnaia zvezda [Red Star]. The science of control or the scientific organization of labor as it became known in the 1920s embraced control in the following terms: "To manage that means to foresee, to organize, to command, to coordinate, to control. To foresee means to study the future and select a program of action; to organize means to create the dual organism of the enterprise, the material and the social. To command means to set to functioning the personnel. To coordinate means to check that all goes according to the established rules and orders." See: I. I. Gludin, "NOT: Voprosy organizatsii i upravleniia," Revoliutsiia i voina, No. 23, (1923), p. 20.

29. Jacob W. Kipp, "Lenin and Clausewitz: The Militarization of Marxism," Military Affairs, XLIX, (October 1985), pp.

30. Gerua, Vospominaniia moei zhizni, I, pp. 273-275.

31. S. A. Fediukin, Sovetskaia vlast' i burzhuaiznye spetsialisty (Moscow: Mysl', 1965), pp. 71-72.

32. I. A. Korotkov, Istoriia sovetskoi voennoi mysli (Moscow: Voenizdat, 1980), pp.27-28. Izhest'ev's study ["Znachenie rascheta pri razrabotke i vedenii voennykh operatsii"] was serialized in Voennyi sbornik from March 1915 to June 1916. Based heavily upon military history and the writings of Clausewitz, Schlichting and Jomini, Izhest'ev study concluded with a plea for the need to see the working out and conduct of military operations as one of the most complex and demanding of human activities. Modern war would not tolerate an eyeball estimate [glazomer] of the situation. Only the mind [um] could deal with the complexity of modern operations. In a critique of Europe's war planners before 1914, Izhest'ev noted the tendency to suppose that the war plan and the plan of initial operations were the end of the estimate process. This estimate process began with the war plan, moved to the campaign plan, which he defined as the preparation and execution of the plan of war in a given theater of military action but also included the plans of individual operations which could not be worked out in advance in such detail. Izhest'ev firmly believed that the estimates upon which the war plan was based should for the most part be "a mathematically absolutely exact estimate." Such calculations should carry over to the first operations of the initial phase of the war. After that the commander and his staff would have to engage in their calculations based upon their assessment of the the mission, theater, enemy, ones own forces, and time. He wrote: "Only an amateur [profan] can think that the entire campaign will unfold according to the prearranged plan without a deviation and that the original plan could be maintained up to the end in all its features. Of course, the military commander never lets his main objective pass from view and is not distracted by accidents of changes in events but he can not determine beforehand with confidence the path by which to achieve this goal." (Voennyi sbornik, No. 4 (April 1916), pp.29-30)

33. A. A. Brusilov, Moi vospominaniia (Moscow: Voenizdat, 1983), pp. 122 ff.

34. Ibid., pp. 174-217; and A. Bazar'skii, Nastupatel'naia operatsiia 9-i russkoi armii v iune 1916 goda (Moscow: Voenizdat, 1939), pp. 9 ff.

35. Fediukhin, Sovetskaia vlast' i burzhuannye spetsialisty, p. 77.

36. L. D. Trotsky, Sochineniia (Moscow: Gosizdat, 1925), XVII, pt. 1, p. 316.

37. V. G. Kulikov, ed., Akademiia general'nogo shtaba: Istoriia Voennoi ordenov Lenina i Suvorova I stepeni Akademii General'nogo Shtaba Vooruzhennykh Sil SSSR imeni K. E. Voroshilova (Moscow: Voenizdat, 1976), pp. 6-21; Korotkov, Istoriia sovetskoi voennoi mysli, pp. 28-31; and S. A. Tiushkevich et al, Sovetskie



Vooruzhennye Sily: Istoriia stroitel'stva (Moscow: Voenizdat, 1978), pp. 38-39.

38. S. I. Gusev, Grazhdanskaia voina i krasnaia armia (Moscow: Voenizdat, 1952), pp. 55-56.

39. M. N. Tukhachevskii, Izbrannye proizvedeniia (Moscow: Voenizdat, 1964), I, pp. 27-29.

40. V. Triandafillov, "Vzaimodeistvie mezhdu zapadnym i iugo-zapadnym frontami vo vremia letnego nastupleniia krasnoi armii na Vislu v 1920 g.," Voina i revoliutsiia, No. 2, (1925), pp. 23-24.

41. Gusev, Grazhdanskaia voina i krasnaia armia, p. 113.

42. M. I. Vladimirov et al, M. V. Frunze: Voennaia i politicheskaia deiatel'nost' (Moscow: Voenizdat, 1984), pp. 58-60.

43. A. Neznamov, "Prepodavanie taktiki," Voennoe znanie, No. 15, pp. 4-5.

44. A. Verkhovsky, "Evoliutsiia prepodavaniia taktiki v 1918-1920 gg.," Voina i revoliutsiia, No. 11 (1928), pp. 52-56.

45. A. Neznamov, "Prepodavanie taktiki," Voennoe znanie, No. 15, (1921), pp. 4-5.

46. M. Frunze, "Edinaia voennaia doktrina i krasnaia armia," Voennaia nauka i revoliutsiia, No. 2, (1921), pp. 33-39.

47. L. Trotsky, "Voennaia doktrina ili mnimo-voennoe doktrinerstvo," Voennaia nauka i revoliutsiia, No. 2 (1921), pp. 204-213. Later in 1921, when speaking before Military-Scientific Society of the Military Academy, Trotsky tried to occupy a middle ground between the voenspetsy and the young Red Commanders associated with Frunze, Gusev, and Tukhachevsky. He warned that a unified military doctrine carried the seeds of mysticism and metaphysics. See: L. Trotsky, Kak vooruzhalas' revoliutsiia (na voennom dele). (Moscow: Vyschii voennyi redaktsionnyi sovet, 1925), III, kn. 2, pp. 201-209.

48. A. S. Bobnov, O krasnoi armii (Moscow: Voenizdat, 1968), p. 216.

49. D. A. Kovalenko, Oboronnaia promyshlennost' Sovetskoi Rossii v 1918-1920 gg. (Moscow: Nauka, 1970).

50. Tukhachevsky, "Pokhod za Vislu," Izbrannye proizvedeniia, I, pp. 126-127.
51. R. Tsifer, "Zametki o voine malokul'turnykh teatrakh i metode ee izucheniia," Voina i revoliutsiia, No. 11 (1928), pp. 132-140.
52. Lev Nikulin, Tukhachevskii: Biograficheski ocherk (Moscow: Voenizdat, 1963), pp. 161.
53. Tukhachevsky, "Pokhod za Vislu," Izbrannye proizvedeniia I, pp. 142-143.
54. Tukhachevsky, "Revoliutsiia izvne," Revoliutsiia i voina, No. 3, (1920), pp. 45-54.
55. "Konbitsa v grazhdanskoi voine," Revoliutsiia i voina, Nos. 6 & 7, (1921), p. 36.
56. A. I. Soshnikov et al, Sovetskaia kavaleriia: Voenno-istoricheskii ocherk (Moscow: Voenizdat, 1984), pp. 3-24.
57. M. Ryshman, Reid Mamontova, august-sentiabria' 1919 g. (Moscow: Gosvoenizdat, 1926), pp. 16-29.
58. Ibid., pp. 30-43.
59. K. Monigetti, Sovmestnye deistviia konbitsy i vozdushnogo flota (Moscow: Gosvoenizdat, 1928), pp. 92-93.
60. Soshnikov, Sovetskaia kavaleriia, pp. 62-63.
61. Gai, "Nedostatki v organizatsii krasnoi konbitsy," Revoliutsiia i voina, Nos. 6 & 7, (1921), pp. 49-68.
62. Issac Babel, Konarmia in: Izvannye proizvedeniia (Moscow: Khudozhestvennaia Literatura, 1966), pp. 27-58.
63. Zotov, "Boi 1 konnoi armii v raione Rovno v iune 1920 g.," Voina i revoliutsiia, No. 2 (1929), pp. 102-103; and US Army, Attache Reports (Poland), No. 1095, "Operations of Budenny's Cavalry," (December 9, 1920), pp. 1-4.
64. Zotov, "Boi 1 konnoi armii v raione Rovno v iune 1920 g.," Voina i revoliutsiia, No. 2, (1929), pp. 104-118. Other operations by strategic cavalry might also be sighted to support their role as a part of a combined-arms operational time. Frunze used the 2nd Cavalry Army to carry out the pursuit of Wrangel's forces after the breakthrough to the Crimea during the Perekop-Chongarskaia operation. Frunze employed an echeloned attack by his 6th army against the Litovskii Peninsula, order partisans to strike at the enemy's rear to disrupt his communications, and

employed F. K. Mironov's 2nd Cavalry Army in a meeting engagement to counter Wrangel's last reserves, elements of General Barbovich's corps. When Barbovich's troops saw the mass of horse drawn up to their north, the White general sent his own cavalry to meet the threat. However, as the two sides closed to within 900 yards of each other, Mironov's cavalry broke ranks to the right and left to reveal 250 tachanki, mounting machine guns. Before the White cavalry could break off its charge a rain of lead cut into its ranks. The utter disorder in the enemy force, allowed elements of 2nd Konarmia and the 51st Division to mount a sustained attack which broke Barbovich's corps and sealed the fate of Wrangel's army. See: M. I. Vladimirov et al, M. V. Frunze: Voennaia i politicheskaiia deiatel'nost' (Moscow: Voenizdat, 1984), pp.137-147; and V. V. Dushen'kin, Vtoraia konnaia: Voenno-istoricheskii ocherk (Moscow: Voenizdat, 1968), pp. 189-206.

65. Jozef Pilsudski, Year 1920 (London: Pilsudski Institute of America / Pilsudski Institute of London, 1972), p. 83.

66. Nikulin, Tukhachevskii, pp. 119-122.

67. Tukhachevsky, "Pokhod za Vislu," Izbrannye proizvedeniia I, pp.134-52; and Pilsudski, Year 1920, pp. 85-150.

68. Pilsudski, Year 1920, pp. 151-208.

69. V, Triandafillov, "Vziamodeistvie mezhdru zapadnym i iugozapadnym frontami vo vremia letnego nastupleniia krasnoi armii na Vislu v 1920 g.," Voina i revoliutsiia, No. 2, (1925), 26-27.

70. The extent of Soviet military studies on the Vistula Operation of 1920 becomes clear when we examine a bibliography on the Soviet-Polish War prepared by the Military Section of the Communist Academy in 1930 to note the tenth anniversary of the campaign. That bibliography listed 257 titles, most of them Soviet books and articles on the Vistula Operation. See: "Bibliograficheskii ukazatel' literatury po sovetsko-pol'skoi voine 1920 g.," in: Kommunisticheskaiia akademiia, Sektsiia po izucheniiu problem voiny, Zapiski I, (1930), pp. 219-231. The Stalinist version of events is summed up in I. Apanasenko's essay on the Konarmia, written to mark the twentieth anniversary of its founding. Here the Red Cavalry, led by Budennyi and Voroshilov, "fulfilled the strategic plan of the Great Stalin." The seizure of L'vov "would have been the single and best possible way to help Western Front." But Trotsky, "the enemy of the people," changed the axis of advance on August 1 and betrayed the cause of Poland and the entente. See: I. Apanasenko, "Pervaia konnaia," Voenno-istoricheskii zhurnal, No. 4, (November 1939), pp. 35-42.

71. Pilsudski, Year 1920, pp. 85-86.
72. Neznamov, Trebovaniia, p. 27.
73. Verkhovsky, "Evoliutsiia prepodavaniia taktiki v 1918-1928 gg.," Voina i revoliutsiia, No. 11 (1928), pp. 56-64.
74. Frunze, "Edinnaia voennaia doktrina i krasnoi armii," Voennaia nauka i revoliutsiia, No. 2, (1921), p. 39.
75. N. Varfolomeev, "Strategiia v adkademicheskoi postanovke," Voina i revoliutsiia, No. 11, (1929), pp. 83-84.
76. A. Svechin, Strategiia 2nd edition (Moscow: Voennyi Vestnik, 1927, pp. 14 ff.
77. Varfolomeev, "Strategiia v akademicheskoi postanovke," Voina i revoliutsiia, No. 11, (1928), p. 84.
78. A. A. Svechin, Strategiia 2nd edition, (Moscow: Voennyi vestnik, 1927), pp. 6-26.
79. A. Svechin, "Gosudarstvennyi i frontovyi tyl," Voina i revoliutsiia, No. 11, (1930), pp. 94-108.
80. B. M. Shaposhnikov, Mozg armii (Moscow: Voennyi Vestnik, 1927-1929), I, pp. 112 ff.
81. N. Varfolomeev, "Manevry na zapfronte," Revoliutsiia i voina, No. 19, (1923), pp. 5-26, and No. 20, (1923), pp. 77-104. On the influence of Frunze and Tukhachevsky upon the Academy see: A. I. Radzievsky, ed., Akademiia imeni M. V. Frunze: Istoriia voennoi ordena Lenina Krasnoznamennoi ordena Suvorova Akademii (Moscow: Voenizdat, 1972), pp. 71-77.
82. N. Varfolomeev, "Dvizhenie presleduiushchei armii i poliu reshitel'nogo srazheniia," Revoliutsiia i voina, No. 13, (1921), pp. 69-96.
83. Varfolomeev, "Strategiia v akademicheskoi postanovke," Voina i revoliutsiia, No. 11, (1928), pp. 87-88.
84. N. Varfolomeev, "Strategicheskoe narastanie i istoshchenie v grazhdanskoi voine," in: A. S. Bubnov et al, eds., Grazhdanskaia voina 1918-1921: Voennoe iskusstvo krasnoi armii (Moscow: Voennyi vestnik, 1928), pp. 260-281. What Varfolomeev called "strategic intensification", Tukhachevsky had termed "intensification of the revolution" [narostanie (sic) revoliutsii]. See: Tukhachevsky, "Revoliutsiia izvne," Revoliutsiia i voina, No. 3, (1920), pp. 47-54.

85. N. E. Varfolomeev, Udarnaia armia (Moscow: Gosvoenizdat, 1933), pp. 169-189; and Nastupatel'naia operatsiia (po opytu Am'enskogo srazheniia 8 Avgusta 1918 g.) (Moscow: Gosvoenizdat, 1937), pp. 169-176.

86. V. K. Triandafillov, "Vozmozhnaia chislennost' budushchikh armii," Voina i revoliutsiia, No. 3 (1927), pp. 14-43. Triandafillov's assumptions about the prospect of war were those of the Party's right, the advocates of the continuation of the NEP. He even cited Bukharin on the stabilization of the world capitalist economy. (p. 17)

87. V. Triandafillov, Kharakter operatsii sovremennykh armii 3rd edition (Moscow: Gosvoenizdat, 1936), pp. 7-9, 255. Triandafillov's study of the Perekop Operation was later reworked and published as part of the three-volume history of the Civil War. This essay is noteworthy for its attention to the problem of combined arms, especially the coordination of infantry and artillery in the attack, and the analysis of the role of the higher density of machine guns in this breakthrough operation. See: N. Triandafillov, "Perekopskaia operatsiia Krasnoi armii (takticheskii etiud)," in: Bubnov et al., Grazhdanskaia voina 1918-1921: Boevaia zhizn' Krasnoi armii, I, pp. 339-357.

88. Triandafillov, Kharakter operatsii sovremennykh armii 1st edition (Moscow: Gosizdat, Otdel Voenlit, 1929), pp. 1 ff.

89. Field Regulations of the Red Army 1929 (Washington, DC: Foreign Broadcast Information Service, 1985), pp. 63-93. The tie between future war [budushchaia voina] and operational art [operativnoe iskusstvo] was made by I. Ivanov in a bibliography he published in 1934. There the posthumous second (1933) edition of Triandafillov's book was listed as the basic work in four out of twelve major categories, i. e. contemporary operational means, the conduct of operations, meeting operations, and offensive operations. Under the subtopics listed for conduct of operations, Kharakter operatsii sovremennykh armii was listed as the basic work for studying general questions, control of operations, and transport and rear. See: I. Ivanov, "Voennotekhnicheskaia literatura po voprosam kharaktera budushchei voiny i operativnogo iskusstva," Voina i revoliutsiia, No. 2, (March-April 1934), pp. 13-30.

90. M. N. Tukhachevsky, "K voprosu o sovremennoi strategii," in: Voina i voennoe isskustvo v svete istoricheskogo materializma (Moscow: Gosizdat, 1927), p. 127-133.

91. G. Isserson, "Zapiski sovremennika o M. N. Tukhachevskom," Voenno-istoricheskii zhurnal, No. 4 (April 1964), pp. 65-67.

92. "Motorizatsiia i mekhanizatsiia inostrannykh armii (k nachalu 1929 g.)," Informatsionnyi sbornik, No. 12, (December 1928), pp. 145-157.
93. Tukhachevsky, "Na baze dostignutnogo -- k novym zadacham," Izbrannye proizvedeniia. II, pp. 67-68; and D. N. Nikishev, "Chelovek dela," in: N. I. Koritsky et al, eds., Marshal Tukhachevskii: Vospominaniia druzei i soratnikov, (Moscow: Voenizdat, 1965), pp. 199-202.
94. Sovetskaia voennaia entsiklopediia, (Moscow: Sovetskaia entsiklopediia, 1933), II, cc. 842-843.
95. Tukhachevsky, "Predislovie k knige G. Del'briuka Istoriia voennogo iskusstva v ramkakh politicheskoi istorii," in: Izbrannye proizvedeniia, II, pp. 116-146.
96. M. N. Tukhachevsky, "O kharaktere sovremennykh voyn v svete reshenii VI kongressa Komintern," in: Zapiski. Kommunisticheskaiia Akademiia. Sektsiia po izucheniiu problem voiny (Moscow, 1930), pp. 21-29
97. Voyna i revoliutsiia, No. 3, (1930), pp. 140-147.
98. Tukhachevsky, "Predislovie k knige Dzh. Fullera Reformatsiia voiny," Izbrannye proizvedeniia, II, p. 152.
99. USSR, Narodnyi Komissariat Oborony, Vremennyi polevoi ustav RKKA 1936 (PU 36), (Moscow: Gosvoenizdat, 1937), pp.9-16.
100. Tukhachevsky, "O novom polevom ustave RKKA," in: Izbrannye proizvedeniia, II, pp. 253-255.
101. Tukhachevsky, "Voennye plany nyneshnei germanii," in: Izbrannye proizvedeniia, II, pp. 233-239.
102. G. I. Isserson, Novye formy bor'by (Moscow: Gosvoenizdat, 1940). Isserson, Tukhachevsky's colleague, warned that Spain had been an atypical war and that the German use of mechanized mobile groups and tactical aviation against the Poles was the real threat to be met. How Isserson survived the purges, kept his position at the Military Academy, and was able to secure the publication of New Forms of Struggle remains unclear.
103. P. A. Kurochkin, Obshchevoiskovaia armia v nastuplenii (po opytu Velikoi Otechestvennoi voine 1941-1945 gg.) (Moscow: Voenizdat, 1966), pp. 19-25.
104. The situation is exemplified by V. A. Semenov's study of the development of Soviet operational art, published in 1960. This work cited Triandafillov's Nature of the Operations of Modern Armies but provided no intellectual context and ignored the

contributions of Svechin, Varfolomeev, Tukhachevsky, and others.  
See: V. A. Semenov, Kratkii ocherk razvitiia sovetskogo  
operativnogo iskusstva (Moscow: Voenizdat, 1960), pp. 103-126.