

The Battle of Stalingrad

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There is no escaping the fact that in World War II Stalingrad was a decisive campaign from which Germany never recovered. It was one of three “hammer blows” delivered against the Axis in November 1942. The first two were in North Africa: the British victory at El Alamein and the Anglo-American invasion of Casablanca, Oran, and Algiers. The third blow was the Soviet Operation *URANUS*, which would lead to the destruction of the German 6th Army. Stalingrad also represents one of the high points in the art of campaigning, clearly a decisive battle of annihilation with profound strategic implications. Consequently, the campaign has been analyzed extensively at the operational level.

Despite the importance of Stalingrad at the strategic and operational levels, it is at the tactical level that Stalingrad serves as a lens not only to magnify patterns of past warfare but also to provide a possible glimpse into how warfare will be fought in the future. These profound changes are a continuation of long-term trends stemming from both the French Revolution and the industrialization of Western society and warfare. Conventional warfare in Stalingrad required ever-greater numbers of troops that, in turn, produced very high casualties. The increased number of troops required more ammunition, particularly for certain weapon systems. The logistics systems consequently had more supplies to deliver. There were also more casualties to be evacuated. Air forces were especially important, not only in supporting tactical actions but also in interdicting lines of communication (LOC). But perhaps the most significant development at Stalingrad was the tendency for urban operations to impinge increasingly on the operational and strategic levels of warfare.¹

The city that came to be known as Stalingrad was originally a fortress on Russia’s southern flank, resting on the west bank of a bend of the Volga River about 934 kilometers (km) southeast of Moscow. Over time it grew as a trading center, despite the constant threat posed by the Cossacks, and the Russian state formally established the city of Tsaritsyn in 1589. It continued to grow in importance as a trading center on the Volga so that by 1897, the city had a population of 55,914, a harbor, several schools, and eight banks. In 1925, after the Communist Revolution, Tsaritsyn became Stalingrad when Joseph Stalin assumed power. In 1961, it was renamed once again to the name it still has, Volgograd. At the start of World War II the city’s population was

600,000, but by July 1941, refugees had swollen that sum to about 900,000.²

The massive German invasion of the Soviet Union that began in June 1941 and accomplished tremendous territorial gains stalled in the harsh winter of 1941-42. In December, Adolf Hitler relieved the commander in chief of the German army and assumed those duties himself. Despite the *Wehrmacht's* failure to complete its conquest, Hitler had never abandoned the idea of conducting an offensive into southern Russia to seize the oil fields in the Caucasus mountains. Hitler consequently issued Directive No. 41 on 5 April 1942. Code-named Operation *BLUE*, it directed that the remaining Soviet military units west of the Don River be eliminated and Russia's vital economic areas be seized. It was an overly complex operation consisting of several phases that were based on wishful thinking, inadequate intelligence, and a presumably passive enemy. Both the Russian and German armies, however, were recovering from the previous year's fighting that had inflicted huge casualties on both sides, making any future outcome uncertain.³

Operation *BLUE*

Before the start of Operation *BLUE*, the Red Army launched a major offensive near Kharkov on 12 May. Army Group South, commanded by Field Marshal Fedor von Bock, countered with a double envelopment that trapped some 240,000 Soviet troops in the Izyum pocket. Throughout summer 1942, Army Group South conducted the preselected phases of the operation, even though the Soviets on 19 June captured documents compromising the plans. Hitler became more and more confident as the German armies advanced across the broad steppes. Von Bock began to worry, however, noticing that Russian units were withdrawing. The German army largely depended on railroads for supply. It could operate comfortably up to the Dnieper River. Any advance farther into southern Russia, however, had to be improvised and would be subject to interruptions. The farther they advanced into southern Russia, the more problematic their supply would become.

In early July, the Germans reorganized, with Field Marshal Wilhelm List's Army Group A fielding the 1st Panzer, 11th, and 17th armies. Hitler replaced von Bock with Maximilian von Weichs and redesignated Army Group South as Army Group B. It consisted of the 2d Hungarian, 4th Panzer, 2d, and 6th armies. Hitler's interference in army operations also increased. He issued Directive No. 45 on 23 July, which sent Army Group A south to the Caucasus region, leaving the 6th

Stalingrad had not originally been a major factor in German planning, and the 4th Panzer Army could have reached it much earlier. But Hitler became increasingly fascinated with the city with his issuance of Directive No. 45, a decision that still mystifies historians. It would now constitute the foundation for his conquest of the Caucasus. The German 6th Army under General Friedrich Paulus was to seize Stalingrad from the west. Hitler changed his mind and directed the 4th Panzer Army to assist Paulus by advancing on Stalingrad from the south. It moved forward against tough resistance, only reaching the suburbs south of the city on 10 September 1942. The previous fighting had already reduced its infantry divisions' strength by 40 to 50 percent.⁶

Paulus issued his order for the attack on 19 August. The 6th Army headquarters expected both difficult fighting in the city and Soviet counterattacks with armor from north of the city. The XIV Panzer Corps would conduct the main thrust toward the northern suburbs of Stalingrad. The LI Corps would cover the Panzers' right flank, while the VIII Corps covered the left or northern flank. Even farther north, the 6th Army's XXIV Panzer Corps maintained a bridgehead over the Don River near Kalatch. The main effort north of Stalingrad planned to cut the city's main LOC north along the Volga, although German planners knew this would not cut off all supplies. In the tradition of the German General Staff, the plan had no contingent scenarios; it provided no details on fighting in the city. Ironically, the previous year Hitler had prohibited the German army from fighting in Leningrad and Moscow, while German doctrinal literature tended to downplay the subject of urban combat. Thus, the German army had little if any training or experience in city fighting.⁷

On 21 August, the 6th Army seized a bridgehead over the Don River at Wertjatschij, and two days later the XIV Panzer Corps began its 96.5-km dash eastward. Breaking through scattered opposition, the 16th Panzer Division broke into Rynok the evening of Sunday, 23 August, looking down on the broad Volga north of Stalingrad. It seized Rynok from Red Army antiaircraft units, all-female units that had been deploying north and east of Stalingrad during August. Throughout the remaining hours of the day, troops of the 16th Panzer Division observed as the *Luftwaffe* began bombing Stalingrad.

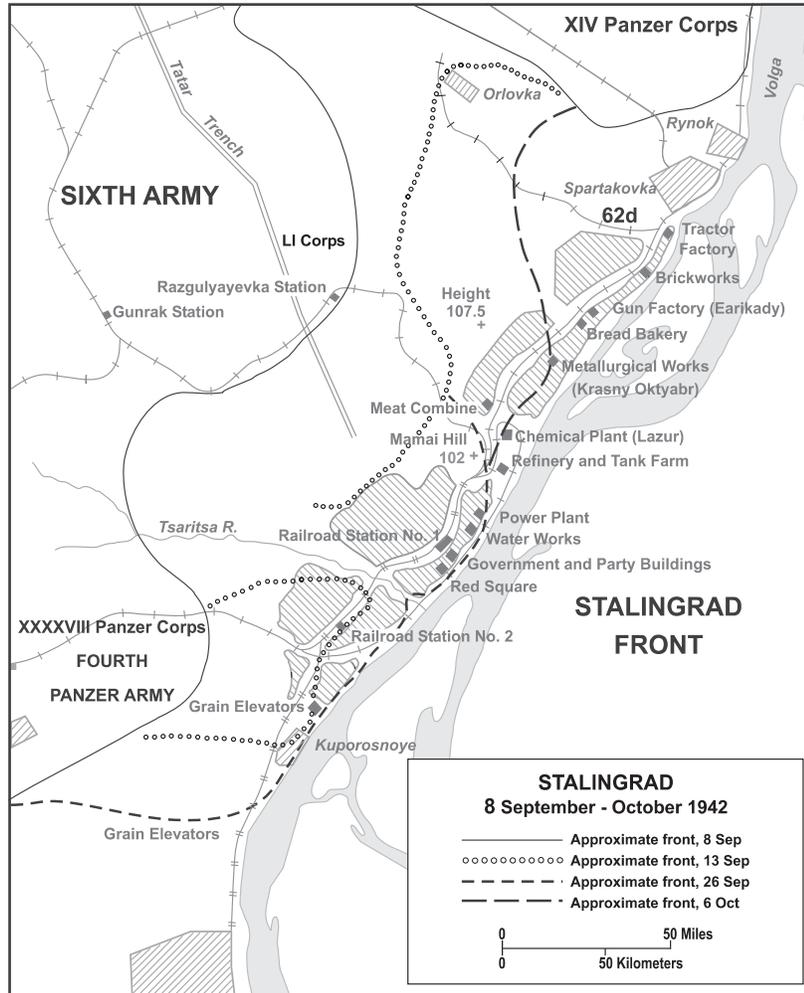
Luftflotte IV, tasked with supporting the advance into southern Russia, fielded half the air assets on the Eastern Front. It, too, was drawn to Stalingrad—its VIII Air Corps supported the army with an average of 1,000 sorties a day. Throughout 23 August, Colonel General Wolfram von Richthofen's *Luftflotte IV* pounded the city, burning

down the wooden houses in the southwest corner. The large petroleum facility burned for days. The walls of the white four- and five-story apartment buildings remained standing, but the bombs burned the interiors, collapsing the floors. The waterworks and communications center were also knocked out. The aerial bombardment during the week killed an estimated 40,000 Russians while the many Soviet anti-aircraft units only managed to bring down three aircraft, a consequence of insufficient training and very limited ammunition. Although the *Luftwaffe* created considerable destruction, Anthony Beevor observed, “Richtofen’s massive bombing raids had not only failed to destroy the enemy’s will, their very force of destruction had turned the city into a perfect killing ground for the Russians to use against them.”⁸

Von Richtofen’s forces were able to maintain air superiority until late October, by which time combat and mechanical failures had considerably weakened them. Simultaneously, the Russian air force began to receive considerably more and better aircraft, while their anti-aircraft forces continued to improve. Most authors, including official historians, maintain that both air forces limited themselves largely to ground support of the army, reconnaissance, and short-range bombing. As historian R.J. Spiller observed, however, we will probably never know the specific sortie patterns of *Luftflotte IV* and the Red air force.⁹

The XIV Panzer Corps remained in its exposed position for several weeks since the 6th Army’s infantry divisions were strung out for some 322 km behind it. While the German infantry divisions marched forward, the Red Army repeatedly counterattacked the XIV Panzer Corps. The German infantry divisions reached the heights above Stalingrad on 10 September 1942. From there, they observed the 56-km-long complex of houses, apartment dwellings, and factories pinned against the 1,000-meter-wide Volga by the unending brown steppes. At many points, the city was only 2 km wide. Also visible were several of the Volga’s islands and tributaries.

An observer with an eye for tactics would have noticed how the steppes are cut up by innumerable steep-sloped gullies that, in Russian, are called *balka*. The Tsaritsa gully was the major *balka*, which separated the southern third of Stalingrad from the northern two-thirds of the city (see Map 2). At the mouth of the *balka* was the old town center where the czar’s officials and businessmen maintained their two-story houses. South of the Tsaritsa was a residential sector. Its train station was near the grain silos across from the large island in the Volga. North of the Tsaritsa was the city center that had its own train station,



Map 2

several plazas, post office, and waterworks. This area housed the local Communist Party (CP) headquarters. To the north was the large petroleum complex along the Volga. West of the oil complex was Stalingrad's dominant feature, the Mamayev Kurgan (on German maps, *Height 102*), on the northern edge of the residential sector that overlooks the Volga River. To the west of Mamayev Kurgan was the airport. The northern sector was the industrial region. Running south to north were the Lasur Chemical Factory (which from the air resembled

half a tennis racket), the Red October Metallurgical Factory, Bread Factory No. 2, the Red Barricade Armaments Factory, and, at the extreme north, a tractor factory.

Despite seeing their city pulverized and the continuing combat operations, 300,000 to 350,000 civilians were still in Stalingrad. Most of them lived in holes, cellars, and homemade bunkers. Since even the German army was incapable of its own logistics support, many civilians faced eventual starvation. Most of those remaining were women, children, and old men. German authorities knew the civilians required evacuation but were unable to carry out the movement. By mid-October, some 25,000 had fled the rubble, walking toward Kalatch. Some of the outskirts of the city still stood, mostly grimy houses occupied by workers. Other than several major streets, most of the roads were unpaved. Russian artillery units that deployed en masse east of the river could hit streets running east and west. Streets running north and south were under Russian small-arms fire.¹⁰

Besides the enormous military problem of taking Stalingrad, Paulus also had to safeguard his northern flank along the Don River. He never solved this task because the Soviets held a number of bridgeheads from which they launched numerous offensives. Three Soviet armies launched the first offensive on 24 August. Although they suffered great casualties, they succeeded in slowing down the German divisions' arrival in Stalingrad.¹¹

Three weeks into the German summer offensive, Stalin remained convinced that the main attack would be against Moscow. He responded clumsily in fits and starts, first splitting Stalingrad between two Front headquarters. In mid-July, however, he corrected this error and created the Stalingrad Front under General A.I. Yeremenko, consisting of the 28th, 51st, 57th, 62d, and 64th armies. The Russians also deployed the North Caucasus, South, Southwest, and Bryansk Fronts in southern Russia. Most men of military age in Stalingrad had already been drafted, but local CP officials mobilized an additional 200,000 men and women to serve in "Worker's Columns" while unneeded workers were placed in militia battalions. Stalin ordered that Stalingrad would not be given up and dispatched the dreaded secret police (NKVD) to enforce discipline. The latter soon controlled all the boats on the Volga and allowed no one out of the city. On 2 August, *Luftwaffe* General von Richthofen noted that Stalingrad seemed to act like a magnet, drawing Russian forces from all directions.

The last major headquarters left in Stalingrad was General Vasili I. Chuikov's 62d Army. While the German 6th Army methodically

attacked Stalingrad, Chuikov ferried over the Volga the equivalent of nine rifle divisions and two tank brigades. As the struggle wore on and he gained greater strength, he increasingly resorted to aggressive counterattacks with anywhere from 200 to 800 men, sometimes with tank support. This hyperactive form of defense forced the Germans to shift repeatedly from offense to defense and made the battle of attrition ever more costly.¹²

Stalin's advisers tried unsuccessfully to stop him from launching several major counteroffensives from bridgeheads north of Stalingrad. Three reserve armies filled with untrained conscripts began an attack on 5 September but were checked with substantial losses. The Soviet Union had already suffered millions of losses, including most of its prewar military. The Germans also occupied most of its industrial and manpower centers.¹³ Despite this, the Soviets still possessed numerical superiority in men and weapon systems. A German intelligence report of 20 September 1942 estimated the Soviets had 4.2 million soldiers, 3 million of those deployed at the Front. Factories continued to produce enormous numbers of tanks and airplanes, and a new military elite had begun to emerge from the earlier disasters of the war: hard men who understood the Germans' weaknesses and were not afraid of the Germans or of taking casualties. Related to this development was the reemergence of the Soviet General Staff, which had arduously compiled lessons learned from which their recipe for victory evolved. An action symptomatic of this emergence of a new Soviet military elite occurred on 9 October 1942, when the Red Army gave commanders relative autonomy, reducing the old coresponsibility of the political commissar. In late 1942, however, the Soviet military was still recovering from its serious wounds.¹⁴

As the 6th Army deployed and attacked Stalingrad in September, a crisis occurred in the German High Command. Hitler had become increasingly nervous over what he perceived to be the slow advance into the Caucasus. On 10 September, he fired Field Marshal List and personally assumed command of Army Group A. The mood was tense at Hitler's headquarters at Vinitza in the Ukraine, aggravated by the hot, humid weather. Hitler had never liked the chief of the General Staff, so General Franz Halder's relief was perhaps unavoidable under the circumstances. Halder managed to last until 24 September, when Hitler replaced him with a relatively junior officer, General Kurt Zeitzler. When the latter arrived to assume his new job, he lectured the General Staff that the only problem Germany faced was its lack of faith in the *Fuehrer*. So, while the fighting for Stalingrad raged, Hitler consolidated his power at the expense of the military professional class.¹⁵

Soon after the arrival of his infantry divisions on 10 September, Paulus launched a concerted attack on the city. It progressed rapidly through the suburbs but slowed in the inner city. The Germans seized Mamayev Kurgan on 13 September, but it changed hands repeatedly throughout the following months. For both sides, casualties climbed precipitously. The Soviets threw in the 13th Guard Division, which sacrificed many of its 10,000 men in grinding down the German advance. This was the first of four German attacks in Stalingrad. It faltered on 19 and 20 September as a result of massive casualties and dwindling ammunition. This pattern recurred in the three subsequent attacks. The first, from 22 September to 6 October, reached the Volga at the mouth of the Tsaritsa. The attack from 14 October to early November from the north reduced the Soviet hold in Stalingrad to two small bridgeheads. The final futile assault from 11 to 17 November was against the two small bridgeheads.¹⁶

On 23 September, a German General Staff officer visited the 295th and 71st Infantry Divisions in the center of the town. He noted that the Soviet troops remained as physically close to the Germans as possible to reduce the effectiveness of the Germans' firepower. The Soviet troops were ever alert and whenever they thought they spotted a German weakness, they immediately counterattacked. They were particularly tough now that there was little room left to retreat. The German officer observed that after the heavy artillery bombardment, troops quickly emerged from their cellar holes ready to fire. Despite German countermeasures, the Soviets continued to move supplies across the Volga at night.

The two German divisions the staff officer visited were old, battle-tested formations that had been considerably weakened by infantry casualties. He observed that their combat power was dropping daily and that the average strength of an infantry company was ten to fifteen men. Losses were particularly high for the officers and noncommissioned officers (NCOs). Although replacements had arrived, they were insufficient in number and lacked experience, training, and soldierly bearing. When an officer fell, the men drifted back to their starting point. To get them moving forward again, a higher-ranking officer had to lead them. The soldiers particularly depended on the division *Sturmgeschutze*, heavily armored tracked vehicles whose 7.5-centimeter (cm) guns were designed to take out point targets for the infantry. The small bands of infantry did not want to attack without a *Sturmgeschutz* and viewed it as a failure in leadership if one was not provided to them. This German officer concluded that

attacking through the ruins had exhausted the infantry and that they were too tired and dulled. With so few troops, there was no rest because every soldier had to be deployed. There were no reserves.

It was especially hard to get necessary supplies forward to the combat infantry troops. Their diet suffered considerably. The surviving troops expressed bitterness toward the *Luftwaffe's* perceived luxury. They had also become resentful toward the special food bonuses the armored units received. The officers maintained that it was pointless to offer the infantry propaganda since none of the promises could be kept. Out in the steppes of southern Russia, all supplies had to be brought from Germany. Besides food, the infantry's major requirement was 8-cm mortar shells, one of the few ways to get to the enemy's holes in cellars and gully cliffs.¹⁷

Senior officers noted that they had gotten into a battle of attrition with the Russians, and although their casualties were very high, those inflicted on the Russians were much greater. As soon as the city was captured, however, the divisions would have to be rested and reorganized. They also stated that it was critical to secure sufficient fodder and straw for the horses.¹⁸

In the last week of September, Paulus launched his second attack on Stalingrad. He exchanged divisions with his northern flank and used the new units to renew the offensive. It pushed the Soviets back into the northern sector of Stalingrad, but casualties and ammunition expenditures were so high that Paulus called off the offensive. The German 6th Army did not begin its third offensive until 14 October. Paulus sent four divisions supported by armor to assist in taking the northern factory complexes. This created a crisis for the defenders, when on the second day, the Germans captured the tractor factory and reached the Volga. Despite the heavy rain, snow, and the consequential mud, the attack made remarkable progress, capturing the ruins of several blocks of houses, the Red October Factory, and some other burned-out hulks. But at the end of the month, the attacks fizzled out from the high casualties and insufficient ammunition. Chuikov's garrison had been reduced to two small pockets, and the block ice in the Volga had created a logistics nightmare, but the Germans were spent. Paulus launched the fourth and final attack on 11 November, based on the arrival of five engineer battalions. The attack advanced very slowly against tough resistance. It, too, expired after several days, and on the 19th, the Soviets launched the counteroffensive that would surround and destroy the German 6th Army.¹⁹

As autumn wore on, *Fremde Heere Ost's* prediction began to become a reality as more and more Soviet units appeared in southern Russia. The Germans used all-source intelligence, but much of their success at the operational and tactical levels resulted from their ability to intercept Soviet radio traffic. They could pick up newly deployed units; however, the Germans did not know the scope of the deployment or where or when the Soviets would attack. Hitler thought the attack would be against Rostov. *Fremde Heere Ost* still believed the major attack would be against Army Group Center, even though more and more units appeared in the south. Finally, they detected a new Soviet Southwest Front headquarters and, on 12 November, concluded that an attack in the near future against the Romanian Third Army could cut the railroad to Stalingrad. If that happened, it would threaten the German forces farther east, forcing them to withdraw from Stalingrad.²⁰

To summarize developments, Hitler had sent the strongest force available toward an objective that would not necessarily win the war. That force could not be logistically supported and advanced into an ever-expanding space against an opponent that was gaining, not losing, strength. He had sent his most powerful army into Stalingrad where it basically destroyed its combat power in costly attacks that played into the enemy's hands. And finally, although intelligence indicated the probability of a major Soviet counteroffensive, the German military leadership resorted to conducting merely cosmetic measures.²¹

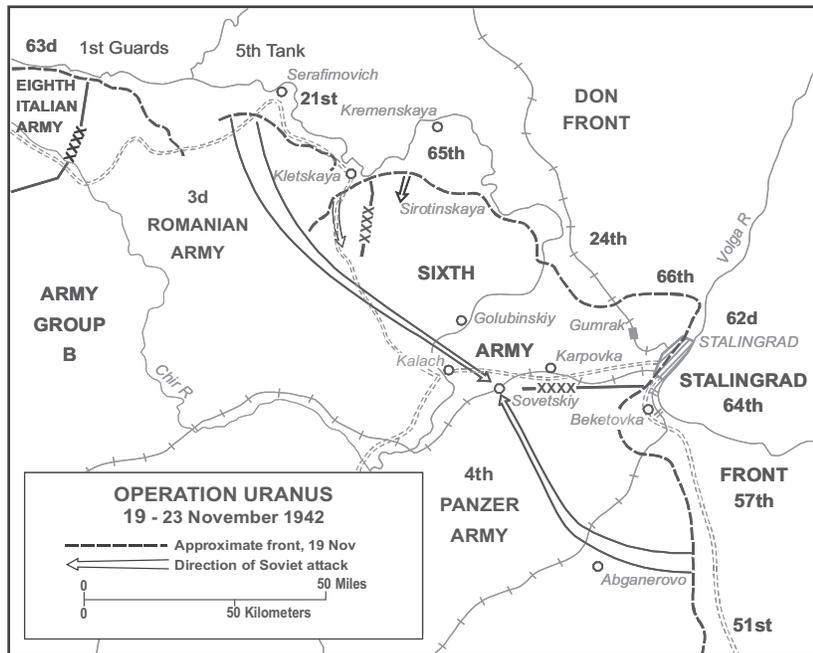
Stalin had dispatched two of the *Stavka's* most capable representatives, Generals A.M. Vasilevskiy and G.K. Zhukov, to oversee operations in southern Russia. On 4 October, they conducted a conference that began the planning process for what would be Operation *URANUS*, the counteroffensive against the German 6th Army. Lieutenant General N.F. Vatutin activated the Southwest Front headquarters that fielded five armies along the Don northwest of Kletskaya. The Don Front kept three armies in the central sector. The Stalingrad Front deployed some five armies in the southern sector. Approximately 1 million men and 900 tanks were to conduct a classic double envelopment of the German 6th Army by breaking through the hapless 3d and 4th Romanian armies.²²

Luftflotte IV had been weakened considerably by the intensive months of combat. By October, the Russian air force wrested air superiority from the Germans as both more and newer equipment arrived. In addition, as the Germans captured more and more of Stalingrad, the Soviet air force could more easily bomb the city. The *Stavka* also dispatched General A.A. Novikov to help coordinate air

operations for *URANUS* (see Map 3). He became such a valued team member that when he stated that the air forces were not yet prepared, Zhukov delayed the opening of the offensive.²³

Timing was critical for the counteroffensive. Zhukov and Vasilevskiy waited for the German 6th Army to expend its combat power in Stalingrad. They also waited for the Anglo-Saxon offensives to succeed in North Africa. By waiting until 19 November, they allowed the ground to freeze, giving their armor greater mobility. The Soviets' artillery preparation was short but powerful, lasting only 90 minutes, after which the offensive launched at 0850. The Romanian defense broke rather easily, allowing Soviet armor to begin the exploitation about 1400. Both Romanian armies collapsed, and there were no Axis reserves to stem the tide. The Soviet forces continued their advance nearly unopposed and on 22 November met at Kalach, encircling Paulus's 6th Army. Some Soviet forces wheeled in against Stalingrad, while others expanded the advance westward to limit any Axis relief efforts.²⁴

As has been oft recounted, the German military was unable to orchestrate a breakthrough, and the *Luftwaffe* was never able to even



approach Hermann Goering's promise to sustain the garrison. At Hitler's headquarters, General Walther Warlimont observed, "On 18 December the Italian Eighth Army collapsed, a decisive factor in the fate of Stalingrad; less than a month later, on 15 January, the Hungarian Second Army disintegrated and on the same day the German ring around Leningrad was broken."²⁵ Paulus and his army were doomed.

The remnants of the 6th Army deployed into positions resembling an egg 40 km wide and 50 km long, surrounded by the Don Front's seven armies. Despite the Axis and Soviet propaganda, the position could hardly be viewed as a fortress since few if any fortifications were in the open steppes west of Stalingrad. Only a small portion of the German defense was in the remains of Stalingrad. Despite the profound weakness of the 6th Army units, the Soviets achieved little success when, in early December, the Don Front attacked the weakest sector of the line in the west and south. As Earl Ziemke and Magda Bauer observed, this probably occurred because the Soviet units had also been weakened by nearly six months of unbroken combat. German signals intelligence also contributed by intercepting Soviet radio messages and alerting threatened sectors in time to stave off disasters. The 6th Army could ill afford such Pyrrhic victories because its limited strength was wasting away.

The final Soviet offensive began on 10 January after a particularly heavy artillery barrage that cut most of the German communication wires and cables. The ground attack opened large holes in the German line that could not be closed. Although the Germans had an auxiliary airbase at Gumrak, the only serviceable one was Pitomnik, through which casualties, specialists, and vital items departed the trap in exchange for a woefully inadequate flow of food, medicine, petroleum products, and ammunition. Soviet units overran Pitomnik on 12 January, ending resupply in the pocket, after which the defenders' position was hopeless. Paulus noted that artillery ammunition would run out on 13 January. Hitler still prohibited a surrender, however, so the slaughter continued. Final resistance ended on 2 February 1943. The 6th Army ceased to exist.²⁶

Tactical Considerations

Evaluating Stalingrad has proved to be difficult, both for participants and for historians. The experience was simply too big. Many participants had never seen a large city destroyed, so the intensity and duration of violence were overwhelming. Soviet and German

propagandists assisted in making a large, confusing phenomenon even more difficult to understand. One should not be surprised, therefore, when subsequent accounts focus on exaggeration and the uniqueness of the fighting. Stalingrad has had a remarkable ability to distort perceptions for a long time. It is perhaps too easy to become fixated on exotic ways to kill a human being, whether with knives, blunt objects, or telescopic rifles. Outside of a few new weapon systems, the nature of the fighting and destruction remained identical to that of Flanders and the Somme in World War I. Veterans of those battles, however, were rare at Stalingrad.²⁷

At Stalingrad, military operations absorbed more and more troop units. This probably resulted from the infinitely greater compartmentalization that limited not only vision but also the range of direct-fire weapons. As a result, more combatants were required to fill or watch those compartments. For the more important compartments, heavy or specialized weapons were required. Combat in urban areas also magnified the dimension of vertical warfare. The massive destruction of Stalingrad limited vertical combat considerably, although any remaining “high ground” remained critical for observation. Some soldiers described the conflict as “the war of rats” because so much of it concentrated on controlling holes and cellars. It was no accident that the German army sent specially trained engineer battalions to Stalingrad. Their job was to blow up buildings with explosives. Those rapidly advancing attacks limited the amount of vertical warfare. Paulus used this method to create “channels” throughout the city. But this required even more combatants to guard the long flanks of the channel and to reduce pockets of resistance that had survived the demolitions. All those additional troops required more ammunition.

The Soviets and the Germans expended an extraordinary amount of ammunition. Between 10 January and 2 February 1943, the Don Front fired some 24 million rifle and machine gun rounds; 911,000 artillery shells, up to 152-millimeter; and 990,000 mortar shells.²⁸ In September 1942, the 6th Army expended 23,035,863 rifle and machine gun rounds, 575,828 antitank shells, 116,932 infantry cannon shells, and 752,747 mortar shells. It deployed 14,932 mines and its soldiers expended 178,066 hand grenades.²⁹ Partisans writing for one side or the other use such figures to assert that the enemy was cowardly or incompetent for such profligate expenditures.³⁰ Despite the strain on these mass armies and the lack of training in many units, such high monthly ammunition expenditures for both sides would suggest that other factors were involved.

Those larger numbers of troops fighting on urban terrain and firing greater amounts of munitions produced very high casualties. There remains a lack of clarity regarding Soviet losses, but General Chuikov observed that the divisions had already been considerably weakened before they reached Stalingrad. He noted that by 14 September one armored brigade had only one tank left, and two other brigades without any tanks had to be sent across the Volga to refit. One division had two infantry brigades that were full, but the composite regiment of another division only fielded 100 infantrymen. Chuikov stated that another division had a total of 1,500 men—“the motorized infantry brigade had 666 men, including no more than 200 infantrymen; the Guards Division of Colonel Dubyanski on the left flank had no more than 250 infantrymen.”³¹

Later, Chuikov went on to explain the effect of the high casualties on his units: “It means that our soldiers (even small units) crawled out from under German tanks, more often than not wounded, to another position, where they were received, incorporated into another unit, provided with equipment, usually ammunition, and then they went back into battle.”³² Early in the battle some 10,000 men of the 13th Guards Rifle Division crossed the Volga but without their heavy weapons. Chuikov threw them into a counterattack against the brick mill and the main train station. The division lost 30 percent of its men in the first 24 hours. By the time the battle ended, only 320 of the original soldiers were left.³³

Records of the 6th Army did survive and indicate that the intensity of combat was high, both before reaching Stalingrad and later during the city fighting. It crossed the Don River on 21 August 1942. From then until 16 October, it recorded the following losses:

	Officers	NCOs and Men
Killed	239	7,456
Wounded	821	30,360
Missing	8	1,127

During this period, 6th Army recorded capturing 57,800 prisoners of war (POWs) and capturing or destroying 1,950 tanks, 805 guns, and 1,969 aircraft. From 13 September to 16 October 1942, during which much of the city fighting took place, it suffered the following losses:

	Officers	NCOs and Men
Killed	69	2,438
Wounded	271	10,107
Missing	3	298

Paulus's army not only fought in the city but also held a defensive front north of the city. On this northern front, the 6th Army captured 5,625 POWs and captured or destroyed 616 tanks and 87 guns. In the city itself, Paulus's army captured 17,917 POWs while capturing or destroying 233 tanks and 302 guns.³⁴

The 71st Infantry and 24th Panzer Divisions

As a rule, Red Army infantry divisions during the war had about 10,000 men, most of whom carried rifles. The dynamics of city fighting wore these units down even further, according to General Chuikov. What city fighting did to the German 71st Infantry Division on 19 September 1942 is shown in Table 1. As can be seen, the regimental support troops suffered proportionately fewer losses than the combat infantry.³⁵ Table 2 shows 24th Panzer Division casualties after it had been withdrawn from the fighting in Stalingrad.³⁶

These statistics should be used with care because they also cover July and August, before Stalingrad. Because the 24th was one of the few panzer divisions in the city, the numbers could represent a statistical aberration. Nevertheless, since it probably was the only division whose records survived, it requires some examination. Since artillery fire was the most destructive agent in both world wars, the figure of roughly 50-percent casualties from artillery is probably typical for conventional urban operations in high-intensity combat. Probably, 11-percent casualties from infantry weapons is too low to be typical. The question remaining is what would have been typical? Just as surprising is the 38-percent loss to enemy air activity. Although this seems very high, the two regiments of armored infantry, one battalion of motorcycle troops, and the antitank battalion all averaged between 9.4-percent and 12-percent casualties from air attacks.

There is also consistency in the losses of the armor regiment and mechanized artillery regiment. It would appear, however, that these losses were incurred during the Battle of Stalingrad rather than before. On 28 September, General Paulus visited the 24th Panzer Division at

Table 1.

191st Infantry Regiment		194th Infantry Regiment		211th Infantry Regiment	
1. Company	25 men	1. Company	12 men	1. Company	24 men
2. Company	17 men	2. Company	22 men	2. Company	-*)
3. Company	20 men	3. Company	14 men	3. Company	-*)
4. Company	32 men	4. Company	23 men	4. Company	28 men
Staff I. Battalion	7 men	Staff I. Battalion	20 men	Staff I. Battalion	-*)
5. Company	10 men	5. Company	7 men	5. Company	27 men
6. Company	13 men	6. Company	13 men	6. Company	22 men
7. Company	12 men	7. Company	10 men	7. Company	-*)
8. Company	40 men	8. Company	23 men	8. Company	43 men
Staff II. Bn	17 men	Staff II. Bn	6 men	Btl Staff II.	31 men
9. Company	7 men	9. Company	8 men	9. Company	-*)
10. Company	13 men	10. Company	9 men	10. Company	44 men
11. Company	19 men	11. Company	13 men	11. Company	-*)
12. Company	35 men	12. Company	27 men	12. Company	38 men
Staff III. Bn	7 men	Staff III. Bn	20 men	Staff III. Bn	17 men
13. Company	53 men	13. Comp.	50 men	13. Company	61 men
14. Company	50 men	14. Comp.	40 men	14. Company	57 men
Regt Staff		Regt Staff		Regt Staff	
Recon Platoon		Recon Platoon		Recon Platoon	
Signal Platoon		Signal Platoon		Signal Platoon	
Eng Platoon	72 men	Eng Platoon	94 men	Eng Platoon	80 men

Bn—battalion
Eng—engineer
Regt—regiment
Recon—reconnaissance

1315, and the operations officer briefed him on the division's considerable losses in armored infantry and tanks. These debilitating losses had occurred in the last several days.³⁷ If these losses are not a statistical aberration, this should serve as a warning for even a temporary loss of air superiority. These losses also suggest the inadequacy of the *Luftwaffe* and the German air defense.

Despite the presence of the 9th *Luftwaffe* Antiaircraft Division, Russian air strikes inflicted considerable damage in the German rear areas. On the same day that Paulus visited the 24th Panzer Division, the 6th Army observed that destroying artillery ammunition depots by day and night raids had become unacceptable. It attributed these losses

Table 2.

Troop Units	Infantry Weapons	Artillery/Mines	Burns	Aircraft Attacks
24th Panzer Div Staff	6.3	73.8	3.0	19.9
24th Panzer Regt	10.5	63.1	3.0	23.4
24th Arm Inf Bde	-	31.1	-	65.9
21st Arm Inf Regt	27.2	63.1	0.3	9.4
26th Arm Inf Regt	30.4	57.2	0.8	11.6
4th Motorcycle Bn	25.5	64.1	0.7	9.7
89th Arm Arty Regt	4.4	70.5	-	25.1
IV Bn " "	16.7	42.9	-	40.4
86th Arm Signal Bn	1.2	65.3	-	33.5
40th Antitank Bn	10.1	77.9	-	12.0
40th Arm Eng Bn	19.3	42.1	0.4	38.2
40th Supply Bn	14.4	21.8	-	63.8
Med Company (mot) 1/	12.5	35.7	-	51.8
Med Company (mot) 2/	-	58.3	-	41.7
40th Bakery Company	-	-	-	100.0
40th Butcher Company	-	-	-	100.0
Attached Units	13.1	77.5	0.9	8.5
Distribution of Casualties	11.3	49.8	0.4	38.5

Arm—armored
 Arty—artillery
 Bn—battalion
 Div—division
 Inf—infantry
 Eng—engineer
 Med—medical
 Regt—regiment

to dispersing the antiaircraft artillery. It consequently ordered two battalions to return from the Don River bridgeheads.³⁸

Just as the 24th Panzer Division's records provide a unique perspective of casualties at Stalingrad, its after-action report constitutes one of the few documents that recounts actual combat experience in the city. Documents are not immune from error, and those who create such reports frequently have their own agendas; nevertheless, the division after-action report provides a rare glimpse into both the strengths and weaknesses of a division fighting in Stalingrad. Consequently, what follows is a summary of that report. The division's after-action report concluded that panzer divisions were created to use their tanks decisively, en masse in open land, not for combat in cities. City fighting

threw away armor's advantages of maneuver and mass. Furthermore, tanks were not designed for urban combat, and the rubble frequently limited the effectiveness of their main guns and hull machine guns. Those tanks remained vulnerable to Soviet tank and antitank weapons, so they could not be deployed singly but in groups of ten.³⁹

Similarly, the armored infantry had never fought in a large city and had to rethink many of its methods. All German infantry loved the *Sturmgeschutz* because they could take cover behind the heavily armored vehicle as it advanced and fired. It was a serious mistake, however, for the infantry to use tanks in the same manner as the *Sturmgeschutz* because the Mark III and IV tanks were too vulnerable to enemy fire. Instead, the report urged that the armored infantry advance with several tanks behind them, providing fire support.

Although tanks and armored infantry had been working together in combat since 1939, they hardly ever had seen each other on the battlefield. Putting tanks and armored infantry in a small compartment consequently required a different, more intimate level of cooperation. The combined arms team in the compartment required a small number of tanks, armored infantry, and engineers. Rubble, narrow streets, and bomb craters restricted the number of tanks that could operate effectively in such a compartment. The document urged all participating commanders to examine the terrain beforehand, noting obstacles, cover, and the enemy situation. An attack plan had to come from this orientation, reaching an understanding of who would do what. It maintained that the only way to obtain true cooperation was by representing all the participating units. The tank commander had to enter the fight knowing how limited his vision would be and how dependent the tanks would be on the other branches.⁴⁰

Mines were the greatest danger for tanks. The German after-action report recommended that when a tank hit a mine, all tanks in the compartment halt and engineers move forward to clear paths. Infantry had to deploy forward to thwart Russian infantry and to protect recovery teams, for it was critical to retrieve damaged vehicles as soon as possible. It was also necessary to withdraw the tanks before sunset for logistics support because the support vehicles were not armored. A panzer division possessed less infantry and artillery than an infantry division, which made it more difficult to replace infantry losses and punish the enemy with artillery fire.

A large number of knocked-out tanks were strewn about Stalingrad in pods, indicating paths that were once traversable. In late September, the VIII Corps counted sixty-two T-34 hulks in its sector, all manufac-

tured in 1942. The XIV Panzer Corps counted forty-eight hulks of various types but could not approach most of them because of enemy fire. The Russians had retrieved several knocked-out tanks but also found it too dangerous to enter no man's land. Russian POWs stated that most of the tanks had been manufactured at Stalingrad's tractor factory.⁴¹ The XIV Panzer Corps reported that on 30 September it had destroyed 24 Russian and 100 non-Russian tanks. The latter consisted of eight American M3 Lee tanks, forty-seven American M3 Stuarts, and twenty-four British Valentines. They were particularly interested in them, noting that they had not been assembled in Russia and contained instructional materials in English. The Russian tanks consisted of two T-34s, three T-60s, and nineteen T-70s, which apparently came from Gorki.⁴²

In the attack, commanders had to make thorough preparations, particularly in synchronizing fire support. It was better for all commanders to meet and, using an aerial photograph, quickly work out who would do what rather than relying on detailed written orders. Before the attack, it was counterproductive to withdraw to protect oneself from the artillery barrage and airstrikes. The Germans discovered that when they did that, the Russians moved forward onto vacated ground. To gain surprise, it was better to attack early in the morning without preparatory fires and then call in adjusted fire as required. In urban operations, it was preferable to halt and regroup upon attaining limited objectives because that was the best way to coordinate the various arms and weapon systems. Informing subordinates of what the daily objective was helped in this process. On occasion, it was necessary to task-organize an armored assault group consisting of tanks, half-tracks, and other units as required. Nevertheless, the purpose of this was still to maximize the infantry combat power and provide one unified command. One constant was the engineers' active participation. To exploit success, reserves had to be kept close by at the ready and yet placed under some cover.⁴³

Severely restricted fields of fire and limited observation made defense in Stalingrad very difficult. It proved advisable to use a main line of resistance and to keep reserves at the ready. Heavy mortars used as batteries were very helpful, and the heavy and light infantry cannons were particularly valuable in the defense. Nightly harassment fire by artillery and heavy infantry weapons had to be coordinated in a division fire plan. These fires had the best results between dusk and about 2230 when the enemy carried out most of its logistics activities. It was important to continue to rapidly shift from the offense to the defense. This meant rapidly digging in, organizing a defense in depth, creating

new reserves, deploying heavy weapons, planning defensive fires, and if possible, laying mines quickly and contacting units on the flanks.⁴⁴

The 24th Panzer Division reported that it was happy with the coordination of operations with the *Luftwaffe*, which it viewed as vital to its success. *Stuka* dive-bombers were able to drop bombs 100 meters in front of their own lines. German soldiers reported, however, that they really needed to know when the last bomb had been dropped. The *Luftwaffe* liaison officer was in an armored vehicle close enough to see the strikes. German efforts in 1942 to link *Luftwaffe* formations with advancing armored units continued to fail. The situation was too fluid, and too often bombs struck German positions. To the 24th Panzer Division, it seemed much more efficient for the *Luftwaffe* to operate deep against the enemy's LOC. Finally, the ground troops wanted to be better informed of what targets the *Luftwaffe* was going after so they could deploy sufficient light and signals equipment to protect themselves.

It would appear at first glance that fighting in Stalingrad required revising the infantry squad into an assault squad. It required standard light machine guns and riflemen, and also needed sharpshooters, automatic weapons, various kinds of grenades, and explosive charges. Those squads required support from one or more *Sturmgeschutz*, several half-tracks armed with 2-cm antiaircraft or 3.7-cm antitank guns. An engineer squad also had to be available to remove mines and tank obstacles. In addition, the after-action report recommended that a flamethrower squad be available. The heavy infantry weapons required sufficient ammunition. Rifle grenades proved very helpful. To counter enemy snipers or marksmen, the trench mirror was indispensable. And finally, the assault squads required enough radios for efficient communication.⁴⁵

Massive destruction severely restricted movement through the city. Avoiding streets reduced casualties. Since all resistance "nests" had to be reduced, it was preferable to organize the advance in depth. It was important not to become imprisoned by linear conceptions of combat because units had to maneuver backward, forward, or sideways to cover a flank. In Stalingrad, a good deal of effort was expended reducing resistance "nests" (mainly cellars). Particularly dangerous areas were street corners and flat open spaces. These areas without cover demanded smoke screens to facilitate crossing.⁴⁶

A glimpse at the German 71st Infantry Division demonstrates the difficulties of such combat. On 24 September, it advanced against heavy resistance toward the theater and command post buildings.

Soldiers had to fight through the remains of each house. POWs said that traditional concepts such as squads and platoons had generally lost their meaning. The Russian soldiers were led by proven officers and commissars and were still receiving active assistance from civilians. Neither side took many prisoners. Russian casualties were high. The 71st divisional artillery engaged Russian craft on the Volga and managed to silence two enemy batteries, destroying a large ammunition depot on the east bank of the river.⁴⁷

The 24th Panzer Division was satisfied with its artillery regiment but complained that it had limited supplies, particularly ammunition. In the attack, division artillery was not that helpful. To limit friendly fire casualties, only one gun was allowed to provide fire support for an assault squad. At the division, the major problem was the inability to observe. At Stalingrad, the key artillery units were observation battalions that were army troops usually at the disposal of a corps headquarters. They set up their specialized equipment at the few quality observation spots. For example, on 28 September as the LI Corps advanced against the Red October and Red Barricade factories, its observation battalions identified twenty-two enemy batteries and engaged fourteen with counterbattery fire.⁴⁸

It was still possible to coordinate fires; however, the armored artillery regiment's armored observation vehicles proved ideal in supplementing the work of the observation battalions. It was simply too dangerous for the infantry divisions' observation sections to attempt to do this. Sometimes it was necessary to call in fire from the entire regiment. This was so effective that POWs commented on the barrages. In urban combat, the armored artillery reconnaissance assets only had radios. They were, however, in Stalingrad long enough to supplement their signals with wire. For instance, the light/flash unit had to be on the tallest surviving structure in the sector. Hence, it was much more efficient to run wire up to its "nest."

The Red Army experience in Stalingrad proved quite similar, with artillery observers perched in the few available aeries.⁴⁹ The panzer division did not have the means to be decisive in counterbattery fire. Its 10-cm cannon had insufficient range and never seemed to have enough ammunition. On occasion, one or two division guns were sent to assist the armored infantry with direct fire. This proved successful, but the guns were particularly difficult to move in the rubble.⁵⁰

The division cooperated with the *Luftwaffe* through radio until its last week in the city when the regimental air support radio unit moved forward to join the tracked observation vehicles. This cooperation sped

up prioritization and efficiency of air and fire support. It cut out one level of communication within the *Luftwaffe* and provided many more eyes with which to evaluate the air strikes' effectiveness. In addition, when a target was taken out, this method allowed aircraft to switch rapidly to new targets.

As has already been mentioned, the 24th Panzer Division maintained that it was wasteful to use an armored division in city fighting. Specifically, the tank regimental headquarters had little to do because the largest tank formation deployed was a battalion. The after-action report stipulated that only in rare situations should elements of an armored division be sent to assist another division. Infantry had to be specially trained to cooperate efficiently with tanks. Deploying tanks without infantry was only successful when the enemy was demoralized and lacked antitank weaponry. Local limited tank thrusts were rewarded with success. On the defense, tanks were to be kept as local reserves and used for counterattacks. The major threats were close-range antitank weapons and sharpshooters. The after-action report concluded that before being returned to 4th Panzer Army, the division lost an exceptionally large number of tanks. Many of those losses were unnecessary, the result of having to work with infantry units whose leaders had no idea of tanks' strengths and weaknesses.⁵¹

Engineers were vital to the combined arms team, but the division commander had serious decisions to make. The engineers maintained the LOC, but when they were also needed for combat engineer missions, the commander had to choose how to allocate them. The 24th Panzer Division recommended deployment by company or platoon. For urban combat they had to be fully equipped with light and heavy infantry weapons and antitank weapons. One of the major problems for German engineers at Stalingrad was their inability to detect rapidly and remove Russian wooden mines.

The Germans had several types of tracked antitank guns. They were very useful in Stalingrad where rubble and partially knocked-down walls provided them with cover up to their hulls. Deployed hull defilade behind infantry, they proved highly effective. Deploying them in the front line, however, made these open-top vehicles too vulnerable to enemy artillery, hand grenades, and sharpshooters. In the defense, they had to be kept even farther back because of enemy observers. Ammunition resupply was difficult for the vehicles. By 1942, it was clear that the version with the 5-cm gun was obsolete.⁵²

Regarding individual weapons and systems, the 5-cm antitank vehicle gained notice not only for its insufficient firepower but also for

its lack of maneuverability. In autumn 1942, German army divisions still did not have telescopic rifles. The 24th Panzer Division concluded that there were numerous instances when marksmen with telescopic sights could have suppressed resistance nests and prevented casualties. The 8-cm mortar proved effective, as did the 7.5-cm infantry cannon. The 15-cm infantry cannon, however, was too difficult to maneuver in the rubble and proved difficult to resupply.

The report concluded with several recommendations. It urged that the armored and armored artillery regiments receive 2-cm antiaircraft guns. The armored infantry needed a company of tracked heavy infantry cannons. Each panzer battalion required one or two platoons of fully motorized engineers. It also recommended further use of Russian volunteers in armored infantry units. Finally, armored personnel carriers were required to evacuate the wounded completely out of the combat area rather than just to the closest aid station.⁵³

These immediate “fixes” indicate the lethality of Russian air operations, insufficient armored infantry firepower in taking out point targets, and insufficient combat infantry and engineers. Since this was one of the most powerful, best-equipped German divisions, one wonders about both the German and Russian infantry units that had much less maneuverability and striking power. This helps explain the phenomenally high casualties of the 13th Guard Rifle Division that was deployed to Stalingrad without its heavy weapons.

Following the visit of a general staff officer to southern Russia on 28 August, the German General Staff’s senior medical officer warned Army Group B’s doctors that in the hot summer months the soldiers should have an improved diet. What was required was a lower fat diet. Soldiers complained of bread that arrived with mold. Sixth Army could do little to alleviate these problems. The plague of flies lasted until the first freeze. The main problem was that Stalingrad was simply too distant to logistically support. After the 6th Army was encircled, its combat troops were supposed to receive a diet of 200 grams of bread per day. Staff and rear area personnel were to receive only 100 grams.⁵⁴

When 6th Army soldiers rapidly began to die in December without detectable symptoms, Berlin flew a pathologist into the pocket. He found that 6th Army soldiers had the medical problems of old men: changes in bone marrow and internal organs and loss of fatty tissue. The actual cause of death was shrinking of the heart. The right ventricle, however, was enlarged. The pathologist concluded that this resulted from exhaustion, exposure, and undernourishment. Ziemke and Bauer suggest that this phenomenon was probably related to the unique

circumstances of being encircled by enemy forces.⁵⁵ It remains possible that not all this damage resulted from the period after the encirclement. The cumulative stress and malnutrition of the previous months' combat may have contributed to this condition.

There is one additional factor that must be mentioned, although it is rather nebulous and remains nearly impossible to quantify. Nevertheless, perhaps Stalingrad's most important revelation was how city fighting impinged on the strategic level of warfare. Regardless of the lack of wisdom behind advancing into southern Russia in 1942, Stalingrad played only a peripheral role in that offensive. Throughout the course of the campaign, however, possession of the city dominated Hitler's thinking. On four occasions, General Paulus reported that city fighting was eroding his army's combat power, but the city had already become a matter of prestige. Hitler made one of his rare public appearances on 30 September at the *Sportpalast* in Berlin. He displayed irritation at the world press's fixation with the Dieppe Raid while ignoring his advance to the Caucasus and Volga. He stated twice that Stalingrad would fall and concluded, "You can be certain no one will get us away from there."⁵⁶ Several days later at one of his military briefings he confessed that Stalingrad was no longer of decisive operational importance but, rather, vital for public opinion around the world and to bolster the morale of Germany's allies. Somehow, a city of relatively minor significance had become a crucial factor in national decision making. Whether this was an isolated miscalculation of a dictator without formal military training or a general tendency in the course of Western warfare gives pause for serious reflection.⁵⁷

We shall never know with certainty the losses caused by the Stalingrad campaign. Approximately 250,000 Axis troops were lost, along with 1,000 tanks and 1,800 guns. Most of the Axis troops were German, but there were 50,000 Austrians killed along with smaller numbers of Romanians, Croatians, and Italians. We also know that there were approximately 50,000 Russian volunteers (*Hilfswillige*) with the German 6th Army, none of whom probably survived the struggle. Of the Axis losses, 150,000 were killed or wounded by January 1943. No one knows the Russian losses, which are estimated at being from four to eight times those of the Axis, and no one knows how many of those losses were civilians.⁵⁸

Notes

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1. Roger J. Spiller, *Sharp Corners: Urban Operations at Century's End* (Fort Leavenworth, KS: Combat Studies Institute, 2001), 50-55; Walther Warlimont, *Inside Hitler's Headquarters, 1939-45*, trans. by R.H. Barry (NY: Frederick Praeger, 1966), 267-86; and Timothy W. Ryback, "Stalingrad: Letters From the Dead," *New Yorker* (1 February 1993), 58-71.

2. Spiller, 50-55; Ryback, 58-71; Records of the German Foreign Ministry, file "Russland (Abwehr) Vertreter des Auswaertigen Amts beim Oberbefehlshaber des Heeres," Der Vertreter des Auswaertigen Amts bei einem AOK, Nr. 657g. A.H.Qu. den 10. Oktober 1942, Stalingrad, signed V. Schubert (hereafter V. Schubert, Stalingrad).

3. John Erickson, *The Road to Stalingrad: Stalin's War With Germany*, Vol. I (NY: Harper & Row, 1975), 298-342; *Hitler's War Directives 1939-1945*, H.R. Trevor-Roper, ed. (London: Sidgwick and Jackson, 1965), 116-21; Hans Doerr, *Der Feldzug nach Stalingrad* (Darmstadt, GE: E.S. Mittler & Sohn, GmbH, 1955), 120-24; and Earl F. Ziemke and Magda E. Bauer, *Moscow to Stalingrad: Decision in the East* (Washington, DC: Center of Military History, 1987), 287-324.

4. Erickson, 343-93; *Hitler's War Directives*, Directive No. 45, 23 July 1942, 129-31; Manfred Kehr, *Stalingrad Analyse und Dokumentation einer Schlacht* (Stuttgart, GE: Deutsche Verlags-Anstalt, 1974), 69-86; and Rolf-Dieter Mueller, "Das Scheitern der wirtschaftliche 'Blitzkriegstrategie,'" in *Das Deutsche Reich und der Zweite Weltkrieg*, Vol. IV, edited by the *Militaergeschichtlichen Forschungsamt* (Stuttgart, GE: Deutsche Verlags-Anstalt, 1983), 936-71. See also H. Dv. g. 90, *Versorgung des Feldheeres, OKH/GenStdH/Gen.Qu.*, 1938, and H. Dv. g. 11a/2 *Erfahrungen aus dem Ostfeldzug fuer Versorgungsfuehrung 1943, OKH/GenStdH/GenQu* 2 Nr. I/17591/42.

5. See previous note. See also Pz AOK 4 file 28183/17 *Chef-Notizen zum KTB Nr. 5* (Teil III), entry for 8 September 1942.

6. KTB/OKH/GenStdH/Organisations Abt., 1 August-31 December 1942, Microcopy T-78/roll 417/frames 6386529-531; Spiller, 50-55; Doerr, 30-52; and Ziemke, *Stalingrad to Berlin: The German Defeat in the East* (NY: Fromm Int'l, January 1986), 17-19.

7. *AOK 6 Ia Az.Nr. 3044/42 g.K. A.H.Qu. den 19. August 1942, Armeebefehl fuer den Angriff auf Stalingrad*, reprinted in Doerr, 127-29; see also 40-45; and *Battle for Stalingrad The 1943 Soviet General Staff Study*,

Louis Rotundo, ed. (Washington, DC: Pergamon-Brassey's International Defense Publishers, Inc., 1989), 26-30, 41-68. The pertinent German Army manual for city or trench warfare was *Geheim Merkblatt, Angriff gegen eine staendige Front (StoBtruppe)*.

8. Spiller, 50-55; Anthony Beevor, *Stalingrad* (NY: Viking Press, 1998), 119; and Ziemke, 37-42.

9. Vasili I. Chuikov, *The Battle of Stalingrad*, trans. by Harold Silver (NY: Ballantine Books, 1964), 50-72; *Battle for Stalingrad: The 1943 Soviet General Staff Study*, 229-57; Klaus Maier, "Total Krieg und Operativer Luftkrieg," in *Das Deutsche Reich und der Zweite Weltkrieg*, Vol. 2, edited by *Militaergeschichtliches Forschungsamt* (Stuttgart, GE: Deutsche Verlags-Anstalt, 1979), 43-69; Kenneth R. Whiting, "Soviet Air Power in World War II," *Air Power and Warfare*, Proceedings of the 8th Military History Symposium, U.S. Air Force Academy, 18-20 October 1978, Alfred F. Hurley and Robert C. Ehrhart, eds. (Washington, DC: Office of Air Force History, 1977), 98-127; Cajus Bekker, *The Luftwaffe War Diaries*, trans. by F. Ziegler (London: Macdonald, 1964); and Spiller, 50-55.

10. V. Schubert, Stalingrad; V. Schubert's Nr. 667, Inf 2081 Mg. *A.H.Qu., dem 26. Oktober, Inh.: Stimmung der Bevoelkerung; Der Vertreter des Auswaertigen Amtes bei einem Panzer AOK*. Nr. 126, OU den 13. Oktober 1942, *Geheim, Betr.: Fahrt nach Stalingrad*, signed Muehlen; *AOK 6, Fuehrungsabteilung KTB Bericht ueber eine Fahrt nach Stalingrad*, Menzel, Major i.G. V.O./OKH b. AOK 6 of 25.9.42; and Spiller, 50-60.

11. Ziemke, 37-41.

12. The NKVD eventually relented and allowed some women and children across the Volga. See Chuikov, 50-168; Beevor, 92-144; and Ziemke, 37-43.

13. Doerr, 55-61, and Ziemke, 41-42.

14. Erickson, 343-93, and Ziemke, 23-36.

15. One of his senior advisers attempted to defend List, which precipitated one of Hitler's most violent outbursts against the officer corps. The dictator announced that he would no longer eat his meals with the officers and directed that stenographers be brought in from Berlin to take down all conversations. Warlimont, 241-60, and Beevor, 123. Warlimont maintained that Halder's departure was precipitated by the latter's argument with Hitler on 24 August. See also Kurt Zeitzer, "Stalingrad," *The Fatal Decisions: Six Decisive Battles of the Second World War From the Viewpoint of the Vanquished*, William Richardson and Seymour Freidin, eds., trans. by Constantine Fitzgibbon, (London: Michael Joseph, 1956), 115-65. The new chief of the General Staff somehow forgot to mention his opening speech but did note that the atmosphere was clouded by mistrust and suspicion.

16. Chuikov, 86-116; Beevor, 129-45.

17. On 18 September, the 6th Army reported there were severe shortages of 10-cm cannon, 8-cm mortar, 5-cm, and 7.5-cm (antitank) shells. AOK 6 *Abt Ia*, *Tagesmeldung*, A.H.Qu. den 18.9.42 in folder AOK 6 *Fuehrungsabteilung Anlagenband zum KTB Nr. 13, Russland*. General Chuikov claims that he ordered his troops to maintain such close physical proximity, which is probably true. Where the idea originated remains open to question, Chuikov, 80.
18. Records of the German 6th Army, *V.O./OKH.b. AOK 6, A.J.Wue.*, 25.9.42, *Bericht ueber eine Fahrt nach Stalingrad*, signed Menzel.
19. Chuikov, 116-94; Ziemke, 44-46; and Ziemke and Bauer, 382-470.
20. Ziemke, 48-49. *Fremde Heere Ost* was the German Army intelligence organization that monitored the Soviet Union.
21. *Ibid.*
22. *Ibid.*, 50-52.
23. Whiting; Maier; and Bekker, 278-94.
24. Ziemke, 52-55.
25. Warlimont, 285; and Ziemke, 55-65.
26. *Stalingrad Memories and Reassessments*, Joachim Wieder and Heinrich Graf von Einsiedel, eds., trans. by Helmut Bogler (London: Arms & Armour Press, 1998), 67.
27. Records of the German Foreign Office, *Der Vertreter des Auswaertigen Amts beim Pz.-AOK 4* (number four crossed out), A.H.Qu., den 6. Oktober 1942, *Betr.: Stimmung der russischen Truppe unter der psychologischen Wirkung des Stalin-Befehls*, in folder *Russland (Abwehr)*.
28. Ziemke, 79-80.
29. *KTB A.O.K. 6 Ia, 17. Oktober 1942*, file 30155/33, reproduced on microcopy T-312, roll 1458, frames 961-63.
30. See, for example, Chuikov, 39-41 and 80-93; and Beevor, 127-29, 141-57.
31. Chuikov, 92-93, and *Soviet Casualties and Combat Losses in the Twentieth Century*, Colonel General G.F. Krivosheev, ed. (London: Greenhill Books, 1997), 123-25.
32. Chuikov, 107.
33. *Ibid.*, 131-36; and Zhukov, 373.
34. *KTB A.O.K. 6 Ia, 17. Oktober 1942*, file 30155/33, reproduced on microcopy T-312, roll 1458, frames 961-63.
35. *V.O./OKH b. AOK 6, Bericht ueber eine Fahrt nach Stalingrad, A.H. Wu.* 25.9.42 signed Menzel. Excluded from these totals are support troops, lightly wounded soldiers, and soldiers on leave or on detail.
36. *Records of the 24th Panzer Division, Anlage 5 z. 24.Pz.-Div. Ia/Op. Nr. 365/42 geh. of 10.11.42, Taetigkeitsbericht der Sanitaets-Dienst vom 28.6. bis 31.10.1942.*

37. AOK 6 KTB, *Frontfahrt des Oberbefehlshabers am 28.9.1942* in folder *Ia/Ic Anlagenband z KTB 13, Russland*.
38. Ibid.
39. Records of the 24th Panzer Division, *Anlage 2 zu 24. Pz.-Div.Ia Nr. 347/42 geh. V.5.11.1942, Richtlinien fuer Zusammenarbeit zwischen Panzer und Grenadieren*.
40. *Richtlinien fuer Zusammenarbeit zwischen Panzer und Grenadieren*.
41. AOK 6 KTB, *V.O./OKH bei AOK 6, A.H.Qu. den 27.9.42 an OKH/Op.Abt. Bezug: Fernspruch vom 19.9.betr. abgeschossene, fabrikneue Feindpanzer* in folder *Ia/Ia Anlagenband z KTB Nr.13, Russland*.
42. AOK 6 KTB, *XIV. Pz.K. 1.10.42 Oblt. Schaefer-Hansen, 22.45(Uhr)* in folder *Ia/Ic Anlagenband z KTB Nr. 13, Russland*; and *Richtlinien fuer Zusammenarbeit zwischen Panzer und Grenadieren*.
43. *Richtlinien fuer Zusammenarbeit zwischen Panzer und Grenadieren*.
44. Ibid.
45. Ibid.
46. Ibid.
47. *AOK 6 Ia Lagenmeldung, 24.9.42 (LI Corps)* in folder *Ia/Ic/AO Anlagenband z KTB Nr. 13, Russland*.
48. When Zhukov briefed Stalin on 12 September on the specific difficulties of fighting in Stalingrad, he mentioned that the Germans held several key elevations. This allowed them to mass and shift artillery fire. See Zhukov, 380-82. *AOK 6 Ia Zwischenmeldung Datum 28.9.42, LI.A.K. meldet 16.45 Uhr* in folder *Ia/Ic Anlagenband z. KTB Nr. 13, Russland*.
49. See Beevor, 148-49.
50. See also *AOK 6 Abt Ia, Tagesmeldung A.H.Qu. den 18.9.42 and AOK 6 Ia Zwischenmeldung, A.H.Qu den 20.9.42* both in folder *Ia/Ic Anlagenband z KTB Nr. 13, Russland. Richtlinien fuer Zusammenarbeit zwischen Panzer und Grenadieren*.
51. Ibid. On 4 October, the 24th Panzer Division was able to deploy thirty-eight tanks: two command tanks, nine short-barreled Mark IIIs, seventeen long-barreled Mark IIIs, and five short-barreled and five long-barreled Mark IV tanks. See *AOK 6 Ia Morgenmeldung Datum 4.10.42, 4.50 Uhr* in folder *Ia/Ic Anlagenband z KTB Nr. 13, Russland*.
52. *Richtlinien fuer Zusammenarbeit zwischen Panzer und Grenadieren*.
53. Ibid.
54. AOK 6 KTB, *Der Heeresintendant im OKH GenSt.dH./GenQu. Az 809 z(I.3) Nr. I/35/800/42 H.Qu.OKH den 23.8.1942 An Armeeintendant 6* in folder *Ia/Ic/AO Anlagenband z KTB Nr. 13, Russland*; and *Stalingrad Memories and Reassessments*, 51.
55. Ziemke, 69.

56. Ian Kershaw, *Hitler: 1936-1945 Nemesis* (NY: W.W. Norton & Co., November 2000), 534-57; "Der Fuehrer sprach zum deutschen Volk," *Ost Front*, 1 October 1942, *Folge 413 (Ausgabe A)* in *AOK 6 KTB*, folder *Ia/Ic Anlagenband z KTB 13, Russland*; and Ziemke, 44.

57. *Stalingrad Memories and Reassessments*, 22; and *Hitler's Lagebesprechungen*, Helmut Heiber, ed. (Stuttgart, GE: Deutsche Verlag-Anstalt 1962).

58. The Red Army captured some 91,000 Axis troops at Stalingrad. Of that total, fewer than 6,000 ever returned home. *Soviet Casualties and Combat Losses*, 124; Beevor, 439-40; and Ryback.

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