THE EFFECTS OF OPERATIONAL ENCIRCLEMENTS

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ABSTRACT

THE EFFECTS OF OPERATIONAL ENCIRCLEMENTS, by Major Rick Gutwald, USA, 42 pages.

This monograph examines and analyzes two encirclement operations from the Russo-German Front of 1944 in order to determine their costs and benefits to the overall campaigns.

Military theorists expect successful encirclement operations to produce high payoffs in war. Unfortunately, say these theorists, encirclements also incur great risks. Soviet encirclement operations at Korsun and Minsk in 1944 validate the promise of increased benefits, but demonstrate that the risks can be overcome by employing sound battlefield techniques and superior numbers. A comparison of the two World War II operations against contemporary warfare conditions identifies surprise, air superiority, and nuclear weapons as major factors contributing to the success or failure of encirclements.

This paper concludes that encirclements remain applicable today, but they are not a remedy for all situations. Additionally, campaign planners should know the pros and cons of encirclement employment and should consider incorporating it in their plans when possible.

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"Has anything changed since the battle of Cannae? Did the inventions of gunpowder in the Middle Ages change the laws of strategy? I am skeptical as to the value of technical inventions. No technical novelty has ever permanently revolutionized warfare."–Adolf Hitler[1]

I. INTRODUCTION

Military theorists, strategists and AirLand Battle doctrine expect encirclement operations to produce favorable outcomes in war. An analysis of two World War II campaigns on the Russo-German Front provides evidence that encirclements can influence favorably the success of mobile, armored operations. These encirclements, however, incur some risks, and are not a panacea for all campaigns. Nevertheless, the historical analyses demonstrate that the contributions of encirclements to the overall campaign can outweigh these negative factors. Furthermore, they reinforce expectations that encirclements will contribute to operational success on the modern battlefield. As a result of these historical analyses, army planners should understand some of the pros and cons of encirclement operations, and where possible, include encirclements in their campaign planning.

Hannibal's victory at Cannae in 216 B.C., began as a double envelopment and ended as a decisive encirclement. Since that time, military theorists and strategists have praised the encirclement as an important means of increasing the probabilities of battlefield success. Field Manual 100-5, Operations, echoes these praises when it states that an encirclement can completely destroy an enemy force.[2]

In his book On War, Carl Von Clausewitz supports the idea that encirclement operations offer great results, but he adds that the operations also incur great risks:

> Both in strategy and in tactics a convergent attack always holds out promise of *increased* results, for if it succeeds the enemy is not just beaten; he is virtually cut off. The convergent attack, then, is always the more promising; but since forces are divided and the theater is enlarged, it also carries a greater risk. As with the attack and defense, the weaker form promises the greater success.
>
> All depends, therefore, on whether the attacker feels strong enough to go after such a prize.[3]

In this quotation, the terms "convergent attack" and "cut off" equate to a double envelopment ending in encirclement. This transition from envelopment to encirclement is not unusual. Field Circular 100-15, Corps Operations, says that if an envelopment is successful, the attacking force most likely will encircle part or all of the enemy's force, providing ". . . opportunities for entrapment and defeat of the enemy."[4] Cannae provides a classic example of how this transition can occur.

In his statement above, Clausewitz is saying that an encirclement offers greater benefits, but because the risks are higher, it also offers greater opportunities for failure. He believed the risks were greater because an enemy might intercept and isolate one or both enveloping forces before they could complete their link-up.[5]

Clausewitz's concern was mostly about the risks of conducting a double envelopment. It is important to note that a force can achieve an encirclement without conducting a double envelopment. Encirclements can develop from penetrations, turning movements, infiltrations, or single

envelopments.[6] Furthermore, the use of surprise, speed, concentrated forces, economy of force, and other measures can reduce the dangers of a converging attack. With this in mind, what would Clausewitz say if a force could reap the benefits from conducting an encirclement while keeping the liabilities at an acceptable level? Perhaps he would reply:

> The risk of having to fight on two fronts, and the even greater risk of finding one's retreat cut off, tend to paralyze movement and the ability to resist, and so affect the balance between victory and defeat. What is more, in the case of defeat, they increase the losses and can raise them to their very limit--to annihilation. A threat to the rear can, therefore, make a defeat *more probable*, as well as *more decisive*.[7]

Another theorist of the same era, Baron de Jomini, expressed similar thoughts about using a turning movement to threaten the enemy's rear. He also disliked the potential risks:

> The combination of these two methods--that is to say the attack in front by main force and the turning maneuver--will render the victory more certain than the use of either separately; but, in all cases, too extended movements must be avoided.
> . . . operations to cut an enemy's line of communications before giving battle, and attack him in the rear. . . are much more likely to be successful and effectual. . . .[8]

Both Clausewitz and Jomini predict advantage for an army that attacks an enemy's rear. Encirclements promise the same advantage.

Obviously armies have changed since the days of Clausewitz and Jomini. Nevertheless, at least two contemporary theorists, B.H. Liddell Hart and J.F.C. Fuller, share and thus reinforce Clausewitz's and Jomini's views on turning movements, envelopments, and rear attacks. In expressing his

thoughts on turning movements, Liddell Hart compares the weaknesses of an army to that of a human:

> An army, like a man, cannot properly defend its back from a blow without turning round to use its arms in the new direction. 'Turning' temporarily unbalances an army as it does a man, and with the former the period of instability is inevitably much longer.[9]

Encirclements, by virtue of their threat to an enemy's rear, promise the same unbalancing.

While Liddell Hart prefers to unbalance the enemy by turning him around, J.F.C. Fuller favors the operation that simultaneously holds the enemy in the front and attacks his rear:

> The decisive point is . . . the rear of an army, for its command is established there, and from there--generally speaking--run its line of communications to its supply base. . . . the enemy must first be held, and it is from this holding operation that the rear attack should be developed.[10]

The classical and contemporary theorists all claim advantage for an army striking its enemy's rear. Clausewitz promotes the envelopment/ encirclement, but dislikes the risk. Jomini and Fuller like to hold the enemy in front and attack him in the rear, but Jomini also dislikes the risks. Liddell Hart prefers to unbalance the enemy by turning him around. Each of these theorists is promoting the same advantages offered by the encirclement. *The major disadvantage is the increased risk. Therefore, if* one could control, reduce, or ignore the risks, the encirclement would offer excellent opportunities for great success. Considering Clausewitz's statement about increased results, the encirclement theoretically could become the most promising method of attack. If this is correct, where is

the historical evidence to support this claim? More important, what are the costs and benefits of conducting these encirclements? Obviously Cannae is too primitive a battle from which to draw contemporary conclusions. One could even argue that the World War I "Cannae" at Tannenberg provides unacceptable evidence by today's military standards. On the other hand, the large operations on the Russo-German Front of World War II offer more similarities to present-day armies.

This study will examine and analyze two encirclements from the Russo-German Front of 1944 in order to determine their costs and benefits to the overall campaigns. It will reassess these costs and benefits through a contemporary analysis, identifying the factors that have changed since World War II. It will provide overall conclusions resulting from the synthesis of the historical and contemporary analyses. Finally, it will address the implications of encirclement operations for future campaign planning.

II. ENCIRCLEMENT OPERATIONS

By the end of December 1943, the armies of the First Ukrainian Front had liberated Kiev, broken through the German line in the Berdichev area, and were aiming south east towards the Bessarabian Bug River. Further south, the Second Ukrainian Front also had broken through and was likewise aimed at the Bug in a southwesterly direction. If they continued, the two frontal thrusts would meet near the Rumanian Frontier in the Uman-Pervomaysk area, in the rear of the German 8th Army (see Figure 1).

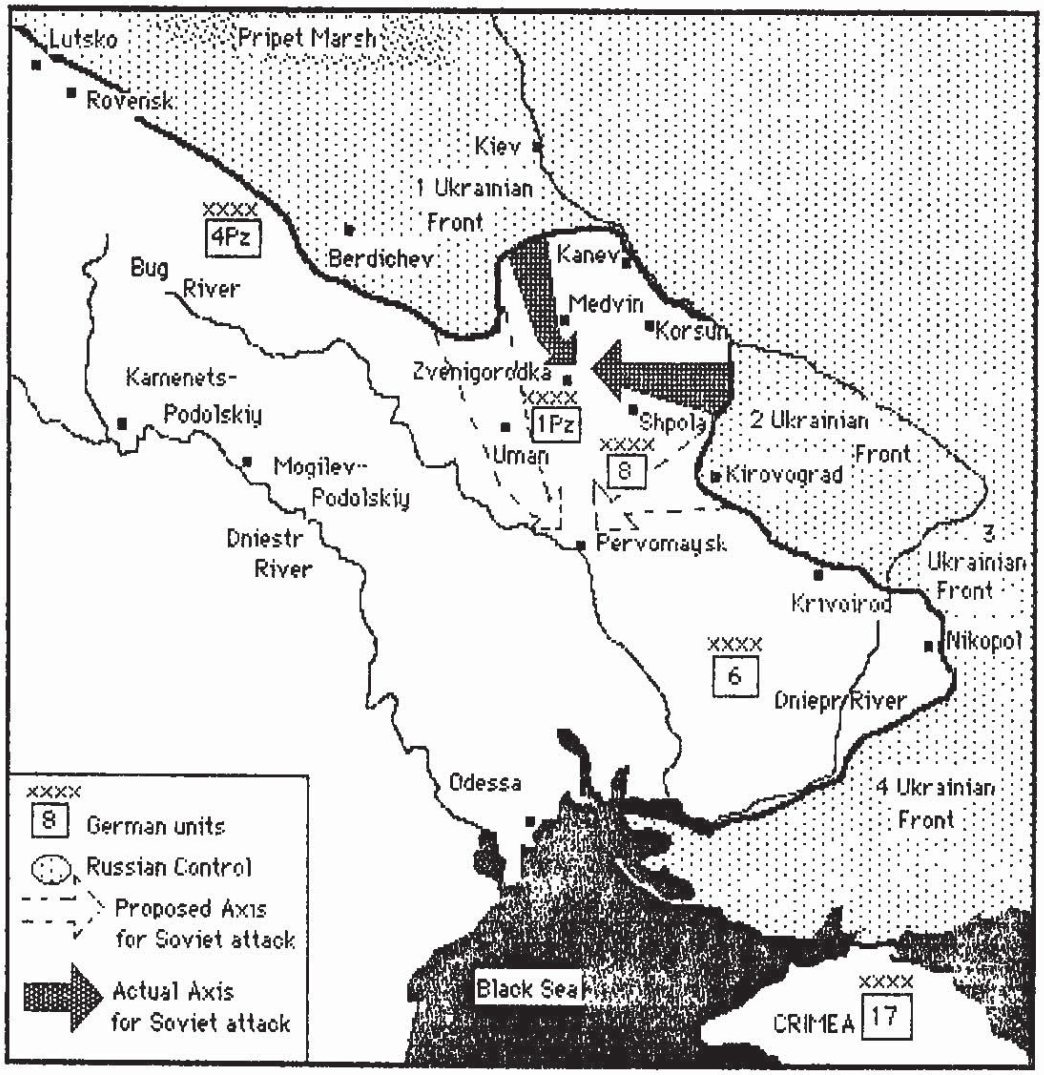

FIGURE 1

If this large-scale operation succeeded, then not only would 8th Army be encircled but its annihilation would so advance [the South-West Front Commander's] . . . moves that the German 6th Army would also be inevitably doomed. Nothing could then save the German Seventeenth Army in the Crimea from annihilation. It was, in fact, the objective which Stalin had been pursuing for a long time--the annihilation of the German southern wing, the great victory.[11]

On the opposite side, a determined Hitler planned to retake Kiev. Therefore, he demanded that his German forces retain a position along the Dniepr River as a base for future offensive operations.

After twelve days of intense fighting, the planned Soviet offensive fell short of encircling the German 8th Army. The Russians drove westward across the Dniepr but were halted by stiff German resistance immediately after capturing the town of Kirovograd. Two German salients remained as a result of the Russian penetration, one to the northwest and the other to the southeast of Kirovograd.

Both adversaries considered the northern salient as the most important of the two. This salient divided the First and Second Ukrainian Fronts and represented a constant danger to their flanks. It also presented Hitler with a favorable position to thrust across the Dniepr and recapture Kiev only forty miles away.

The Soviets were still pursuing the same operational objective, but now it was on a smaller scale. Instead of conducting a major strategic encirclement with a link-up in the Pervomaysk area, the Russians intended to attack portions of the German 8th Army by slicing off the 5,000 square mile salient.

The Soviets attacked on 24 January with two of four armies from the Second Ukrainian Front in the south. After two days of intense fighting, the Russian attack force ruptured the German lines. On 26 January three armies of the First Ukrainian Front attacked from the north, and by 28 January the two pincers had linked up at Zvenigorodka.[12] Having effected the link-up, the Russians quickly committed two additional reinforced tank armies (5th

and 6th Guards Tank Armies) with the purpose of forming a stable outer perimeter of four armies as protection against German counterattacks.[13]

The area between the Soviets' present position near Zvenigorodka and the Rumanian frontier was entirely undefended by Germans. From a strategic point of view, this was the opportunity that the Soviets had sought. They could now continue their attack west and cut off the German southern wing. The Germans recognized this immediately and expected the Soviets to by-pass the pocket, leaving it well guarded, and continue to the Bug River.

Ironically, the Russians overlooked the Germans' disastrous predicament. They believed incorrectly that their double envelopment had surrounded the entire German 8th Army. The Soviet leaders were convinced they had another "Stalingrad" of nine motorized German divisions and one Waffen SS division--a total of more than 100,000 men. As a result, the Russians were determined not to let the Germans escape.[14]

Actually the encirclement only held the XI Corps of the 1st Panzer Army and XLII German Corps of the 8th Army, a total of 56,000 men. One of the reasons for this Soviet miscalculation was the Germans' intentional camouflaging of one of the encircled units, the 112th division. Although it was only a divisional size unit, the 112th was officially named Corps Detachment "B" because it was a composite of three badly mauled divisions.

Another reason for the Soviet misconception may have come from the fact that other regiments from at least five other divisions resided within the pocket. The Soviets believed that all five of these divisions were present.[15]

Whatever the reason for the error, the Soviets planned to assault the encirclement with the bulk of two army groups--initially a total of six and later seven armies.

The Russian inner perimeter forces began digging in, preparing for 8th Army's suspected breakout attempt toward the German XLVII Corps in the south. The Soviet outer perimeter forces also began forming two defense zones and laying minefields. The Russians grouped 80 artillery regiments between the two perimeters, a distance of approximately 70 to 80 kilometers. In all, the Russians had:

> . . . crammed no less than twenty-six rifle divisions and between seven and nine tank or mechanized corps into this battle-ground from the north-west and east. The reason for their plurality . . . was that Soviet divisional strengths were also well down by now. . . .[16]

The Germans noticed the Soviets' overcautious moves and correctly determined that the Russians were transitioning to the defensive as a prerequisite for reducing the pocket. Hitler halted all breakout attempts as a result, and on 31 January, ordered the two pocket corps to reestablish an all-around defense. This order now required the pocket forces thinly to cover over 60 miles of frontage.

Had the Soviets assessed the situation correctly, they would have attacked the pocket's rear before the Germans could have properly defended it. Instead, the Russians established their defensive containment force.

If the two surrounded German Corps were fortunate that the Russians did not attack their rear on 31 January, they were even luckier the next day when a blizzard hit the area. The snow and wind made certain that no Soviet air attacks or major ground attacks would interfere with the pocket's

defense. On 2 February, however, the German Army's fortune took a turn for the worse when the weather broke and the snow began to melt. Now, not only did the Germans have to contend with the Russian attacks against the pocket's perimeter, but the Ukrainian mud (called *Rasputitsa*) also hindered movement within the pocket. As a result, the Germans experienced great difficulty shifting forces in response to Russian attacks. Their inability to transfer forces within the pocket eventually required them to reduce the size of their fronts. As the encirclement receded from the constant Soviet attacks, the continuity of the front and the airfield at Korsun were the German Corps' primary concerns. The German force could ill afford a rupture in its lines or the loss of its only means of resupply. The Soviets understood the value of the airfield and made Korsun their focal point for the first twelve days of battle.

While the two German Corps repelled the continuous Russian attacks, Hitler and his staff were quickly reacting to the crisis. Immediately after the encirclement, he authorized Field Marshal Eric von Manstein to concentrate two strong armored groups, a total of nine Panzer divisions, to reestablish contact with the forces in the Korsun pocket.

Manstein intended not only to employ the armored forces in relief of the pocket, but also to annihilate the strong enemy forces in a pincer action similar to that used by the Russians. They would intercept the Soviets north of Zvenigorodka, defend the city of Kanev on the Dniepr, liberate the encircled divisions, and close the huge gap between 1st Panzer Army and 8th Army. The encirclement only had to hold out five to ten days before the relief began.[17]

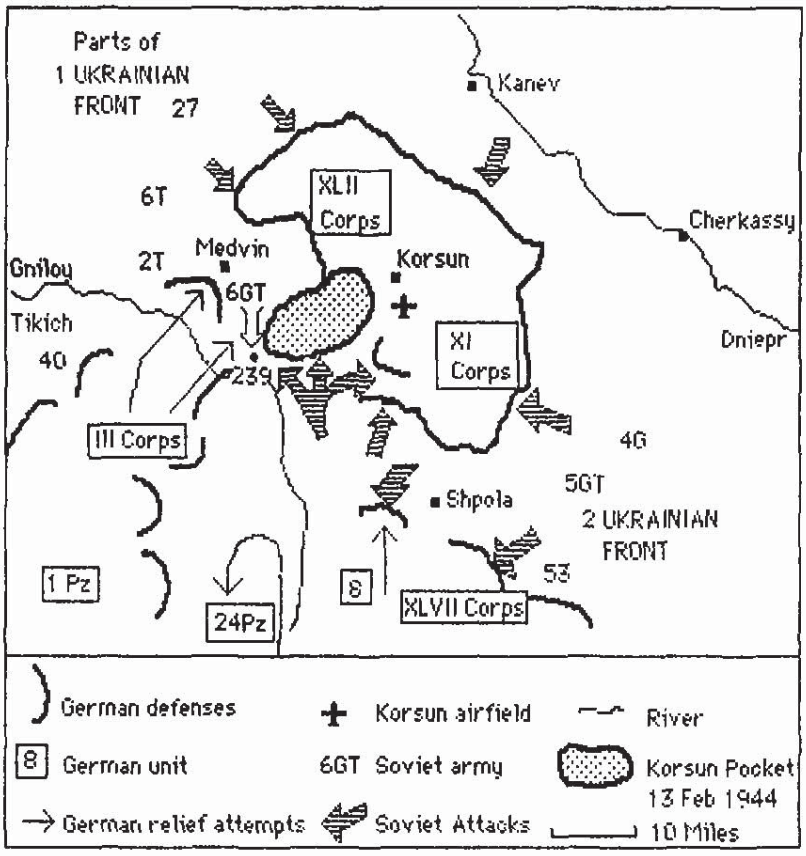

FIGURE 2

Manstein ordered 1st Panzer Army and 8th Army to release III Panzer and XLVII Corps respectively for the planned assault. Each corps consisted of four divisions of varying strengths. Additionally, Hitler ordered the 6th Army to shift its 24th Panzer Division two hundred miles to the north so it could become the spearhead of XLVII Corps' attack.

Adopted on 1 Feb, the plan called for 24th Panzer division and the XLVII Corps to attack north (see Figure 2) on 4 Feb:

> . . . [The] XLVII Corps was to jump off from the area of Shpola, thrusting into the rear of the Russian forces that were threatening the southern front of XI Corps. Simultaneously, III Panzer Corps was to launch a surprise attack in the general

> direction of Medvin, where enemy units were operating against the southwest front of the pocket defended by XLII Corps. After destroying these Russian units, III Panzer Corps was to pivot due east to effect close co-operation with the attacking elements of XLVII Corps coming from the south.[18]

A short while before the relief operation began, the situation in the German 6th Army's portion of the theater deteriorated. The Russians had broken through near Nikopol and were threatening the entire Army. 6th Army subsequently requested assistance because it had no reserve. In reply, Hitler ordered the 24th Panzer Division to return to its parent unit in the south. Hitler refused to change his decision despite his subordinates' protests that the 24th was critical to the Korsun relief mission and would not arrive in time to be of assistance to 6th Army, .

In light of the departure of the 24th Division and the fact that the Russians were attacking and tying down potential relief divisions of the III and XLVII Corps, the German subordinate commanders requested a change to the original relief plan. They preferred that III Corps attack in an easterly direction to facilitate an earlier link up with XLVII Corps. They were concerned that the mud and the possibility of reduced relief forces might make the proposed double envelopment too ambitious. Hitler's headquarters turned down this request.

By the end of 3 February, the strength of XLVII Corps had been whittled down to 27 tanks and 34 assault guns remaining:

> At that point it became clear that Eighth Army could do no more than to tie down enemy forces by continued holding attacks. Thus the original plan which provided for two converging relief thrusts had to be abandoned.[19]

On 4 February, III Corps launched its attack to the north. After progressing six miles, four Russian tank corps and *Rasputitsa* halted the attack. The III Corps commander refused to give up the northerly attack and by 8 February had pushed and finally exhausted his lead regiments only 19 miles from the edge of the pocket.

Hitler finally realized that the III Corp's northerly attack was a mistake, and he gave permission for a direct thrust eastward. On 11 February, the III Corps commander turned his eastern flank division into a spearhead, attacked east, and established a bridgehead on the Gniloy Tikich stream. Soviet resistance stiffened and the German Corps was unable to expand the bridgehead until the evening of 14 February.

Once the corps was moving again, its next objective became Hill 239:

> . . . a commanding spot in the approaches to the pocket. . . . If it could be captured, the relief operation was as good as accomplished. From there to the edge of the pocket was a mere six miles.[20]

The Soviets also realized the value of Hill 239 and for the next three days made every effort to ensure that the Germans did not occupy it. By midday on15 February, Manstein realized that III Corps had probably exhausted its ability to attack, and he authorized the pocket forces to breakout. The following message was sent to the encircled corps: "Capacity for action of III Corps limited. Group Stemmermann [the name for the two pocket corps] must perform breakthrough as far as Zhurzhintsy/Hill 239 by its own effort. There link up with III Panzer Corps."[21] Unfortunately for the Germans, the message failed to tell Group Stemmermann that Hill 239 was not in friendly hands.

The two encircled corps had been having a difficult time maintaining the continuity of their defense, and the breakout message had come just in time. By 3 Feb, the ring of encirclement had been reduced by Soviet pressure to an average radius of 37 km. On 7 Feb it was 27 km, on 9 Feb 16 km, on 13 Feb 11 km, and on 15 Feb it was down to 7 km.[22] The pocket forces were in relatively good condition because they had received air resupply throughout the operation except, of course, when the *rasputitsa* prevented landings or when the Soviets conducted air-interdiction. Their biggest problems were a lack of man power, their inability to move quickly in the mud, and their inability to evacuate the ever-increasing wounded.

The breakout started on 17 February according to plan and under good control. A bayonet assault started on schedule and surprised the Russians. The penetration continued with 33,000 men following closely behind the spearhead. At the same time, the rear guards held fast to guarantee success. At daybreak, near Hill 239, the breakout force ran into unsuspected heavy concentrations of anti-tank weapons, armor, and artillery. The two German corps split into many small groups and were forced to abandon all vehicles and heavy weapons. Moreover, the situation required them to abandon their many wounded comrades.

The ambush created considerable confusion and caused the breakout to veer south of III Corps' position. The breakout force found their advance blocked by the Gniloy Tikich stream, with the Russians holding the near bank. They overcame the Russians and swam the stream, leaving their personal weapons behind. As they crossed, Soviet artillery and direct fire hit both banks of the stream. Those who survived the crossing linked up

with the forward elements of III Corps a short time later. The rear guard successfully covered the breakout of the main body and made their way westward according to plan. They arrived at III Corps' location on the evening of 17 February. Of the 56,000 men initially surrounded at Korsun in January 1944, nearly 35,000 returned to friendly lines.[23]

Although they lost almost all their weapons and equipment, the Germans considered the breakout at Korsun a great success because they saved two-thirds of their encircled personnel. On the other hand, the encirclement was a success for the Soviets because they removed six and one-half German divisions from the battlefield over a period of 24 days, and caused considerable damage to III and XLVII Corps. Regardless of the actual losses at Korsun, which are still disputed by both sides, the real measure of success should be the effect Korsun had on the overall campaign.

The attacks by III and XLVII Panzer Corps, the presence of the muddy season, and the physical disarray of Soviet forces after the breakout interfered with the Soviet's ability to continue offensive operations. Nevertheless, the Russians showed signs of fresh offensive preparations as early as 22 February, and resumed the attack in the beginning of March.[24] The Soviets were preparing for another pincer operation against the German southern wing. The 1st Ukrainian Front in the north would launch a large-scale attack south of the Pripet Marshes in order to strike towards Poland. Simultaneously they would wheel southwards towards the Dnestr River, to turn the German southern wing. At the same time, the 2d Ukrainian front would attack through the weakened German 8th Army, thrust toward

Rumania, and together with the 1st Ukrainian Front, encircle all of the 1st and portions of 4th Panzer Armies (see Figure 3).

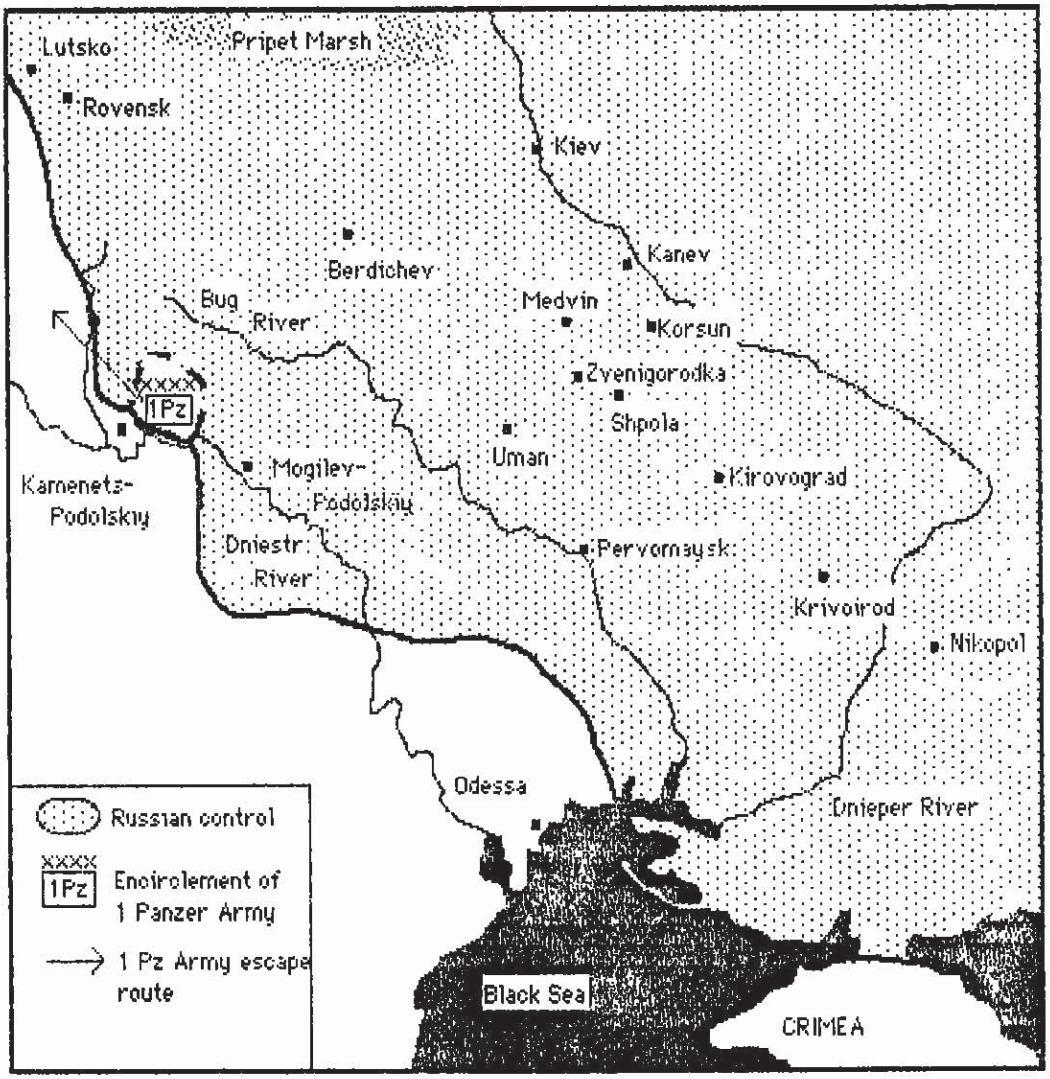

FIGURE 3

This operation went almost according to plan. By the end of March, the two Soviet fronts had encircled 22 divisions of the 1st and 4th Panzer Armies. Although the encircled forces eventually escaped, the encirclement of 1st Panzer Army secured a large geographical area and retained the initiative for the Soviet forces.

In summary, the encirclement at Korsun was a Soviet success for four reasons. First, the success of the Soviets at Korsun led directly to the encirclement of 1st Panzer Army. After the Korsun operation, the 8th Army and the 1st Panzer Army were too weak to halt the 2d Ukrainian Front's penetration. Furthermore, the two German armies had no reserves available to counterattack and close the gap between them. Six and one-half divisions certainly would have made the Russian attack more difficult, and perhaps might have halted it all together.

Second, the Korsun encirclement retained the initiative for the Russians. They were able to renew a successful offensive two weeks after the end of the Korsun operation.

Third, the battles fought in the area of Korsun tied down 15-20 German divisions. This, according to at least one Soviet author, facilitated Soviet operations in the areas of Lutsko-Rovensk and Nikopol-Krivoirod.[25]

Finally, the Korsun pocket provided the Soviets with valuable lessons about the conduct of encirclement operations, lessons that they would use throughout the remainder of the war:

> . . . the Korsun-Shevchenkosky operation constituted a further stage in the development of Soviet military art and . . . [especially] that part of it concerning the organization and conduct of operations for encirclement. In organizing all subsequent operations of the Soviet Army employing this complicated form of . . . military art, one took into full account the experience of the Korsun-Shevchenkosky operation.[26]

Although this operation had a positive effect on the overall Soviet campaign, one question must still be asked. Was there another course of action that could have had greater impact? Author, historian, and former

German officer Paul Carell believed that the Russians could have exploited the penetration and its subsequent encirclement at Korsun by pressing the attack to the Bug River. He pointed out that no German forces blocked this opportunity. Furthermore, he believed that by doing so, the Soviets could have annihilated the entire German southern wing, or at least, caused the collapse of the German forces in the Crimea.

Mr. Carell's assertion has merit. A Soviet exploitation may have been the best option. Additionally, the Soviets might have selected that option if they had known the pocket only held two corps. If the Russians had continued the exploitation and subsequently destroyed the southern armies, what would have been the costs? And what risks did this involve? One can only guess the final outcome of such a course of action. Annihilation of the German southern wing does not equate necessarily to greater operational success if, as a result, the Soviets were unable to mount another offensive for a long period of time. Furthermore, what would have happened if the Russians had pursued this course of action but failed to destroy or unhinge the German wing? Perhaps the Soviets could have selected a better course of action, but one cannot deny the success of the course they selected.

*

After the encirclement at Korsun in February 1944, and the subsequent encirclement and escape of the 1st Panzer Army in March-April, the Soviet 2d Ukrainian Front continued pushing west and reached the Carpathian Mountains by June (see Figure 4). South of the 2d Ukrainian Front, Germany had lost its forces in the Crimea, had evacuated Odessa, and was in danger of losing the Southern Ukraine. North of the 2d Front, Soviet western

progress near the Pripet Marshes threatened the southern flank of the German Army Group Centre. If the Russians could take advantage of this flanking position and make one powerful thrust through Army Group Northern Ukraine to the Baltic Sea, they could encircle Army Group Centre and press it to the sea. Hitler recognized this threat and convinced himself that the Soviets would take this course of action. As a result, Hitler ordered the reinforcement of Army Group Northern Ukraine at the expense of weakening the other Army groups. Army Group Centre was one of those forces he weakened.[27]

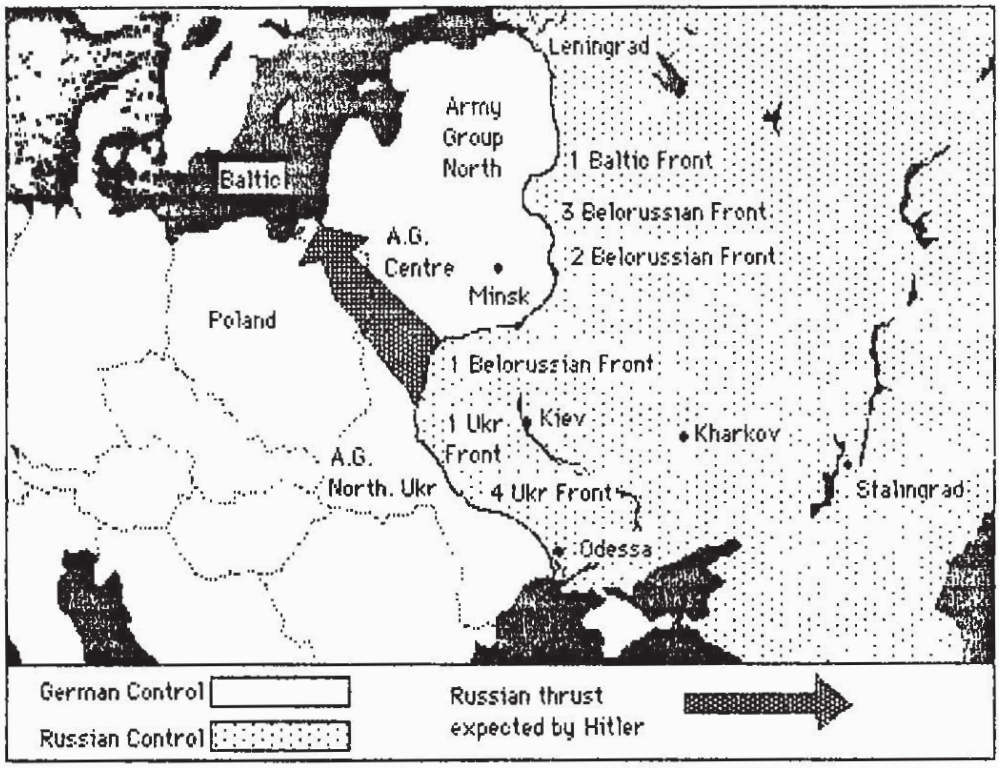

FIGURE 4

The Soviets did not attack Hitler's strongest Army Group as he had hoped. Instead, Stalin ordered an all-out offensive against Army Group Centre on 22 June, the aniversary of Operation Barbarossa.

Until now, Stalin had postponed risking a decisive large scale offensive for fear that Hitler would transfer additional forces from western Europe. Stalin committed his forces to the Belorussian campaign only when he was certain that the Allied invasion of Normandy was not a ruse, and that Hitler could not afford to shift any forces from the west.

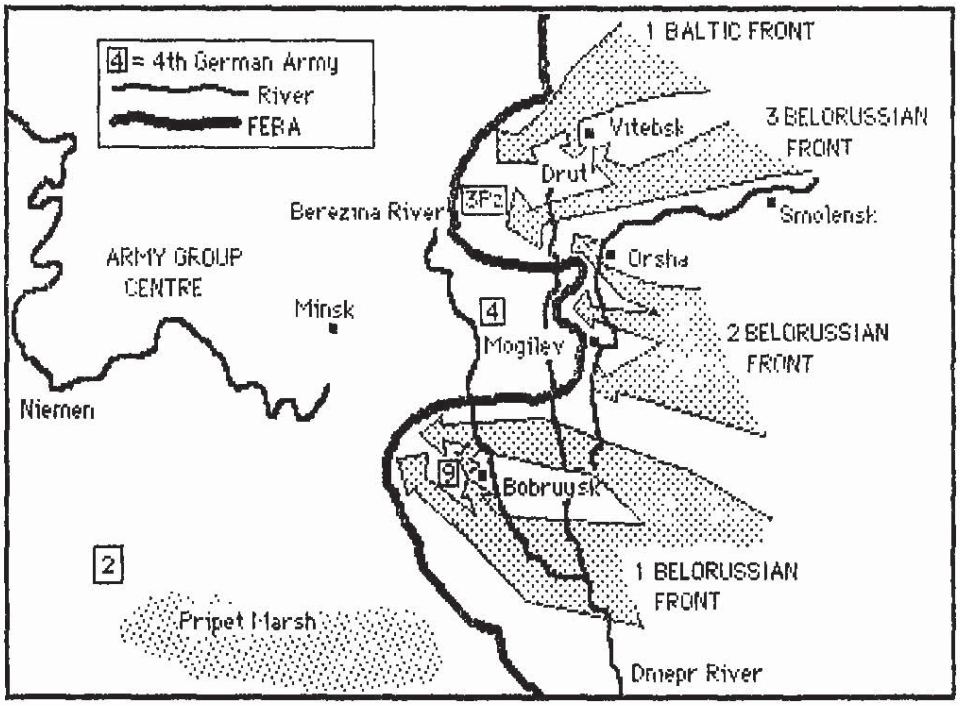

FIGURE 5

The object of this operation was the rapid destruction of the main forces of Army Group Centre and the liberation of the city of Minsk. The first stage of the offensive was planned to smash the German defense simultaneously from six directions, to surround and destroy the German forces on the flanks near Vitebsk and Bobruysk, and break through in the center along Bogushev, Orsha, and Mogilev (see Figure 5). The second phase of the offensive was the exploitation and pursuit of German forces along the

entire front. The Russians expected to attack the flanks, surround, and finally annihilate the 4th German Army along the line Mogilev-Minsk. The most important task of the third phase was the relentless pursuit of the remaining enemy forces to the western Russian borders.[28]

The offensive really began a few days earlier with long-range air attacks against German airfields and a massive partisan attack:

> During the night of 19th-20th June the territory behind the front was rocked by sabotage on a vast scale. By daybreak *10,500 explosions had severed all railway lines from the* Dnieper to west of Minsk. . . .
>
> Not only were the railways paralyzed--much worse, the telephone cables along the railways had been cut in several thousand places. And since in 1944 there was no such thing as railway traffic control by radio, the entire command apparatus of the "General in command Transport, Centre", was paralyzed. This total paralysis of all rail traffic was a decisive cause of the catastrophic development during the next forty-eight hours.[29]

On 22 March, the Russians opened the ground battle with the 1st Baltic and parts of the 3d Belorussian Fronts. They attempted a double envelopment of portions of the 3d Panzer Army at the fortress city of Vitebsk. The next day, the 2d Belorussian Front spread the battle to the 4th Army between Orsha and Mogilev. Finally, on 24 June the 1st Belorussian Front attacked the German 9th Army at Bobruysk:

> . . . it was not until 24th June that the German Command realized that the Russians had mounted their big, decisive blow along the entire front of Army Group Centre. *On 23d June the* Fuhrer's Headquarters still indulged itself in the delusion that the Russian attacks in the centre were no more than a diversion for the expected operation [against Army Group Northern Ukraine]. . . . Twenty-four hours later Hitler realized his fatal mistake.[30]

The German Army Group Centre, composed of three armies or a total of 34 divisions, faced a Soviet force of four army fronts or a total of almost 200 divisions. In terms of soldiers the ratio favored the Soviets by six to one. In terms of weapons, the ratio was more than ten to one.[31]

The German army group had based its defense on a system of fortifications. The approaches to the fortified areas of Vitebsk, Orsha, Mogilev, and Bobruysk were the most rigidly defended. For example, in the Orsha area, three fortified zones had been established to a depth of 15-20 kilometers. Additionally, several converging fortified belts encircled Bobruysk. In the army group's rear, several defensive zones had been established along the Drut and Berezina rivers.

The shock elements of the 1st Baltic Front led the attack against the 3d Panzer Army's defenses north of Vitebsk. On the first day they broke through on a 30 kilometer front and penetrated to a depth of 7-16 kilometers. On the second day they widened the front to 90 kilometers, pushed to a depth of 20 kilometers, and finally broke through the Vitebsk belt. Meanwhile, portions of the 3d Belorussian front had also broken through south of Vitebsk and had linked up with the 1st Baltic Front. Together the two fronts had encircled Vitebsk's five infantry divisions of the 3d Panzer Army. The remainder of the 3d Belorussian front concentrated in the vicinity of Orsha, and met stiff resistance.[32]

On 23 June in the center sector, the 2d Belorussian Front attacked the German 4th Army in the Mogilev area. The Germans defended the area well and prevented the Russians from reaching the Dniepr River before 26 June.

At the same time in the southern sector, the Soviets launched their main attack against the German 9th Army. On 24 June the 1st Belorussian Front struck with two converging pincers north and south of Bobruysk. By 26 June both pincers had broken through the German defense belts, and on 27 June five German divisions at Bobruysk were surrounded.

As the Soviets encircled Bobruysk, their comrades in the north were liquidating Vitebsk. On 26 June portions of the 1st Baltic and 3d Belorussian fronts had assaulted and divided the encircled German divisions into two pockets. Meanwhile, the remainder of the Soviet forces that were not involved with the encirclement continued to push west. The German divisions immediately attempted numerous counterattacks in order to break out. At the price of large losses, some units from one of the German pockets managed to escape. On the same day, other German units from the second pocket also managed to break out, but they were intercepted and annihilated. On 27 June the two Russian Fronts had liquidated most of the remaining German units. By 28 June the German survivors accepted a Russian ultimatum and surrendered. As the Vitebsk survivors surrendered, the remainder of the exploiting 1st Baltic and 3rd Belorussian Fronts had advanced 140 kilometers, deeply enveloping the north flank of the 4th German Army. Within five days, the Soviets in the Vitebsk area had encircled and annihilated five German divisions and defeated two others--20,000 Germans killed and 10,000 captured.

The German 9th Army in Bobruysk fared no better than its counterpart in Vitebsk. Once the 1st Belorussian Front had encircled five of 9th Army's divisions, it assigned two Soviet armies to conduct the liquidation of the

encirclement. The remainder of the front continued exploiting the breakthrough. The surrounded German divisions immediately attempted an aggressive breakout, and the Soviets became concerned. They decided to attack with air strikes:

> On 27 June 523 airplanes made a massed attack on Germans, as a result of which the enemy suffered enormous losses, and his troops were scattered. [Soviet] Ground troops . . . mopped up the enemy. Thrusts by our troops in converging directions . . . led to division of the enemy and his annihilation in parts. By 1300 hours on 28 June the surrounded enemy grouping southeast of Bobruysk was liquidated. It took 2 days to liquidate encircled enemy troops in the city itself. Savage fighting went on. Artillery of ships of the Dniepr Naval Flotilla took part in it. In addition the flotilla ferried 66,000 men and 1,550 guns and mortars from the left to the right bank of the Berezina. . . .[33]

The encirclement and liquidation of Bobruysk resulted in the Germans losing 50,000 men killed and 23,680 captured out of approximately 100,000.[34] Furthermore, the remainder of the 1st Belorussian Front deeply enveloped 4th Army's southern flank.

On 29 June German Army Group Centre faced the following situation: In the north, the 3rd Panzer Army had lost approximately seven divisions, and had been pushed 140 Kilometers west. In the south, 9th Army was decimated. Its surviving units were also pushed west approximately 100 kilometers. In the center sector, 4th Army had been more successful at halting the Soviet attacks than the other German armies. Nevertheless, after losing approximately 30,000 men near Mogilev, it too was being pushed to the west with both of its flanks exposed.[35] The Soviet operation was proceeding as planned--except it was four days ahead of schedule.[36]

The exposed flanks and the westward compression of the German 4th Army presented a favorable opportunity for an envelopment by the northern and southern Soviet fronts. The two fronts, the 1st Baltic and 1st Belorussian, converged toward the City of Minsk with the objectives of cutting off the German escape routes, surrounding the main German forces, and annihilating them. Meanwhile, the 2d and 3d Belorussian Fronts maintained constant pressure on the 4th Army so that the Germans could not break contact or withdraw in an orderly fashion.

The 1st Baltic and 1st Belorussian Fronts outpaced the withdrawal of the 4th Army, and with the help of partisans, successfully penetrated the Minsk defense belts and cut its lines of communication. The 2d Belorussian front advanced 175 Kilometers in six days and successfully prevented 4th Army's orderly withdrawal. The 4th Army and remnants of the 9th Army arrived in the vicinity of Minsk in two groups. By 3 July both groups were surrounded:

> Both groups were attempting to punch their way through. . . . The fighting was fierce, with the enemy [German forces] trying several times to break out of the ring with large forces. One of the enemy groups managed to penetrate the inner perimeter of envelopment on 7 July. . . . On the following day this group was intercepted by troops of the 50th [Russian] Army, and then liquidated later in the day. On 8 July the bulk of the surrounded troops were annihilated. But the battle with scattered enemy groups continued until 11 July.[37]

The Soviets completely smashed the German troops at Vitebsk, Bobryusk, Mogilev, and Minsk. Soviet encirclements directly contributed to the success of the Belorussian campaign, and made the following possible: Belorussia (White Russia) was completely liberated; the Soviets reached the

Vistula River three weeks later and liberated portions of Poland; they reached the Nieman River and liberated most of Lithuania; and by crossing the Nieman, they approached the borders of Germany. Within five weeks, the Soviets had covered 435 miles, fighting all the way:

> But the territorial gains were not the decisive factor. Decisive was the annihilation of Army Group Centre, the loss of irreplaceable men. Out of 38 German divisions in action 28 were smashed. Some 350,000 to 400,000 men had been wounded or killed, or were missing. Of these, according to Soviet reports, 200,000 were killed and 85,000 taken prisoner.[38]

An analysis of this campaign offers some interesting insights. One is the fact that the Soviets anchored their plan on their abilities rapidly to encircle the enemy and subsequently reduce the encirclement. Previous experiences revealed that the Russians had very few problems encircling the Germans. Their problems began after the encirclement--they had difficulty halting relief attempts and could not prevent breakouts. The Soviet plan fixed these problems.

First of all, the Russians hid their intentions to attack Army Group Centre. As a result, it took Hitler two days to believe he was witnessing the main attack. Secondly, the Soviets used surprise, speed, sabotage, air interdiction, and continuous pressure to prevent the Germans from shifting forces in time to slow the Russian advance or to relieve the encirclements. Thirdly, the Soviets had sufficient forces both to encircle and to by-pass enemy defense positions. By continuing the attack westward, the Soviets forced the German breakout forces to flee longer distances to their friendly

lines. As a result, most breakout attempts were intercepted and annihilated.

Another important insight of the Russian campaign is the way that the Soviets used the two smaller encirclements as springboards for the final operational encirclement. The encirclements at Vitebsk and Bobruysk set the stage for the Minsk encirclement by removing 4th Army's flank protection. The important word here is "remove." Earlier, in the Korsun and the 1st Panzer Army encirclements, the Soviets could not prevent the encircled forces from breaking out. As a result, the Russians had to fight many of these "formerly encircled" forces in later battles. On the other hand, by annihilating the forces at Vitebsk and Bobruysk, the Soviets did not have to worry about reengaging them on a future battlefield.

The last insight is the success of the Soviet pursuit forces. The encirclement of German troops at Minsk was the first case in World War II where a large force was surrounded as the result of parallel and frontal pursuit to a depth of over 200 kilometers from the initial front.[39]

The Belorussian campaign provided important examples of the theory and practice of encirclement of large forces. It demonstrated that encirclement and liquidation could be achieved by a single front and by multiple fronts in coordination. It showed the value of encirclements at both tactical and operational depths. Finally, it demonstrated that mobile armored forces, combined-arms forces, aviation, and even naval flotillas could be used in establishing and annihilating encirclements.

III. ANALYSIS AND CONCLUSION

These two operations demonstrate an evolution of Soviet encirclement doctrine and execution. The Korsun operation provided a teaching platform for future encirclement operations. The Russians analyzed Korsun to identify its strengths and weaknesses. Then, they applied this knowledge toward the preparation of the Belorussian campaign plan, retaining the strengths of the Korsun experience and correcting its weaknesses.

One of the retained strengths was the employment of a division of effort to develop, secure, and liquidate encirclements. In each case, one element of the force went deep and formed an outer perimeter; and another element attacked close, formed the inner perimeter, and conducted the annihilation. Another strength was the emplacement of artillery between the two perimeters in order to support the inner and outer battles.

The Russians corrected one of Korsun's weaknesses by conducting tasks simultaneously. At Korsun, the Soviets sequenced their tasks: They attacked, penetrated the German defenses, formed inner and outer perimeters, established defensive lines, and then divided and annihilated the encirclement. The Belorussian operation was different because it employed a single process of encirclement, division, annihilation, and continuation of the attack/pursuit. The Soviets did not establish an outer perimeter defense as they did at Korsun--they exploited. Additionally, the deep exploitations expanded the distance between the surrounded Germans and their friendly lines, making breakout attempts less successful.

Another improvement was the rapid liquidation of the encirclement. At Korsun, the Soviets did not attack the encirclement immediately. They allowed the surrounded Germans to establish an all-around defense. The Belorussian campaign corrected this by starting the liquidation as the encirclement closed.

Yet another improvement was the increased employment of Soviet air forces. The Germans in the Korsun pocket regularly received air resupply. Additionally, the German air force was relatively successful in protecting the encirclement from Soviet air attacks. The ratio of Russian airplanes to those of the Germans was approximately 1000 to 768.[40] In the Belorussian Campaign, the Russians successfully conducted deep offensive counterair and air interdiction strikes against airfields and communication nodes. Furthermore, they used massive air sorties to annihilate German defenses and encirclements. For example, the Soviets conducted aerial bombardment of Vitebsk with more than 1000 bombers.[41] In this operation, the Russians had 5300 airplanes to the German's 1350--not including long-range aviation.[42]

Perhaps the Belorussian campaign plan itself was the Soviets' most important improvement. At Korsun, the Russians offered the Germans the initiative. They encircled an "army" of two German corps, went on the defensive, gave the Germans time to attempt relief of the pocket, and eventually permitted 35,000 men to escape. The results: Two Soviet fronts took 4 days to encircle, 14 additional days to liquidate the encirclement, and they removed 6.5 divisions from the battlefield.

In Belorussia, the Soviets used two "Korsun size" encirclements to set the stage for a massive encirclement near Minsk. The Russians never gave the Germans time to organize anything. The Vitebsk and Bobruysk encirclements were never threatened by German relief attempts. The Germans tried to attack the southern wing of the Minsk encirclement, but they were too weak, too slow, and too late. The results: The Belorussian campaign employed three encirclements. The first two were key to the success of the third. The Vitebsk encirclement used two fronts to encircle five divisions within two days, and used an additional two days to annihilate them. It permitted no time for relief attempts. The Bobruysk encirclement used one front to encircle five to six divisions within two days, and used an additional two days to annihilate them. It also permitted no time for relief attempts. Finally, the Minsk encirclement used four fronts; took 11 days, beginning with the first attack near Vitebsk, to encircle more than 20 divisions; and used seven additional days to annihilate them. The Germans did not have time to attempt a substantial relief.

The success of these operations implies that encirclements are very decisive forms of offensive action. It also implies that the benefits of conducting encirclements outweigh the costs. One must be skeptical, however, of drawing conclusions from only two analyses. These two encirclement operations only demonstrate and validate what was once possible. They do not establish what is currently possible, or probable. For example, none of these operations demonstrated encirclement's "greater risks" as identified by Clausewitz and Jomini. Does this mean that the two

theorists were wrong about risks? No, it means that risk was not readily noticeable in this paper's analysis. Risks did exist in these operations, but the Soviets reduced most of them by employing surprise, sabotage, air-interdiction, and a significant numerical and material advantage. Obviously the outcome could have been different if the Germans had known about the attack, had secured air superiority, had conducted a mobile defense, or had changed other circumstances. Therefore, encirclement operations may hold the "promise of increased results," but depending on the circumstances, they are not a panacea for all operations.

Another implication is the idea that only numerically superior armies can perform encirclement operations. Once again, this may or may not be valid. All things being equal, a numerically superior force would probably have fewer problems conducting a successful encirclement than an inferior one. Nevertheless, this does not rule out the possibility of the inferior force conducting economy of force operations in one area, so that sufficient encirclement forces can mass in another. Nor does this take into account any differences the two opposing armies might have in quality, equipment, or technology.

Perhaps Stalingrad in summer 1943 provides the best example of both encirclement risks and encirclement by a numerically inferior force. At Stalingrad, the Soviets employed essentially a 1:1 force ratio, and defeated approximately 22 German divisions--330,000 troops. Viktor A. Matsulenko, a Soviet military author writes:

> In the Stalingrad operation, for example, the Soviet command had to create strong assault groupings because our troops did not enjoy general superiority over fascist German troops.

> Despite a certain risk, the command decided to boldly concentrate the maximum possible forces and resources in the sectors of the main thrusts of the fronts, which meant sharply weakening the auxiliary sectors. As a result up to 70 percent of the rifle troops, up to 80 percent of the artillery and all tanks of the combined-arms armies were concentrated in the sectors of the fronts' main thrusts. A decisive superiority (double and even triple) over the enemy in breakthrough sectors was achieved.[43]

The success of the Korsun and Belorussian operations raises one important question: Can encirclements be applied to contemporary operations? The Israelis probably would answer yes, and base their answer on the successful Israeli encirclement of the Egyptian 3d Army in 1973. This example has merit because it shows how the threat of annihilation through encirclement can influence the termination of a war. Additionally, it demonstrates the possibility of a highly trained, small force encircling a larger if questionably trained force.

Again, one must be wary of drawing too many conclusions from a single operation. The Israelis' 1973 experience probably is not an indisputable example from which to draw universal conclusions. First of all, a ceasefire was initiated before the encirclement was completed. Secondly, the war ended without an attempt to liquidate the encirclement, or without an Egyptian attempt to relieve it. Thirdly, the Egyptians had forces in the Sinai that the Israelis still had to deal with. Finally, a comparison of the 1973 war between Egypt and Israel has questionable application when compared to a scenario of the Warsaw Pact versus NATO.

The 1973 War provides the only example of large encirclement operations since World War II. Without the benefit of additional examples,

this paper answers the question of contemporary encirclement applicability as follows: much of what occurred in the planning and execution of the Korsun and Belorussian operations retains significance today.

Most of the encircling methods the Soviets used are valid today, regardless of the fact that some circumstances have changed. For example, the Russians employed their attacks in several converging directions in order to surround the enemy. This technique has application today, but one must still consider the effects of weather and terrain, how the two opponents are disposed, what type of equipment they have, and what their relative strengths are. Obviously, encirclements require considerable forces with excellent mobility. NATO and the Warsaw Pact have the mobility, and certainly the Warsaw Pact has the potential to supply the "considerable" forces.

NATO's situation is different. Disregarding NATO's political constraints, such as a lack of free maneuver space on either side of the Inter-German border, NATO still might not have sufficient forces to employ encirclement operations. On the other hand, encirclement is one of the best uses of a numerically inferior force:

> It is impractical and costly to attack everywhere along an enemy's front. Forces and fires must be concentrated in selected sectors to achieve a penetration. An intelligent attacker concentrates to penetrate the weakest sectors and then exploits initial success by rapidly moving deep into the enemy's defenses. . . . The attacker must somehow use his success against the weakest components of the enemy's defenses to quickly attack and disrupt the stronger enemy forces where they are weakest--in their flanks and rear. The attacker must quickly separate the stronger enemy from his combat and logistics support and inhibit his reconsolidation

> into a stable defensive line. This is the essence of the encirclement--defeating the strongest parts of a defending enemy by attacking his weakest parts and thereby defeating the entire defending force. Clearly, execution of a major frontal attack on the enemy's strongest forces is wasteful of combat resources and time and requires far greater numerical superiority than does execution of encirclement operations.[44]

Attacking an enemy's weaknesses and unbalancing his strengths is AirLand Battle Doctrine's method of employing the operational art, "... [Operational art's] essence is the identification of the enemy's operational center-of-gravity--his source of strength and balance--and the concentration of superior combat power against that point to achieve a decisive success."[45]

Before deciding to utilize encirclements as depicted in the above concept, one must still consider at least three important factors affecting contemporary encirclement operations. These are the opportunities for surprise, the requirement for air superiority, and the threat of nuclear weapons. In the Belorussian Campaign, the Soviets hid their main effort and surprised the Germans. Can contemporary attack forces keep their intentions secret considering the effects of today's satellites, remotely piloted vehicles, and electronic surveillance? Technology has indeed made surprise appear more difficult to achieve; more difficult, but not impossible. Surveillance technology has vulnerabilities and these can be exploited. Furthermore, ground forces can apply operations security to aid their attainment of surprise. For example, an assault force could be created without complex movements, and could make strikes by the shortest routes against enemy areas that are unprepared and lack strong reserves.[46]

Another factor is the necessity for air superiority. In the Korsun operation, the Soviets could only establish air parity. This allowed the Germans to continue air resupply and prolonged the resistance of the pocket forces. In the Belorussian operation, the Soviets enjoyed air superiority. This resulted in the rapid deterioration of the German defense zones and the liquidation of the encirclements. Logic would suggest that if the Germans had controlled the air, the Soviet encirclements would have had great difficulties. Another Soviet writer says this, "... encirclement under conditions where the enemy has air superiority is essentially impossible."[47] Therefore, in contemporary encirclement operations, the encircling force must establish no less than air parity.

The threat of the nuclear weapons is the most important difference between the World War II armies and those of the contemporary superpowers. Are encirclements possible in the era of nuclear weapons? Again, a quantifiable answer is not yet possible. Theoretically, nuclear weapons add more risk as well as more decisiveness to encirclements. For instance, attack forces usually must mass before the attack, making good targets for nuclear weapons. The encircled troops in the pocket are usually massed, especially for breakout attempts, and they also could make good targets for nuclear weapons. Therefore, in order for ground forces to encircle under the threat of nuclear weapons, they will have to learn to mass only for short times, then advance swiftly, and exploit or get as close to the pocket as possible.

All things considered, this paper concludes that encirclement operations are still possible, they still offer the promise of increased results, but they are not a panacea for all operations.

The theorists in the introduction expected encirclement to produce high payoff results in war. They also cautioned that these results would come at the cost of greater risks. The Korsun and Belorussian campaigns of World War II validated the theorists' predictions of greater gains but failed to demonstrate the encirclement's higher probability of failure. Nevertheless, an analysis of these operations identified that risks probably existed, but were overcome by the employment of sound battlefield techniques and superior numbers. In comparing the historical experience to modern times, the analysis warns against making any concrete conclusions. It identifies technology as a major factor hampering the success and application of encirclement methodology, but suggests that technology can be countered. Finally, the analysis predicts the encirclement's potential for application in contemporary warfare.

U.S. military planners should expect the Soviets to employ encirclement operations when presented with the opportunity. In fact, "Encirclement is the type of operation the Soviets favor most and which they believe would be most productive of rapid results in a future war against NATO."[48]

Except for the two atomic bombs dropped on Japan in 1945, the encirclement has been the most decisive form of offensive action in history. Nevertheless, the encirclement does carry some important risks. These risks are not insurmountable. Sound tactical and operational techniques can reduce them to manageable levels. Campaign planners must understand this as well as the other pros and cons of encirclement employment. Furthermore, the encirclement's potential for success suggests that the campaign planners should consider incorporating it in their plans when ever possible.

ENDNOTES

[1]Major General J.F.C. Fuller, Machine Warfare, (Washington: The Infantry Journal, Inc.,1943), p. 28.

[2]U.S. Department of the Army, Field Manual 100-5, Operations, (U.S. Government Printing office, 1986), p. 120.

[3]Carl Von Clausewitz, On War, (Princeton, New Jersey: Princeton University Press,1976), p. 619.

[4]U.S. Department of the Army, Field Manual 100-15 (Draft), Corps Operations, (U.S. Government Printing Office, 22 February 1985), p. 5-20.

[5]On War, pp. 619-621.

[6]Major Rick Gutwald, Tactical Encirclement Reductions, 5 December 1986, School of Advanced Military Studies Monograph, U.S. Army Command and General Staff College, Fort Leavenworth, Kansas, and FM 100-5, Operations, p. 101.

[7]On War, p. 233.

[8]Baron de Jomini, The Art of War, (Westport, Connecticut: Greenwood Press, 1971), pp. 201-202, and 207.

[9]B.H. Liddell Hart, Strategy, (London: Faber and Faber Ltd., 1967), p. 327.

[10]Machine Warfare, pp. 89-90.

[11]Paul Carell, The Scorched Earth, (New York: Ballentine Books, 1973), p. 460.

[12]Viktor A. Matsulenko, Operatsii i boye po okruzheniye (Encirclement Operations and Combat), (Moskva: Voyenisdat, 1983, JPRS trans. no. 019-L) p. 93.

[13]Ibid, pp. 174-5.

[14]The Scorched Earth, pp. 469-470.

[15]Ibid, p. 505. The Soviets currently believe that their assessment of 100,000 German troops in the pocket is correct.

[16]Erich von Manstein, Lost Victories, (Munich: Bernard and Graefe Verlag, 1982), p. 515.

[17]The Scorched Earth, p. 473.

[18]DA Pam 20-234, p. 36.

[19]Ibid, p.37.

[20]The Scorched Earth, p. 478.

[21]Ibid, p. 485.

[22]Major General N. Belyayev,"Liquidation of a Large Encircled Grouping," in Military Thought, Number 7, 1946, translated by Eurasian Branch, G2 Special Projects, registry number F-6123-B, p. 10.

[23]The Scorched Earth, p. 505.

[24]Lost Victories, pp. 524-529.

[25]Colonel A. Grylev, "Korsun-Shevchenkosky Operation", in Military Thought, Number 2, 1954, translated by Eurasian Branch, G2 Special Projects, Registry number G 3924 B, pp. 13-14.

[26]Ibid, p. 14.

[27]The Scorched Earth, p. 567.

[28]Lieutenant General E. A. Shilovski, "Destruction of German Troops in Byelo (White) Russia," in Battle Experiences of the National War, (Military Publishing House of the People's Commissariat for Defense, Feb. 6, 1951), translated by the Directorate of Military Intelligence, AHQ, Ottawa, Canada, p. 2.

[29]The Scorched Earth, p. 568.

[30]Ibid, p. 569.

[31]Ibid, p. 570. Soviet accounts disagree with these ratios. One Soviet source reports a ratio of 2.4 million Russians to 1.2 million Germans, Encirclement Operations, p. 9.

[32]Destruction of German Troops," pp. 3-4.

[33]Encirclement Operations, p. 158.

[34]Destruction of German Troops," p. 6, and The Scorched Earth, p. 580.

[35]Destruction of German Troops," p. 5.

[36]The Scorched Earth, p. 580.

[37]Encirclement Operations, p. 159.

[38]The Scorched Earth, p. 596.

[39]Encirclement Operations, p. 124.

[40]Ibid, p. 9.

[41]The Scorched Earth, p. 583.

[42]Encirclement Operations, p. 9.

[43]Ibid, p. 46. The ratio of Soviet to German forces at Stalingrad is a debated topic. U.S. Army Colonel David M. Glantz, a respected author and researcher of Soviet operations at Fort Leavenworth, Kansas, said in a telephone conversation that his research suggests the ratio was 1.2 or 1.3 to 1 in favor of the Russians. Historian Earl F. Ziemke writes that the ratio could have been as high as 2 to 1. Earl F. Ziemke, Stalingrad to Berlin: The German Defeat in the East, (Washington: Office of the Chief of Military History, U.S. Army, 1968), pp. 50-52.

[44]G. Hines, "Soviet Front Operations in Europe--Planning for Encirclement," reprinted in Course Readings for Course 3, Dynamics of Battle, School of Advanced Military Studies, Academic Year 1986-87, p. 104.

[45]FM 100-5, Operations, p. 10.

[46]Soviet Front Operations in Europe," p. 132.

[47]Ibid, p. 185.

[48]Ibid, p. 92.

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