



# Analysis of the Battle of Kursk

by Captain Benjamin R. Simms

During the winter of 1943, senior leaders of the German army faced a difficult choice. Nearly 2 years of continuous operations on the Eastern Front had resulted in a tenuous stalemate that stretched from Leningrad in the north to the eastern edge of the Black Sea in the south. Near the center of the contested area was a 300-kilometer (km) wide salient that bulged 200km into German lines. At the center of this salient was the city of Kursk, a strategically located focus of road and railways that allowed the German army great flexibility in forward and lateral movements along the Eastern Front, or conversely allow the Soviets a staging point for retaking the Ukraine.<sup>1</sup>

The Kursk salient extended into the German Army Group Center and Army Group South's areas of operation. Field Marshal Erich von Manstein, commander of Army Group South, recognized the opportunity to take Kursk after defeating the Soviet counteroffensive, Operation Star, and retaking the vital transportation centers of Belgorod and Kharkov on the southern edge of the Kursk salient in March 1943. His appeal to Field Marshal Gunther von Kluge, commander of Army Group Center, for an immediate coordinated assault of the Kursk salient went unheeded as Army Group Center was exhausted from repelling a massive Soviet counterattack on Orel, a vital transportation center on the north of the Kursk salient.<sup>2</sup>

With the muddy spring season just a few weeks away, the German army ceded the initiative it had gained during the winter of 1942 and 1943 to refit and rearm in preparation for the coming summer months, which were much better suited to mounted operations. It was a choice between retaining the initiative and attacking a partially prepared defender with exhausted forces, or trading the initiative for a chance to consolidate and prepare for future operations, whether of-

fensive or defensive, against a better-prepared enemy. The Wehrmacht chose the latter.

In the interim muddy spring season, both sides ceased offensive operations as the Russian countryside became a quagmire. Both sides realized the obvious importance of the Kursk salient and began preparing for future operations in this strategic area. Using the spring lull in mounted operations to full advantage and using every passing day to prepare a stubborn defense, the Soviet army used the railway and road center of Kursk to bring as much combat power as possible into the salient. By the time the muddy season had abated, the Russian army would mass 20 percent of its forces in the Kursk salient and reserve positions in the East, with one-third of all available tanks and one-fourth of all available combat aircraft.<sup>3</sup> The Wehrmacht, well aware of Russia's preparations, rebuilt its armies and contemplated its next move.

On 3 May 1943, German senior leaders from the Eastern Front met with the German central command, including Adolf Hitler, to discuss the German army's overall Eastern Front strategy. Again, the German army had a choice. Should it remain on the defensive and face the Soviets in a mobile defense to wear down the Soviet forces before resuming the offense, or should it seize the initiative and attack? The summit concluded, against the protests of von Manstein, Colonel General Heinz Guderian, Colonel General Walter Model, and the Luftwaffe chief of staff, General Hans Jeschonnek, that an attack against the Kursk salient must be undertaken because Germany "could not appear passive, but had to resume the offensive to reassure its allies and own population."<sup>4</sup> Von Manstein and Guderian, well aware of the massive Soviet defensive preparations, were in favor of letting the Soviets resume the offensive and pursuing a mobile

defense to attrit the Soviet forces and allow a German counterattack. Both officers were overruled by the German army chief of staff, Colonel General Kurt Zeitzler.<sup>5</sup> Thus, preparations continued for an attack into the Kursk salient. The attack plan was known as Operation Citadel.

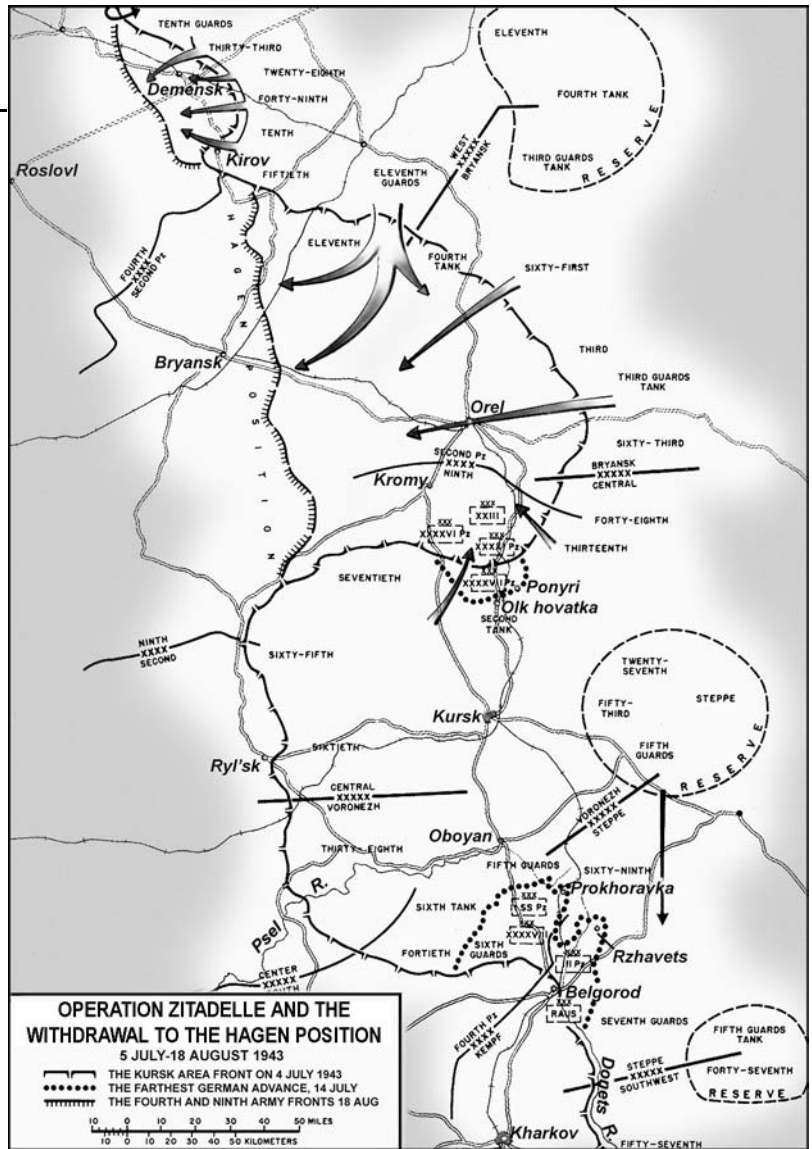
### The Kursk Operational Environment

The terrain in the Kursk area of operations generally favored the defender due to a lack of improved roadways, several major rivers running east-west, and numerous swelled streams and muddy areas caused by heavy rains. Additionally, many small rural towns provided cover and concealment for dismounted defending forces. The attacking German forces had both natural and man-made disadvantages to overcome.

The Kursk area of operations had several major obstacles to mounted attack. There are four major rivers running generally east-west that divide the Kursk salient into several sections. The Seim and Svapa Rivers, in the center and north respectively, divide the Kursk salient in half and provide a natural turning obstacle that would greatly impede a large-scale mounted attack from the west toward Kursk. In the south, the Psel and Donets Rivers form a natural obstacle funneling Army Group South away from the center of the Kursk salient. The rivers, though generally fordable in places, afforded the Russian defenses a great advantage by channeling the German advances into more predictable routes.<sup>6</sup> Besides the rivers, many smaller streams and rivers had swelled from recent rains and became further obstacles to the German advance.<sup>7</sup> Additionally, many small rural towns, which could restrict mounted movement dotted the landscape. On Army Group South's main route of approach to Kursk, the city of Prokhorovka formed a single large urban restriction.<sup>8</sup>

The major rivers and the salient's geometry forced the German army into two avenues of approach. Army Group Center would attack directly south out of the city of Orel toward Kursk, which would allow the attacking forces to use the shortest route to Kursk and bypass the Seim and Svapa Rivers. In the south, Army Group South would attack to the north from the city of Belgorod, also toward Kursk. This avenue would also allow a shorter route to Kursk and bypass the Psel River. This route would lead, however, directly through the city of Prokhorovka.<sup>9</sup>

Key terrain in the Kursk area of operations included the cities of Kursk and Prokhorovka. Prokhorovka was key terrain because of its location along Army Group South's attack route. As one of the area's larger cities, Prokhorovka was an obstacle to the attacking force and could serve as a major supply node and staging point for reinforcements to the defenders in the area due to its central location and proximity to the rail line from Kursk. Prokhorovka would have to be taken if an advance to Kursk from the south was to succeed. Kursk was key terrain due to its location at the center and rear of the Kursk salient and because it was the main road and railway hub in the region. Loss of Kursk would have "rendered the Soviet salient indefensible."<sup>10</sup> If Kursk were to



fall into German hands, the large concentration of Soviet forces in the salient would be encircled, and the German army would have an ideal staging point for future operations.

Observation and fields of fire in the Kursk area of operations were generally very good. Aside from the scattered urban areas, the terrain was open farmland with sparse groupings of trees. In most areas, observation and fields of fire are unrestricted by terrain. The gentle, rolling farmland with scattered small ravines and trees resembles southern Ohio or central England.<sup>11</sup> This lack of cover favored the Russian defenders by allowing unimpeded observation of attacking German forces while not being a major hindrance to a well-prepared defender.

Cover and concealment throughout the Kursk area of operations was generally sparse and limited to small pockets of trees and the numerous farming hamlets that dotted the landscape. The Soviet defenders used the available cover to their advantage, fortifying many of the villages and tying them into their defensive belts. Even though these strong points could be easily bypassed, early German thrusts would become bogged down trying to clear out many of these villages building by building to limit threats to the attacking force's

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flanks and rear. The sparse cover and concealment for attacking forces coupled with the skillful use of available cover for the defense was yet another aspect of the terrain that favored the defender. The Germans often found that the first indication of a Russian position was when the first Panzer exploded.<sup>12</sup>

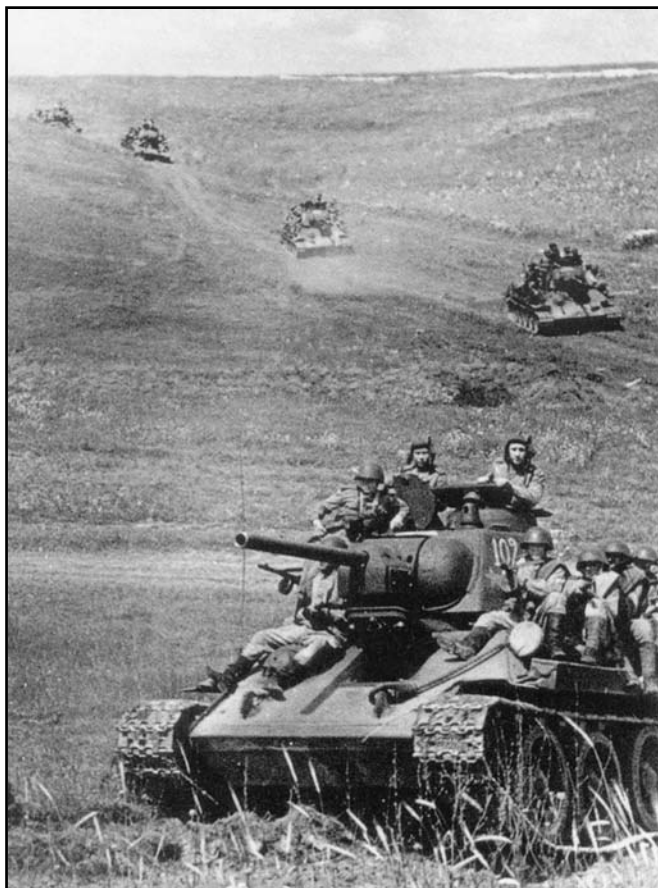
The weather during the Kursk operation also favored the Soviets. A sudden thunderstorm on the evening of 4 July, just after the German attack had been committed, swelled numerous small streams and turned much of the ground into a quagmire that slowed tracked vehicles and limited wheeled vehicles to road travel only. The sparse and primitive roadways in the Kursk area of operations compounded the mobility problems faced by the Germans. The preceding cloud cover and subsequent storms also hampered the Luftwaffe in its supporting attacks during the initial German advances.<sup>13</sup> Though the weather after 5 July was essentially clear, it worked against the German army during the critical initial advance into the Kursk salient. Thus, the battlefield environment generally favored the defender.

### **Historical Outcome of the Battle of Kursk**

German attacking forces included large concentrations of armored and mechanized forces from Army Group South and Army Group Center, each making a separate, coordinated assault toward the city of Kursk. Army Group Center's forces included 1,200 tanks and assault guns initially concentrated on a front of 30km. This force would attack south and penetrate enemy defenses around the city of Kursk to envelop remaining enemy forces in the salient. Subsequently, it would link up with forces from Army Group South and attack to destroy the enemy forces remaining in the salient to enable the German army to retain the initiative and prevent further enemy offensive action. Army Group South's forces would attack north and northeast from Belgorod, with the same task and purpose as Army Group Center. Army Group South's forces included approximately 1,500 tanks and assault guns.<sup>14</sup> To maximize combat power for the attack, Hitler had committed the entire strategic reserve of the Eastern Front as a part of these forces. If the attack failed, Germany would have insufficient forces to defend against a determined Soviet counterattack.<sup>15</sup> Hitler committed 2,700 tanks and assault guns, 10,000 field guns, 567,000 men, and 2,500 aircraft to the attack.<sup>16</sup>

Opposing the German assault was the bulk of the Soviet Central and Voronezh fronts. Each front formed a coordinated defense of six well-prepared belts. Each belt con-

tained antitank guns, tanks, and infantry strong points arranged to mass fires at key points in the terrain. The Soviets had also taken unprecedented steps to coordinate direct fires with massive amounts of indirect fires and obstacles. Hidden and bypassed infantry strong points were to conceal themselves and assail the flanks and rear of the German forces to further slow the German advance. Antitank reserves and mo-



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mobile obstacle detachments would continuously and unpredictably change the compositions of the static defenses.<sup>17</sup> Broadly, the Soviets defended to destroy the attacking German forces to provide freedom of maneuver for counterattack forces. The Soviets defended with 3,300 tanks and assault guns, 20,220 field guns, 1,272,000 men, and 2,650 aircraft.<sup>18</sup> The Soviets also maintained an operational reserve of 1,600 tanks and 573,000 men to the east of the salient on the Steppe front to prevent any German operational penetration of the Kursk defenses.<sup>19</sup>

The attack commenced on the afternoon of 4 July 1943. The Germans initially conducted reconnaissance in force with several battalion-sized elements. These elements achieved good success by penetrating the lightly defended outer belt of the Soviet defenses and establishing routes for the main attacks. By the end of the first day, the German probing attacks had penetrated to a depth of approximately 3 miles on both fronts. The main attack was to occur at 0300 hours on 5 July, following a preparatory bombardment at 0230 hours. However, the initial attacks had enabled the Soviet defenders to determine the main thrust of the German advances and at 2230 hours on 4 July, a massive Soviet artillery attack pounded the German units of the main attack in their assembly areas. The Soviet bombardment continued until dawn causing heavy casualties to the German forces. Intensifying the artillery, a thunderstorm began at midnight on 5 July, further disrupting German attempts to coordinate the main attack. Instead of one massive, coordinated attack, Operation Citadel had turned into several smaller attacks.<sup>20</sup>

In the north, the German attack found initial success. The concentrations of German armor mauled the lead echelon divisions in only 2 days. The Soviets frustrated the German army's attempts to achieve operational freedom by continually repositioning forces into the path of the German ad-

vances. Ultimately, the Soviets had too much combat power and too much ground for the Germans to overcome, and by 12 July, the German attack stalled just 12km from where it started. A Soviet counterattack into the Orel salient, to the rear of the attack column, caused the complete defeat of the attack in the north.<sup>21</sup>

In the south, the German attack had better success. By the end of the first day, it had penetrated the first echelon divisions of the Soviet defenses and began a drive to Prokhorovka. By 12 July, this drive had caused the Soviets to commit operational reserve forces, and resulted in one of the largest single actions during the battle of Kursk — 700 German tanks against 850 Soviet tanks. The German armor included 100 heavy Tiger tanks and a similar number of medium Panther tanks, both designed to outmatch the T-34 in both armor and firepower. The Soviets compensated for the German overmatch by executing a reckless charge directly into the German force and fighting at point-blank range. During an 8-hour period, more than 1,500 tanks fought a seemingly endless melee, with only 350 German tanks and 500 Soviet tanks remaining. This single, decisive battle broke the Germans' ability to attack any further into the Kursk salient. By 24 July, the Germans had lost any ground they had gained into the salient and were incapable of resisting the Soviet counterattacks that followed.<sup>22</sup> The battle for Kursk had ended in a German defeat that would eventually lead to the complete loss of the Eastern Front for the Germans.

#### **Battle Analysis Using the Principles of War**

U.S. Army Field Manual 3-0, *Operations*, cites nine principles of war as the "enduring bedrock of Army doctrine."<sup>23</sup> These nine principles are objective, offensive, mass, economy of force, maneuver, unity of command, security, sur-

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prise, and simplicity. They provide a general guide for successful military operations at all levels and can be used as a tool for analysis of past campaigns. While analyzing the battle of Kursk, I concentrated on only the principles where one side had the decisive edge over the other. In the battle of Kursk, the Soviets had overwhelming advantages in the areas of mass, economy of force, unity of command, security, and surprise.

During the battle, the Soviets displayed overwhelming mass where and when it was needed, and the Germans failed to achieve mass. Mass, as a principle of war, is the concentration of the effects of combat power at the decisive place and time.<sup>24</sup> In offensive operations, it is a generally accepted axiom that the attacker must achieve a 3-to-1 ratio of forces to be successful. At the battle of Kursk, the ratio of forces was actually in favor of the defender. The Soviet forces had a 1.9-to-1 advantage in tanks, a 2.5-to-1 advantage in men, and a 2.1-to-1 advantage in field guns.<sup>25</sup> The Soviet's advantage is further demonstrated by the density of antitank guns and mines in the region: 12 to 15 antitank guns per km and 1,600 antitank mines per km in the Kursk salient, an increase of 300 percent and 400 percent, respectively, over the densities used at the defense of Moscow and Stalingrad. In certain key areas, the density of antitank guns exceeded 100 per km of defensive front. Furthermore, the Soviet pattern of defense was arrayed in such a way that the Soviet forces were able to bring an unprecedented amount of direct and indirect fires on key points on the battlefield.<sup>26</sup> Clearly, the German army did not have the mass it needed to defeat the Soviet defenses.

The Soviets also displayed a better economy of force over the German attacker. Economy of force is the allocation of minimum essential combat power to secondary efforts. More importantly to the Kursk example, economy of force "involves the discriminating employment and distribution of forces" and "accepting prudent risk in selected areas to achieve superiority."<sup>27</sup> The Germans, in deciding to attack without regard for a strategic reserve, displayed a poor understanding of economy of force. In undertaking such a gamble, they left the entire Eastern Front open to the subsequent Soviet counterattack. The failure at Kursk may not have been so catastrophic had a mechanized strategic reserve been employed. In essence, they lacked the minimum essential combat power for the secondary effort of a strategic reserve. The Soviets, on the other hand, displayed a conservative view of economy of force and decided that they had enough forces to face the German army in a defense, but not an attack. Their strategy of a defense to absorb the German attack, while maintaining enough of a reserve to continue a counterattack, displayed a better example of economy of force.

Another principle of war the Germans lacked was unity of command. Unity of command is ensuring the unity of effort under one responsible commander. At the strategic level, the German army did not demonstrate unity of command. During the events leading up to the battle of Kursk, it is not clear who was making decisions for the German army. The Citadel plan was written by Army chief of staff Zeitzler and was endorsed by the commander of Army Group Center, von Kluge. However, neither von Manstein nor Model, the nominal maneuver commanders of the southern and northern attack forces, supported the Citadel operation. Guderian, inspector general of Panzer troops, was so outspoken in his opposition to the Citadel plan that von Kluge asked Hitler to be his second in a duel with Guderian. Ultimately, operation-

al concerns were abandoned when Field Marshal Wilhelm Keitel, Chief of the Armed Forces High Command, insisted to Hitler that the attack continue as planned for political reasons. Less than 3 weeks before the attack, however, Guderian appealed to Hitler one last time. Hitler, who had previously endorsed Operation Citadel replied, "You are quite right. Whenever I think of this attack, my stomach turns over." Yet, preparations for the attack continued under intense political pressure.<sup>28</sup> Clearly, unity of command had been lost at the highest levels of the German armed forces, with disastrous consequences for the German army.

Security was another vital area where the Soviets had the advantage over the Germans. Security is measures taken by a command to protect itself from surprise, interference, sabotage, annoyance, and threat.<sup>29</sup> German security was compromised many times during preparation for Operation Citadel. Several years before Citadel, British intelligence had cracked Germany's enigma communications security code. On 22 March 1943, British intelligence intercepted communications dealing with troop movements and tentative start dates for Operation Citadel, then passed on the information to the Soviets.<sup>30</sup> Armed with this information, the Soviet high command had a much clearer picture of Germany's intent for the 1943 summer offensive. Another frustrating aspect of Germany's security efforts was the susceptibility of German lines of communication to partisan attack. The occupied Soviet territory contained vast expanses of dense woodlands and marshes that resisted pacification by German occupation forces. The partisans were under the control of the Soviet government and were even supported by a resupply system that used Soviet cargo planes at remote landing fields at night. The rudimentary road system and German reliance on rail during the muddy spring months made resupply convoys and trains especially vulnerable to partisan attack. German rear areas in the occupied territories were not safe from the partisans unless heavily guarded, and the guerrillas attacked barracks, headquarters, railroads, bridges, and even reinforcements. From January to July 1943, the Germans recorded almost 1,500 separate attacks on the railroads between the Eastern Front and Germany. Even more damaging to Citadel was the valuable intelligence on German troop dispositions that the partisans provided.<sup>31</sup> Such activities made it next to impossible for the Germans to maintain operational security of their rear areas.

By contrast, the Soviets had great success in securing their operations in and around the Kursk salient. The Soviets made extensive use of deception by carefully camouflaging real positions while emplacing 1,000km of false trenches, 900 mobile dummy tanks, and 13 false airfields. In addition, troop movements were executed in the salient at night as much as possible, and any mention of preparation for the operation over the radio was prohibited. Furthermore, any orders to subordinate commanders were by face-to-face coordination only.<sup>32</sup>

The final principle of war that the Germans failed to consider was surprise. Surprise is to strike the enemy at a time or place or in a manner for which he is unprepared. Clearly, the Germans ceded surprise during Operation Citadel. The initial date for Operation Citadel was 3 May 1943. The German forces were clearly prepared for war, but a series of orders postponing Citadel eventually pushed the attack to 4 July because of the weather and Hitler's desire to include the newest tanks in his offensive.<sup>33</sup> Concurrent to this, the Soviets were aware of plans for a German offensive into the



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Kursk salient as early as the last weeks of March 1943.<sup>34</sup> Despite the fact that it was impossible to conceal the intent and even the location for an offensive and that the Soviets were building a well-prepared defense, the Germans attacked without the element of surprise. With the hindsight of historical perspective, it is possible to use tools, such as analysis of the battlefield environment and the principles of war, to determine where previous armies made mistakes and what disadvantages they had to fight through. The battle for Kursk is a historically important battle that holds important lessons at all levels of war. It also provides one of the earliest historical examples of what would become modern Soviet doctrine. The application of the principles of war is but one of many ways to learn from this complex and historically important battle.

## Notes

<sup>1</sup>Martin Caidin, *The Tigers are Burning*, Hawthorne Books, New York, 1974, pp. 9-11.

<sup>2</sup>David M. Glantz and Jonathan M. House, *The Battle of Kursk*, University Press of Kansas, Lawrence, Kansas, 1999, pp. 10-14.

<sup>3</sup>Caidin, pp. 15-19.

<sup>4</sup>Glantz and House, pp. 1-3.

<sup>5</sup>Ibid., pp. 1-3, 23-24.

<sup>6</sup>Ibid., pp. 79-81.

<sup>7</sup>Caidin, p. 65.

<sup>8</sup>Glantz and House, p. 83.

<sup>9</sup>Thomas E. Griess, ed., *Campaign Atlas to The Second World War*, Department of History, U.S. Military Academy, West Point, New York, 1989, p. 27.

<sup>10</sup>Glantz and House, p. 80.

<sup>11</sup>Ibid., p. 79.

<sup>12</sup>Caidin, pp. 159-162.

<sup>13</sup>Ibid., pp. 161, 164-6.

<sup>14</sup>Colonel David M. Glantz, *Combat Studies Institute Report #11: Soviet Defensive Tactics at Kursk*, U.S. Army Command and General Staff Col-

lege, Combat Studies Institute, Fort Leavenworth, Kansas, September 1986, pp. 25-26.

<sup>15</sup>Glantz and House, pp. 25-26.

<sup>16</sup>Kenneth Macksey, *Tank Warfare: A History of Tanks in Battle*, Stein and Day, New York, 1972, p. 213.

<sup>17</sup>Glantz, pp. 61-63.

<sup>18</sup>Macksey, p. 213.

<sup>19</sup>Glantz, pp. 26-27.

<sup>20</sup>Caidin, pp. 162-165.

<sup>21</sup>Glantz, p. 29.

<sup>22</sup>Caidin, pp. 212-223.

<sup>23</sup>U.S. Army Field Manual (FM) 3-0, *Operations*, U.S. Government Printing Office, Washington, DC, 14 June 2001, pp. 4-11

<sup>24</sup>Ibid., pp. 4-13

<sup>25</sup>Glantz and House, pp. 64-65.

<sup>26</sup>Janusz Piekalkiewicz, *Operation Citadel*, Presidio Press, Novato, California, 1987, pp. 77-79.

<sup>27</sup>FM 3-0, pp. 4-13.

<sup>28</sup>Glantz and House, pp. 1-3.

<sup>29</sup>FM 3-0, pp. 4-14.

<sup>30</sup>Piekalkiewicz, pp. 63-67.

<sup>31</sup>Caidin, pp. 131-143.

<sup>32</sup>Piekalkiewicz, pp. 81.

<sup>33</sup>Glantz and House, pp. 23-26.

<sup>34</sup>Piekalkiewicz, pp. 61-62.

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