

CHAPTER 6

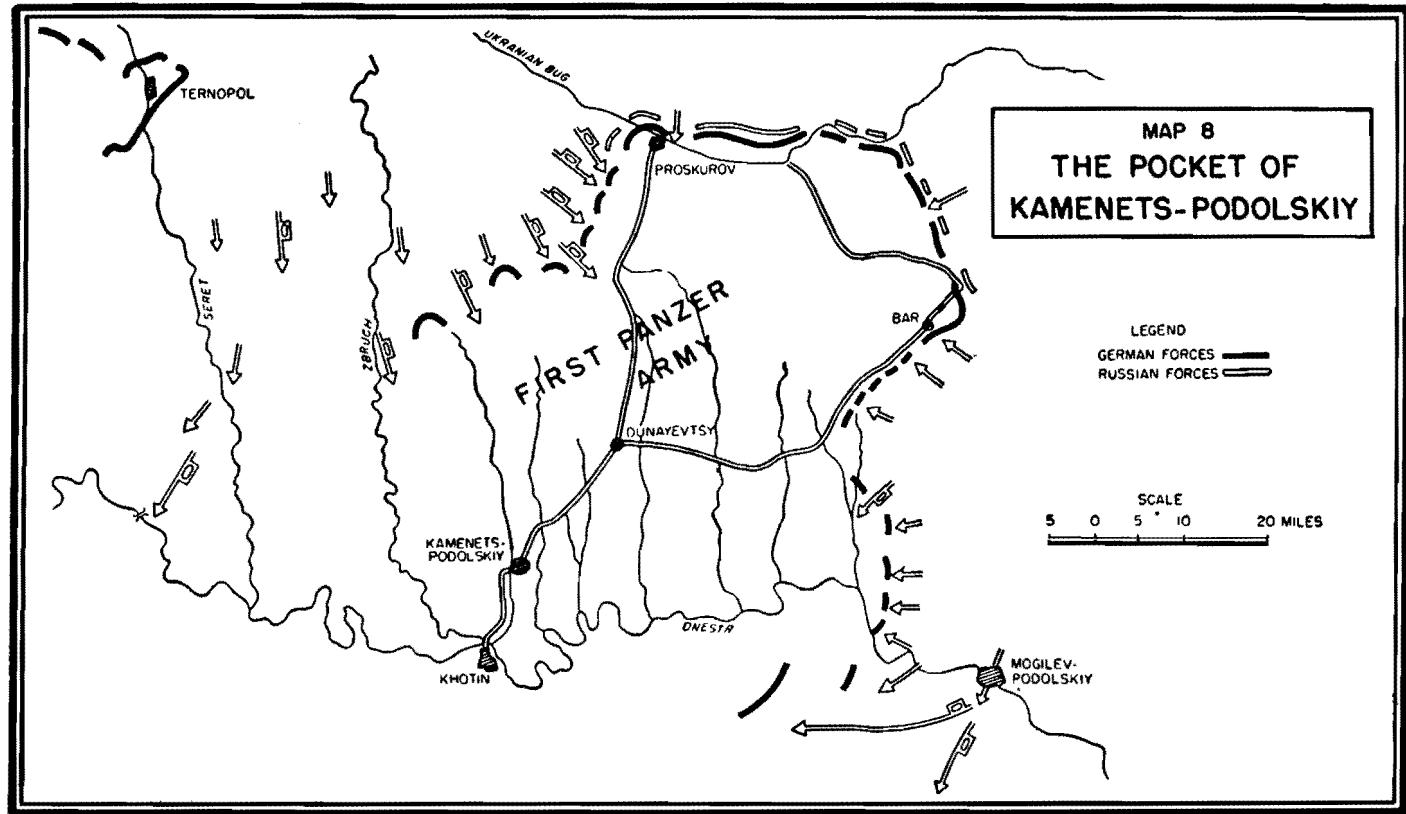
ENCIRCLEMENT OF A PANZER ARMY NEAR KAMENETS-PODOLSKIY

Section I. THE ENCIRCLEMENT

In mid-February 1944 the front of the First Panzer Army extended across the western Ukraine along a general line north of Vinnitsa and Shepetovka, northeast of Ternopol. To the right, north of Uman, was the Eighth Army; to the left, the Second Army. After the two corps encircled west of Cherkassy had made their way out of the pocket (Ch. 4), the front remained quiet until the beginning of March, while the Russians were reorganizing and regrouping their units. Then strong concentrations of Soviet tanks indicated that the enemy was getting ready to resume his attempts at forcing a decision.

The first large-scale Russian attacks, on 4 and 5 March, were directed primarily against the Shepetovka and Uman areas. Because of their great numerical superiority, the Russians succeeded in denting the overextended German lines in many places. While timely German counterattacks on the left flank eliminated the threat of a breakthrough aimed at Proskurov, the enemy was rapidly gaining ground in the Uman area and succeeded, by mid-March, in pushing across the Ukrainian Bug River. Having driven a deep wedge into the German front, the Russians were in a position to threaten the right flank of First Panzer Army. Since there were no German reserves available to close the gap, First Panzer Army was forced to withdraw its entire right wing and establish a new defense line facing east. Under the pressure of continued Russian attacks, planned withdrawals were also carried out on the central sector until the right flank of First Panzer Army was finally anchored on the northern bank of the Dnestr River east of Mogilev-Podolskiy.

On the left boundary of First Panzer Army, west of Proskurov, strong Russian armored units soon accomplished another breakthrough. On 22 March five armored corps followed by infantry poured south between the Zbruch and Seret Rivers, and two days later crossed the Dnestr in the direction of Chernovtsy. Since the enemy had also pushed across the river farther east, in the area of Yampol



and Mogilev-Podolskiy, First Panzer Army was now contained in a large semicircle north of the Dnestr. Hitler's explicit orders prohibited any further withdrawal and eliminated the possibility of a more flexible defense which might have established contact with other German forces to the east or the west. As could be expected, the two Russian forces, after crossing the Dnestr, linked up under the protection of the river line in the rear of First Panzer Army. By 25 March the encirclement was complete.

As in all similar situations, the first threat to make itself felt came when the last supply lines into the German salient were cut. Until 25 March First Panzer Army still had one supply route open, which led south across the Dnestr bridge at Knotin and was protected by a strong bridgehead on the southern bank of the river. Over this route all staffs and units that could be dispensed with were moved to the rear, and every nonessential user of supplies and equipment was taken out of the pocket before the ring was actually closed. As soon as it became evident that no more supplies could be brought up, stock was taken inside the pocket. While ammunition and rations were sufficient to last for about another two weeks, fuel reserves were found to be critically low. First Panzer Army therefore immediately requested supply by air and restricted the use of motor vehicles to a minimum.

All measures taken inside the pocket were made extremely difficult by unfavorable weather. At first snowstorms and snowdrifts hampered the air supply operation and obstructed movements on the ground. Then, practically over night, the snow began to melt, and the roads quickly turned into bottomless morasses. The supply of motor fuel, which was flown in over a distance of 125 miles from the nearest German airfield, fell far short of requirements. Time and again vehicles had to be destroyed when they blocked the roads in long, immobilized columns. Finally, only combat vehicles, prime movers, and a few messenger vehicles were left intact.

Having completed the encirclement the Russians, as expected, decreased the intensity of their attacks. Only on the eastern sector enemy pressure remained strong; there was no more than moderate activity in the north; and from the west no attacks were launched against the defense perimeter of First Panzer Army. Apparently the continuous movements of German service units southward across the Dnestr had led the enemy to believe that the First Panzer Army was in full retreat toward the south. The Russians, in an effort that turned out to be a serious mistake, moved more and more units in the same direction on both sides of the pocket. Their lines of communication grew longer and longer, and they began to face difficulties of supply similar to those of the encircled German force.

In response to enemy pressure from the east and north, First Panzer Army deliberately shortened its front until it ran along a much smaller perimeter north of Kamenets-Podolskiy, assuring a greater concentration of the defending forces and a more efficient use of the limited ammunition supply. Local enemy penetrations were sealed off more easily and break-throughs could be prevented altogether. At the same time First Panzer Army deceived the enemy into believing that by day and by night large-scale evacuations across the river were taking place.

Even before it was completely cut off, First Panzer Army had requested authority to conduct a defense along mobile lines. When this request was turned down and the encirclement became a fact, a breakout remained the only possible course of action short of helplessly facing certain annihilation. Because of unfavorable weather conditions, the quantities of supplies that could be flown in were entirely insufficient to maintain the fighting power of the encircled troops. Relief of the pocket by fresh forces from the outside could not be expected. In this situation the enemy sent a terse demand for surrender, threatening that otherwise all soldiers of the encircled German army would be shot.

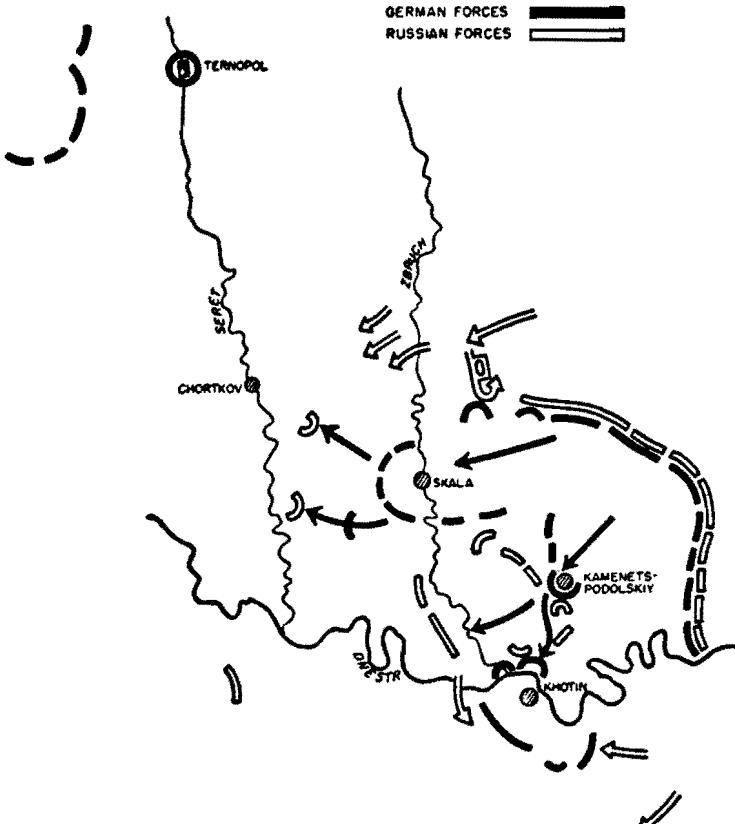
The reaction of First Panzer Army was to immediately make all necessary preparations to enable its total force of eight divisions to break out. Once more, in a systematic culling process, the divisions were relieved of all unfit personnel and superfluous equipment, while special arrangements were made with the Luftwaffe to assure that the transport planes bringing in supplies were used to evacuate casualties on their return flights.

Section II. THE BREAKOUT PLAN

The question of the direction in which the breakout should be launched played an important part in all considerations. Was it more advisable to strike toward the west, along the Dnestr, or toward the south, across the Khotin bridgehead? An attack in the latter direction would involve the least difficulties, be opposed by the weakest enemy forces, and perhaps permit the withdrawal of the entire German force into Romania. In this case, however, there would be one less panzer army fighting the Russians, at least for some time. West of the pocket several successive river lines constituted natural obstacles in the path of an advance. There, too, the Germans had to expect the strongest concentration of enemy forces along the ring of encirclement. Breaking out in several directions at once was another possibility under consideration; this would have forced the enemy to split his strength in numerous local countermeasures and

MAP 9
BREAKOUT TO THE WEST

LEGEND
GERMAN FORCES 
RUSSIAN FORCES 



might have enabled some small German groups to make their way back to the nearest friendly lines with the least fighting.

The final decision was to break out to the west, in the direction involving the greatest difficulties, yet assuring a maximum of surprise. Simultaneously, on the outside, another German force was to attack from an area southwest of Ternopol (over 125 miles from the scene) in the direction of First Panzer Army.

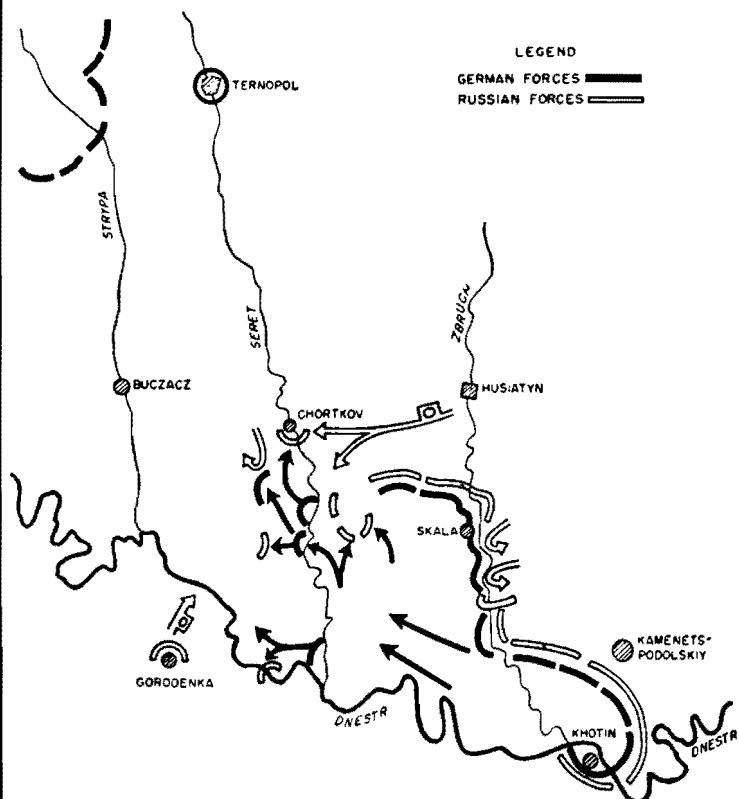
Another highly important question was the formation to be adopted for the breakout. Desirable as it might have been to lead off with a strong concentration of armor, it was to be feared that these armored units, intent on making rapid progress, might outrun the infantry and thus break up the unity of the command. The plan of attack, therefore, provided for a northern and a southern force, each consisting of two corps and specifically ordered to form an advance guard of tank-supported infantry and combat engineers, while the main body and the rear guard were to be composed of mobile units. This meant that the entire panzer army would be committed in two parallel formations attacking abreast, with units in column. Control over the operation, of course, could only be exercised from inside the pocket; evacuation of an operations staff via Khotin to the south, in order to direct the breakout from the outside, was out of the question.

Section III. THE POCKET MOVES WEST

On 27 March, having regrouped its forces according to plan and completed all preparations for the thrust across the Zbruch River, First Panzer Army launched its breakout toward the west. Simultaneously, the rear guards on the eastern and northern sectors of the pocket switched to delaying tactics.

In the zone of the northern attack force, the enemy along the Zbruch River was overrun with surprising speed, and three undamaged bridges fell into German hands. The advance of the southern attack force met greater resistance, and considerable difficulties arose as the enemy launched a counterthrust from the west across the Zbruch and was able to force his way into Kamenets-Podolskiy. The loss of this important road hub made it necessary to reroute all German movements in a wide detour around the city, an effort that required painstaking reconnaissance and careful traffic regulation. It was not long, however, until the enemy penetration was sealed off, and in this instance the Germans, themselves surrounded, were able in turn to encircle a smaller Russian force which was not dependent upon air supply and could no longer interfere with subsequent operations. As soon as several strong bridgeheads had been established across the Zbruch River, new spearheads were formed which attacked the Seret

MAP 10
THE POCKET MOVES WEST



SCALE
0 5 10 20 MILES

River line. Thus the panzer army maintained the initiative and kept moving by day and night.

Apparently the enemy was still uncertain about German intentions. Instead of combining all his forces from the eastern and northern sectors in an attempt to pursue and overtake the Germans pushing west, he persisted in attacking the pocket from the east and north, in some instances striking at positions already vacated by the German rear guards. His units southwest of the pocket actually continued to move farther south. Meanwhile, First Panzer Army kept up its westward advance; on 28 March the southern force was able to cut the road leading to Chortkov, severing enemy communication lines in that area; one day later German spearheads reached the Seret River, which they crossed during the following night.

The Russians then began to react. They recalled elements of their Fourth Tank Army from south of the Dnestr and, by 31 March, launched a strong armored thrust toward the north from the area of Gorodenka. As a countermeasure, the southern attack force of First Panzer Army, deployed mainly between the Zbruch and Seret Rivers, assumed the defensive and was able to break up the Russian armored attack. Thereafter, since their supply lines had meanwhile been cut, these Russian units no longer constituted a menace to the German left flank.

A more serious threat existed in the north where Russian forces moving west could have overtaken and blocked the entire right wing of First Panzer Army. However, the enemy did not choose to do so, and the northern attack force continued to advance and was able to cross the Seret without major difficulty.

Section IV. THE ESCAPE

The last week in March was marked by heavy snowstorms. A rapid thaw followed early in April, with the effect of seriously hampering all movements. Supply during this period continued to be the greatest problem. As the German force kept moving, the planes bringing in supplies had to use different airstrips every night. In the final phase of the operation supplies could only be dropped by air, a procedure that proved wholly inadequate to satisfy the requirements of an entire army. Despite the daily moves of the pocket force, the maintenance of adequate signal communications was assured at all times, primarily by the use of conventional and microwave radio sets.

Since the troops were constantly on the move, launching successive attacks toward the west, they never developed the feeling of being trapped in the slowly tightening grip of an encircling enemy force. Consequently, there were no signs of disintegration or panic, and the number of missing during the entire operation remained unusually

low. By 5 April the leading elements of both the northern and the southern attack forces reached the Strypa River. On the following day, near Buczacz, they were able to link up with other German units coming from the west.

In two weeks of heavy fighting, but without suffering severe casualties, First Panzer Army had freed itself from enemy encirclement. Rear guard actions continued for a few days and then the Germans succeeded in establishing a new, continuous defense line running from the Dnestr to the town of Brody, which prevented any further advance of the enemy. Moreover, despite their considerable losses in matériel, elements of First Panzer Army were still able to launch an attack southeast across the Dnestr to break up an enemy force which had appeared in the Stanislav area. Enemy equipment captured and destroyed during the entire breakout operation amounted to 357 tanks, 42 assault guns, and 280 artillery pieces.

Section V. EVALUATION

In its encirclement and breakout, First Panzer Army gained a number of experiences that may be applicable to many similar situations. Whereas in previous wars the double envelopment and encirclement of a unit was tantamount to its annihilation, this is no longer true today. The progressive motorization of ground forces, combined with the possibility of supply by air, tends to do away with this hitherto characteristic aspect of a pocket.

While it is true that the decision to break out from encirclement should not be needlessly delayed, it is equally important to realize that definite plans for the breakout should not be made too early, at a stage when the enemy is still moving and therefore capable of making rapid changes in his dispositions. Once the encirclement is completed, the enemy, since he is now operating along exterior lines, encounters difficulties of supply and communication and has lost much of his initial flexibility.

In an operation of this type surprise is the most important factor, particularly the surprise achieved by choosing an unexpected direction for the breakout. In the example described all movement prior to the encirclement of First Panzer Army had been from north to south. A breakout in the same direction was definitely expected by the enemy, and therefore this would have been the least favorable choice. The direction selected for the German thrust—practically perpendicular to the enemy's lines of advance—offered the best chance of success; the element of surprise actually proved of greater importance than considerations of enemy strength, terrain conditions, and the distance to the nearest German lines.

CHAPTER 7

CONCLUSIONS

Section I. THE SIGNIFICANCE OF A POCKET

In modern warfare with its blitzkrieg tactics executed by motorized and mechanized forces, the encirclement by the enemy of large bodies of troops has become a frequent occurrence. It is, therefore, all the more important to be adequately prepared for this kind of fighting.

Combat in pockets, whether it be of long or short duration, has its own fundamental rules. Whatever circumstances may determine the length of the battle, it will always be advisable to seek an early decision. To make this possible, the commander of an encircled force must, on principle, be granted full freedom of action. He should be permitted, specifically, to use his own judgment regarding all measures and decisions incident to a breakout from the pocket. On many occasions in German experience, the futile attempt was made to evaluate a local situation and to conduct the operations of encircled troops by remote control from a far distant higher echelon, if not directly from Hitler's headquarters. Indecisiveness on the part of the pocket commander and measures which invariably came too late were the consequences of such limitations imposed by higher headquarters. Whenever a commander receives rigid instructions from a distance at which the capabilities of his encircled forces cannot be properly judged—and are usually overestimated—his willingness to accept responsibility will rapidly decline.

The notion that pockets must be held at all costs should never be applied as a general principle. Hitler's adherence to this mistaken concept during World War II resulted in the loss of so many German soldiers that the lesson learned from their sacrifice ought to be remembered for all time.

Section II. SPECIAL OPERATING PROCEDURES

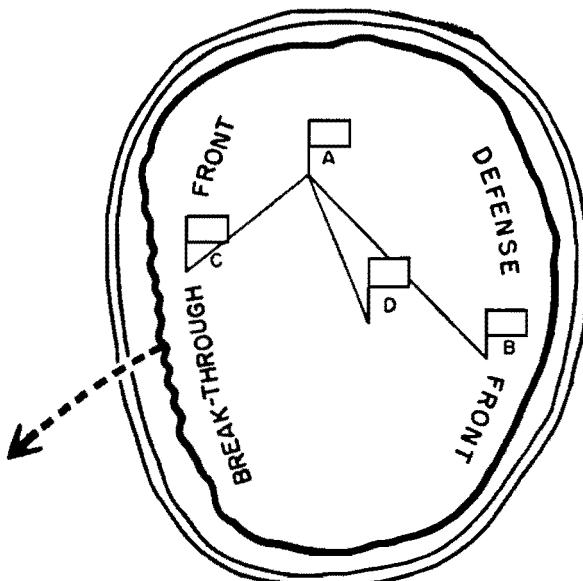
Experience has shown that only seasoned troops, in the best fighting condition and under the firm control of their commanders, are able to withstand the mental strain of combat in encirclement and are likely to retain the high degree of physical fitness needed under such

circumstances. But even with troops that satisfy these requirements it is necessary to apply stern measures in order to prevent any slackening of control, which would inevitably result in lowering their morale. It is surprising how fast the bonds of discipline will disintegrate in an encirclement. Mobs of unarmed soldiers trying to proceed on their own, captured horses loaded down with superfluous equipment, and other similarly depressing sights were not uncommon in some of the larger German pockets in Russia. They had a contaminating effect and called for swift and drastic countermeasures.

The highest standards of discipline, more important in this than in any other situation, must be upheld by the officers and noncommissioned officers of an encircled force; it is their personal conduct that sets the example. Force of character, as in all critical situations, acquires the greatest significance; it sustains the will to fight and may, indeed, determine the outcome of the battle. More than ever the place of the commander, under such circumstances, is in the midst of his troops; their minds will register his every action with the sensitivity of a seismograph.

Particular attention in all matters of discipline must be paid to rear echelon units and the personnel of rear area installations that may be present in the pocket. Since these troops are usually the first to become unnerved, they must be held under strict control.

Another principle that has proved itself in the German experience is the delegation of authority (see diagram) by the pocket commander



(A) to three subordinate command elements within the pocket; one (B) to maintain the defensive effort; another (C) to prepare and conduct the breakout; and a third (D) to be responsible for organization, traffic control, and the maintenance of discipline inside the pocket.

Communication and co-ordination with other friendly forces, particularly in the case of a relief thrust from the outside, will have to remain among the exclusive functions of the pocket commander. Presumably, he alone will have the necessary radio facilities at his disposal. It is, of course, an absolute requirement, for the delegation of authority described above, that all the forces inside the pocket be under one command. Since envelopment attacks are usually directed against tactical weak spots, such as army or corps boundaries, uniform command over the forces encircled by the enemy is not always assured at first. It must be established as soon as possible; otherwise, as demonstrated in Chapter 4, considerable difficulties will be encountered in the defense of the pocket, as well as in the conduct of relief operations from the outside.

The tactical principles which, in an encirclement, apply to the various combat arms, may be summarized as follows:

1. Infantry

In the initial phase, during which the entire perimeter is to be held, *everything up front!* An encircled force can ill afford loss of terrain. Therefore, strong reserves must be held close by; the battle position must be a closely knit system of strong points with a well-co-ordinated fire plan for all infantry heavy weapons; and the outpost area must be kept under constant surveillance by reconnaissance and combat patrols, particularly during the night. If this cannot be accomplished because of inadequate forces, the perimeter should be shortened deliberately to the point where the defenses can be organized in accordance with the principles outlined above.

2. Artillery

In small- and medium-sized pockets the ordinarily undesirable bunching up of artillery units cannot be avoided. Here, however, it is of advantage in that it permits a rapid shift of fire, thus assuring direct support for large parts of the front without displacement to new positions. Also, centralized fire direction can be more easily established. A practice that proved particularly effective was the firing of a few batteries at a time, while the bulk of the artillery remained silent to avoid counterbattery fire. Massed artillery went into action only against large-scale enemy attacks.

3. Armor and Antitank Weapons

In the defense of pockets, tanks and assault guns have a dual mission. Contrary to the rules of armored combat under ordinary cir-

cumstances, they are scattered among the infantry and take part in the small-scale fighting along the perimeter. At the same time, they must be able to revert quickly to their original formation whenever they have to be used as mobile reserve against major enemy attacks. Similarly, the proper place for antitank weapons is with the front-line infantry. An antitank defense echeloned in depth, as is preferable in most other situations, must be ruled out for the same reasons that apply to the employment of the infantry.

The necessity for tight organization inside the pocket has already been emphasized. This applies particularly to traffic control which must be so enforced as to assure order and discipline, and to prevent panic. It may be necessary, for this purpose, to employ not only all available military police but also seasoned combat troops under the command of forceful and experienced officers.

All measures that must be taken inside a pocket will vary depending upon local circumstances; no two situations are alike. Therefore, set rules cannot be prescribed for fighting in pockets any more than for other types of military operations. Nevertheless, the fundamental principles outlined above seem to apply whenever troops are encircled by the enemy.

So long as the encirclement has not been completed—or before the enemy ring has been reinforced—an immediate break-through offers the best chance of success. Few tactical preparations will be necessary, if a command faced with encirclement can exploit the opportune moment by breaking out as soon as the enemy's intentions have been recognized. In most instances, however, all elements of the surrounded force will be locked in battle for several days, and the opportunity for such immediate action will pass before the situation in the pocket has become sufficiently clear. Then, especially in the case of larger pockets, a breakout can be launched only after the most careful preparations which must include some or all of the following considerations and measures.

Section III. THE BREAKOUT DECISION

Unless the encircled forces have explicit orders to remain in place, or are so weak that they must rely on relief from the outside, the decision to break out must be made before the enemy has been able to forge a firm ring around the pocket. Only if this is done, and only if preparations are begun without delay, will all measures become part of one coherent plan, directed toward a single objective.

Such situations bring out the innate aggressiveness, flexibility, and initiative of a born leader. The need for quick decisions, however, must not be permitted to cause action without plan. The proper time

and direction for the breakout, for instance, can only be determined after the following questions have been answered:

- a. When—according to the tactical situation—is the earliest suitable moment for launching the attack?
- b. Where is the enemy the weakest?
- c. Which is the shortest way back to friendly lines?
- d. What direction of attack would involve the least terrain difficulties?
- e. What time of day and what weather conditions are most favorable for the attack?
- f. Should one or several directions be selected for the breakout?

The answers to these questions will vary according to the situation, as can be seen from the preceding chapters. Actually, there may be situations in which—contrary to the principles advanced above—the direction for the breakout should not be fixed too early, at least not until the enemy's intentions can be clearly recognized. (Ch. 5)

As a rule, unless the breakout is to be co-ordinated with the approach of a relief force from the outside, the units fighting their way out should follow the shortest route back to their own lines. In many instances the direction most favorable in terms of terrain and enemy resistance cannot be used if it does not permit a link-up with friendly forces in the shortest possible time. With troops in good fighting condition, the attack can be launched at night; if they are battle weary, the breakout must be made in the daytime, so as to obtain better control and co-ordination.

A breakout in several directions offers the least chance of success. It is attempted as a last resort, in order to obtain a greater dispersal of one's own forces, which might enable some small units to fight their way back to their own lines. Such an attempt is more or less an act of desperation—when relief from the outside cannot be expected, and the distance to the nearest friendly lines has become so great that it can no longer be bridged by the exhausted pocket force.

Section IV. SPECIAL LOGISTICAL PREPARATIONS

A successful breakout is the result of sound planning and systematic preparation. It is also one of the most difficult combat maneuvers that a military force can be called upon to attempt. This fact must be taken into account in all preparatory measures. Prior to the breakout, for instance, the troops should be stripped of all unnecessary equipment, that is, of all equipment they might not need during the fighting of the next few days. This must be done without hesitation and without regard to their possible future requirements, should they have to be committed again *after* the breakout. The easier the lost equipment can be replaced afterwards, the less weight will be

given to such considerations. German commanders in World War II were never allowed to forget that every weapon and vehicle was virtually irreplaceable—a typical sign of a “poor man’s war.” To some other nations, however, these limitations do not necessarily apply.

Until the pocket force is entirely surrounded by the enemy—but as soon as encirclement appears inevitable—the last open road must be utilized for the evacuation of casualties and of all nonessential staff sections, detachments, and service troops. If there is still time, excess weapons and equipment may be moved out over the same road. The commander should not fail, however, to make full use of this last opportunity to get rid of rear echelon troops; in an encirclement they are a greater burden than superfluous equipment, which can be destroyed if necessary.

Technical preparations in the pocket begin with what might be called the “big clean-up.” All weapons that cannot be fully manned or adequately supplied with ammunition must be destroyed. The same is true of all heavy guns that might be a hindrance in view of expected terrain difficulties, as for instance all artillery pieces of more than 150-mm. caliber. As a rule, it is better to destroy one gun too many, than to drag along a single weapon that cannot be employed.

Similar principles apply to the destruction of motor vehicles. Exactly how many are to be destroyed will depend upon the availability of fuel and the requirements for the transportation of casualties and indispensable equipment; in any event, the majority of vehicles will have to be destroyed. Hardest hit by these radical measures are usually the supply services. Here, only a forceful officer in charge of destruction will be able to carry out his mission successfully.

Official papers are another victim of the general clean-up. Their destruction is a task that every soldier will undertake with fiendish pleasure. Files, administrative forms, voluminous war diaries, orders, regulations, and directives are consigned to the flames—the higher the classification, the greater must be the care taken to assure that they are completely destroyed. Only the most important papers, radio codes, and in some cases personnel files, may be left intact, so long as there is hope that they might be saved.

Effective traffic regulation is a prerequisite for all tactical moves inside the pocket. If an adequate road net exists, separate routes must be designated for the movement of supply units and combat troops, and even for armor and infantry. The Germans found it expedient to co-ordinate all traffic in a pocket by preparing a regular timetable that had to be strictly observed.

However, the problem of traffic regulation inside a pocket is not confined to troop movements. The most carefully devised system of traffic control can be upset by streams of fleeing civilians who are likely to be stricken with panic when caught in a pocket. As a rule,

therefore, it is imperative for the security of the encircled force to prohibit and prevent *any* movement of local inhabitants. Only in rare cases will it be possible to take along part of the civilian population during a breakout. Then, while the roads are kept clear, special paths must be assigned for the treks of civilians. Particularly in large pockets, the question whether able-bodied male inhabitants should be taken along or left behind deserves careful consideration; it can only be decided on the basis of local circumstances.

Extensive preparations will also be necessary if an encircled force is to be supplied by air; these preparations are described in detail in the Appendix to this study.

Section V. TACTICAL PREPARATIONS

In an encirclement a deliberate effort must be made to increase the effective strength of the combat element at the expense of the service units. Selecting the proper personnel to be transferred from rear echelon to combat duty may be a slow process, but it is of the greatest importance at a time when active fighters are needed more than anything else. In such situations, the service units—having grown out of proportion to the combat element—are largely superfluous and actually impose a heavy burden on the command. At best, they constitute a manpower reserve which, after a thorough process of selection, will yield additional personnel for combat duty. One should not expect too much of this reserve—while it is composed of military personnel, it will include few combat soldiers. Assigning an excessive number of rear echelon troops to front-line duty will only swell the numerical strength of the combat element without, however, increasing its fighting power to the same degree. The procedure completely loses its usefulness when the men transferred from service units are no longer a reinforcement of, but a burden to, the combat element. Rear echelon troops whose services have become superfluous and who can no longer be evacuated, should be placed in a single unit and held under firm control.

Demolitions, which are to prevent rapid pursuit by the enemy or to slow his exploitation of recently abandoned terrain, are to be ordered and executed in time; condemned artillery ammunition makes a good explosive for this purpose. It is advisable, however, to confine such demolitions to a few important objects. Experience has shown that as a rule the troops have neither the time nor the inclination to carry out extensive and time-consuming missions of destruction. On the other hand, the commander must take care to prevent senseless mass demolitions born of a spirit of destructiveness that is characteristic of encircled troops.

The success of a breakout will depend primarily upon the use of deception and the maintenance of secrecy. The fewer subordinate commanders informed about the actual breakout plan, the greater the chances that secrecy can be maintained. Especially telephone and radio communications must be carefully guarded. At the same time, radio offers the best means for deceiving the enemy. This may be done by transmitting dummy messages about one's own intentions, calls to imaginary relief units, reports that will confuse the enemy about the actual strength of the pocket force, misleading requisitions for supplies, and false information about drop zones and landing areas. All these ruses are certain to reduce the number of casualties during the breakout.

Tactical feints and deceptive maneuvers must go hand in hand with the measures suggested above. By moving into different positions every night, launching attacks with limited objective from various points of the perimeter, and stubbornly holding on to unimportant terrain features, the encircled force must deliberately convey to the enemy a false picture of its situation and of its intentions. This purpose can also be served by having a sizeable column composed of all available supply units move laterally across the sector from which the breakout will eventually be launched.

Effective deception can always be achieved by concentrating armor at a point other than that of the intended breakout. If these tanks proceed to execute a feint attack, the enemy, believing that he has located the main effort of the breakout force, will almost certainly divert the bulk of his forces to the threatened point. The attacking tanks are then shifted rapidly into the direction of the main break-through, and success will usually follow. (Ch. 2) Such deceptive measures by tanks, depending of course upon the fuel situation, should be used both in the defense of the pocket perimeter and—as an ace in the hole—immediately before the breakout is launched. The desired result can often be achieved by having a single tank drive in circles at night to feign the assembly of a large armored unit. No matter what measures of deception are used, they will only serve their purpose if they enable the breakout force to take the enemy by surprise. In this respect the preparations for a breakout do not differ from preparations for any other type of attack. Here, as in any offensive action, secrecy, deception, and surprise are the basic elements of success.

The most important tactical preparations for the breakout—apart from diversionary attacks—are concerned with the gradual change of emphasis from the defense of the perimeter to the formation of a strong breakout force. As the situation permits, every soldier who can be spared from the purely defensive sectors must be transferred—possibly after a rest period—to the area selected for the breakout.

This will weaken the defense and, in some places, necessitate a shortening of the line which may involve considerable risks. Enemy penetrations are likely to occur, and such local crises, although they may have little or no effect upon the over-all situation, are usually over-estimated by the commanders on the spot. These difficulties, of course, are greatly reduced if the entire pocket keeps moving in the general direction of the breakout. The necessary shifting of forces is then more easily accomplished, and minor losses of terrain on the defensive front are no longer regarded as serious setbacks. The advantage of a moving pocket in terms of morale is obvious. No claustrophobia will develop because the troops are spared the feeling that they are making a last stand in a pocket from which there is no escape.

During the defense of a pocket, local crises are a daily occurrence. The pocket commander and his staff must be ready at any moment to take the necessary countermeasures against serious emergencies. Actually, each passing hour may bring new surprises and call for new decisions, and it is not always easy to distinguish between important and unimportant developments. The commander must keep in mind that his reserves are limited and should not be committed unless a major threat develops at a decisive point. It is a result of the unusual tension prevailing in a pocket that purely local emergencies are often exaggerated and may lead to urgent calls for assistance. Frequently, such local crises subside before long, and the situation can be restored without the use of reserves—provided the pocket commander does not permit himself to be needlessly alarmed.

At this point a few words might be added concerning the attitude that must be displayed by the pocket commander and his staff. In the midst of rapidly changing events the command element must be a tower of strength. The troops observe its every action with keen eyes. In this respect even the location of the command post is of particular importance. While it should be centrally located, its proximity to the momentary center of gravity is even more desirable. Never should the operations of an encircled force be conducted by remote control, from a headquarters on the outside. This proved to be an impossibility, both from a practical point of view and because of its disastrous effect upon the morale of the troops. By the same token, no member of the command group must be permitted to leave the pocket by air. Reassuring information, brief orders issued in clear language, and frequent visits by the commander and his staff to critical points along the perimeter will have an immediate beneficial influence upon the morale of the pocket force. At the same time, exaggerated optimism is definitely out of place. The troops want to know the truth and will eventually discover it for themselves. They are certain to lose confidence if they find out that their com-

manders have been tampering with the facts in an attempt to make the situation look brighter than it actually is. As a rule, the truth told without a show of nervousness cannot fail to have a reassuring effect and might even stir the troops to greater effort.

Arranged in their proper sequence, the tactical measures leading up to the breakout are the following:

- a. Emphasis on defense; all weapons committed in support of the fighting along the perimeter.
- b. Establishment of clear channels of command.
- c. Stabilization of the defense.
- d. Reinforcement of the combat element at the expense of the service units.
- e. Evacuation of nonessential personnel; destruction of excess equipment.
- f. Gradual change of emphasis from the defense to preparations for the breakout attack.
- g. Formation of a breakout force.
- h. Shortening of the defense perimeter; further strengthening of the sector selected for the breakout.
- i. Deceptive maneuvers culminating in a diversionary attack.
- j. Breakout.

Section VI. SUPPLY AND EVACUATION

The supply reserves carried in a pocket should be no more than what the force will presumably need until the day of the breakout. Sizable stores cannot be kept; they must either be given away or destroyed, regardless of quality or quantity. In such situations the Germans found it useful to prepare so-called individual supply packages which were composed of all kinds of items for certain units and could be distributed in advance to the points where they would be needed later on. Surplus rations can be issued to the troops for immediate consumption, but if this is done too generously it is likely to decrease their fighting power. The local population will always gratefully accept whatever the troops can spare.

If a pocket force is without adequate supplies and, particularly, if the required fuel and ammunition can only be brought in by air, the escape from encirclement must be accomplished as quickly as possible. Supply by air cannot satisfy all the requirements of an encircled force; it can only remedy some of the most important deficiencies. This fact was demonstrated during the operations described in the preceding chapters and confirmed by the personal experience of the author. It is not likely to change, even if absolute superiority in the air is assured and an adequate number of planes can be assigned to the operation.

One of the most important logistical problems is that of evacuating casualties. Whether or not the wounded are taken along has a profound effect upon the morale of the encircled troops. Any measure from which they might derive the slightest indication that wounded personnel is to be left behind will immediately reduce their fighting spirit, especially if they are facing an enemy like the Russians. In such situations the commanders are under the strongest moral obligation to take the wounded along and must bend every effort to make this possible. German experience has shown that minor casualties can endure transportation over considerable distances on horse-drawn vehicles padded with straw, even in very cold weather and during snowstorms. On such movements the wounded were accompanied by medical officers who administered every possible aid during the frequent halts. The German troops encircled near Kamenets-Podolskiy (Ch. 5) regarded their convoy of casualties as their sacred trust and fought all the more stubbornly to protect their wounded comrades. Consequently, it was possible to evacuate nearly all casualties during that operation. In the pocket near Cherkassy (Ch. 4) the situation was less favorable. There, because of the most severe weather conditions and a confused tactical situation, the wounded had to be left behind in the care of doctors and other medical personnel.

Every opportunity should be used to evacuate casualties by air. They must have priority on transport planes returning from a pocket, and this priority must be assured, if necessary, by force of arms. The desperate struggle for space aboard transport planes in the pocket of Stalingrad should serve as a warning for situations of this kind.

Section VII. RELIEF OPERATIONS

The difficulties encountered by an encircled force may be considerably reduced if strong relief forces are available in the vicinity of the pocket. Even inadequate attempts at relief from the outside are better than none at all. The basis for real success, however, is the employment of experienced troops in the best fighting condition who are not likely to bog down at the half-way mark. The need for relief from the outside depends, of course, on the tactical situation and the physical condition of the encircled force; it is greatest when the troops inside the pocket are battle worn and show signs of weakening; it may appear less urgent in other situations. But wherever friendly troops are surrounded by the enemy, assistance from the outside is desirable and should be provided without delay.

Such relief operations must be planned with the same care that is used in preparing every action of the encircled force. This applies to the selection of the route of advance, the choice of the proper moment for the attack, and the timely allocation of fuel and ammu-

tion. A relief thrust cannot be launched on the spur of the moment, and undue haste will surely result in failure. Tactical preparations must follow the same principles as those for any other type of attack. The necessary strength of the relief force must be determined on the basis of the enemy situation and the distance to the objective. In most cases armor and adequate artillery support will be indispensable. All relief forces must be under one command, even if they consist of units that were originally parts of two separate armies. (Ch. 4)

Preparatory measures in the fields of supply and administration will greatly exceed those that might be taken for an ordinary attack, since the relief force must try to anticipate the needs of the troops breaking out of the pocket. All kinds of supplies, especially stimulants, must be held ready in sufficient quantities; rescue and rehabilitation areas must be prepared; and facilities must be provided that will improve the physical condition and the morale of the pocket force. Among these are troop quarters (heated shelter in winter), bathing facilities, clothing, and arrangements for mail service. These measures play an important part in getting the pocket force back into shape and ready for renewed commitment. Proper care for the wounded must be assured by assembling all available medical personnel and preparing shelter for the pocket casualties. Information as to the number of wounded inside the pocket must be obtained by radio.

The decision as to the time and place for launching the relief attack depends on specific arrangements with the pocket force. Unless a safe wire communication exists, such arrangements can only be made by radio, in which case great care must be taken to maintain secrecy. The distance to the pocket may be so great as to require the use of special types of radio equipment. In such situations the Germans used their so-called *Dezimetergeraet*, a microwave radio set operating on frequencies between 500 and 600 megacycles.

If at all possible, the relief attack must be launched on a broad front. A single thrust confined to a narrow frontage has little chance of success and is justified only if insufficient forces are available. (Ch. 2) The relief force, in this case, will have its long flanks dangerously exposed and will hardly be able to reach its objective. If such an emergency method must be used, the operation should be carried out at night.

The conduct of the relief operation must be marked by a high degree of flexibility. Frequently a prearranged plan must be discarded or modified because of unexpected enemy action, particularly if such action is directed against the troops attempting to escape from the pocket. The joint effort of the two converging elements must be geared to the needs of the encircled units who are always fighting under less favorable circumstances than the relief force. The

latter must be able to react with swift and effective countermeasures to unforeseen changes in the situation.

The battle west of Cherkassy (Ch. 4) clearly demonstrated what difficulties can be encountered in a relief operation. There, all efforts were frustrated by a combination of unfortunate circumstances. The sudden start of the muddy season had rendered the terrain virtually impassable. Relief forces approaching from the south were whittled down in numerous local engagements before they could be assembled for the main attack. Complicated channels of command and diverging directions of attack further added to the confusion. Certainly, flexibility was lacking in the conduct of the relief operation from the west. The breakout, to be sure, did not proceed entirely according to plan, as the majority of the troops emerging from the pocket missed their direction. Even then they followed a line of advance only a few miles south from the one that had been agreed upon. Because of this minor change, the relief force proved unable to link up with the pocket forces at the point where they had actually pierced the ring of encirclement.

Section VIII. THE BREAKOUT

Once the pocket force has begun its break-through in the direction of friendly lines, it must apply the same tactical principles and will be subject to the same contingencies as in any other type of attack. A particular difficulty lies in co-ordinating this effort with that of the relief force, for the purpose of accomplishing a junction of the two converging spearheads as soon as possible. German experiences vary as to what would be the most desirable attack formation for a breakout. Since the answer to this question depends largely on the local situation, no definite rules can be offered. In any event it is advisable to adopt a mixed formation composed of motorized and nonmotorized units supported by tanks and all weapons suitable for the attack. Armored units must be held with close rein so as to prevent them from outrunning the infantry. They should only be permitted to advance by bounds, with some of the armor held back. This is a necessary precaution to prevent deep thrusts by individual armored units that can be of no advantage to the progress of the main force. Specific orders must be issued both for the timely integration of all remaining elements to be withdrawn from the defensive sectors and for the conduct of rear guard action to cover the breakout attack.

A major crisis during the breakout will arise as soon as the original plan, for some reason, can no longer be followed and improvisation must take its place. As a rule this will be the result of some unforeseen enemy action. With troops that are severely overtaxed by heavy fighting in the pocket such crises may easily lead to panic. The

call "every man for himself" is the signal for general disorder marked by useless attempts of individual soldiers to make their way back to friendly lines. This can only be prevented by firm leadership and strict control, and by taking advance measures that will anticipate such emergencies, as for instance by keeping a mobile reserve, composed of armor and antitank weapons, that can be employed with a high degree of flexibility. Even a few tanks committed at the right moment can serve as a very effective means to overcome a local crisis.

The capabilities of the troops must be carefully weighed and are the basis for the timing of the entire operation. If the troops are battle weary and if the breakout is expected to involve long and heavy fighting, the operation must be conducted in several phases to provide rest between periods of movement or combat. For reasons of security, especially in the case of small pockets, all movements should be carried out during the night. Control of the troops is greatly facilitated if the fighting can be confined to the daytime.

If a breakout must be executed without simultaneous relief from the outside, a new position should be selected in which the liberated pocket force might be able to rally and to face the pursuing enemy; in most instances that will be no more than a line designated on the map where the troops are to be reorganized after their successful escape from encirclement.

Section IX. SUMMARY

The lessons learned by the Germans during World War II on the relative value of pockets left behind the enemy lines might be summarized as follows:

a. As a method of defensive combat designed to tie down substantial enemy forces, the deliberate stand of an encircled force rarely achieves the desired result.

b. The deliberate creation of a pocket and the insistence on its continued defense can only be justified if the surrounded force consists of experienced and well-disciplined troops who are able to cope with the unusual difficulties involved in this kind of fighting. Otherwise the price will be excessive since the encircled troops are usually lost and even those who manage to escape are certain to remain unfit for combat for a long time.

c. Whenever friendly forces are cut off and surrounded by the enemy, steps must be taken without delay to assure their liberation. The senior commander of the encircled units must be *immediately* authorized to force a breakout. It is even better to issue a standing order at the beginning of hostilities that would make it mandatory for the commander of an encircled force to break out as soon as possible. Only then can there be any hope of saving the surrounded troops.

without suffering excessive losses. The German High Command during World War II greatly overestimated the defensive value of such pockets. Orders for a breakout from encirclement were issued either much too late or not at all. This turned out to be a grave tactical error which could not fail to have a disastrous effect upon the entire conduct of operations on the Russian front.

APPENDIX

AIR SUPPORT OF ENCIRCLED FORCES

Section I. GENERAL PRINCIPLES

The air support available to an encircled force will usually determine the feasibility of a breakout and the manner in which it must be executed. As a rule, it will depend on the availability of air cover whether marches and combat actions should take place in the daytime or during the hours of darkness when so many additional risks and difficulties are involved. Since a breakout on a large scale will necessarily include actions that can only be carried out in the daytime, such as frontal attacks over difficult terrain or assaults against well-defended enemy positions, a strong concentration of air power, at least during these phases, is indispensable for the success of the entire operation. In an extensive theater of war, where the air force has to accomplish many diversified missions against widely separated targets, there is always the danger of a dissipation of air strength. It will therefore be the responsibility of the top-level air force command to create in time the tactical and technical prerequisites for temporary mass employment of air power at points of main effort. This is accomplished by establishing and maintaining adequate ground installations in all crucial areas so that the rapid diversion of adjacent air force units (at least for one day's operations) will not present serious difficulties.

How many air force units are required to support an encircled force must be determined on the basis of known enemy strength, the size and vulnerability of the pocket, and its distance from the nearest friendly lines. How much air support can be provided will depend essentially upon the capacity of the airfields, the supply situation, and the intensity of combat on other sectors. The air strength actually needed in such situations can hardly be overestimated. It has to make up for the critical deficiencies that always aggravate the situation in a pocket (lack of artillery ammunition, heavy losses of weapons and tanks, etc.), and to bolster the morale of the encircled troops during their difficult struggle. In addition, since the immediate vicinity of a pocket is usually the scene of large enemy concentrations, the supporting air units will find numerous opportunities to weaken the

forces of the enemy. Here, even more than in most other situations, an adequate reserve of air strength should be available, specifically for the following reasons:

- a. The defense of a pocket often takes an unexpected turn and may require the rapid commitment of additional air support that can only be provided if ample reserves are available for instant use.
- b. The possibility of heavy aircraft losses must be taken into account, particularly as a result of enemy bombing attacks on friendly airfields.
- c. The most serious crisis in a breakout may suddenly arise at a late stage of the operation. This will automatically increase the need for immediate air protection, and without adequate reserves such additional air support will not be available at the decisive moment.
- d. Entire air force units may suddenly be grounded because of unfavorable weather and terrain conditions such as dense fog or deeply mired airstrips.

Long-range weather forecasts covering a wide area should be made available to the command of the ground forces. Such data can be of the greatest importance in selecting the most favorable time for a breakout, especially if they include an accurate forecast of bad weather periods during which the enemy air force will be unable to operate. Even local and temporary weather conditions can have a direct bearing on tactical decisions. It is conceivable that an encircled force might take advantage of temporary weather disturbances over enemy air bases, which may have the effect of grounding the bulk of the enemy's local air support, while more favorable weather conditions exist behind friendly lines, permitting one's own air units to carry out their missions.

The command over all air force units in an area where ground troops are encircled by the enemy must be in the hands of one air force commander, who should also have tactical control over air formations from adjacent sectors whenever they are committed in support of the encircled force. In addition, all antiaircraft units in the area must be under his command.* In the case of an encirclement on a large scale with adequate airstrips and supply facilities existing inside the pocket, it is advisable to appoint a special air force commander for the pocket area, who should be located in the immediate vicinity of the pocket command post. This air force officer should receive his orders from the air force commander responsible for the entire area.

*Ed.: It should be remembered that in the German organization most antiaircraft units were part of the Luftwaffe.

Section II. PREPARATORY MEASURES

All preparations for air support must be carried out as inconspicuously as possible. Great care must be taken to conceal the intentions of the pocket force and, specifically, to avoid offering any clues as to the time and place of the impending attack. Air supply operations should be initiated at the earliest possible moment, to assure that the ammunition and fuel requirements of the troops for the days of the breakout can be adequately covered. With few exceptions supply by air is indispensable for the success of a pocket force attempting to break through the enemy ring of encirclement. Yet, under the most favorable circumstances supply by air remains an extremely uneconomical measure. Therefore, when encirclement appears inevitable, every possible effort should be made *in advance* to build up an adequate supply reserve, at least of heavy and bulky items; even after the encirclement has become a fact, this might still be done by a strongly armed supply convoy forcing its way into the pocket.

If a force is compelled by specific orders to submit to encirclement by the enemy, it should seek to make its stand in an area that contains at least one usable airfield. Type and condition of the terrain may render it extremely difficult to accomplish the construction of new airstrips with the limited manpower available. At least one and if possible two or more airfields for the use of supply planes—preferably with cargo gliders in tow—should be in operation as soon as possible. In this instance the ground troops must provide the necessary manpower for grading operations. In some situations it may be imperative to accomplish a widening of the pocket by local attacks, in order to capture a suitable airfield or to place an existing field beyond the range of enemy artillery.

For night operations, which as a rule cannot be avoided, each airfield must have a radio beacon, a light beacon, and an adequate supply of signal flares. All airfields inside a pocket must be under the command of forceful officers supported by experienced personnel, a sizeable number of technicians, and an adequate labor force for the unloading, stacking, and rapid distribution of supplies.

In pockets where suitable airfields do not exist from the outset and cannot be constructed, supply by air is limited to the use of cargo gliders. Although the volume of supplies, in this case, will be considerably smaller, the facilities on the ground, except for the length of airstrips, will have to be virtually the same as described above.

Dropping supplies in aerial delivery containers is an extremely wasteful procedure. Losses from drifting or from breakage upon

impact range up to 60 percent; they may be as high as 90 percent if the containers are dropped into the rubble of a destroyed town. Yet, in the case of very small pockets, this may be the only possibility for supplying the surrounded force by air. In that event, the dropping point must be fixed by specific arrangements with the encircled troops since the enemy will make every effort to mislead the approaching planes and cause them to drop their loads over enemy-held territory.

Section III. AIR RECONNAISSANCE

Air reconnaissance units must provide the pocket commander promptly with the essential information on which he is to base his decisions as to time and place of the breakout and his specific plans for the conduct of the entire operation. The missions to be accomplished by air reconnaissance include the following:

- a. Gathering information about enemy dispositions, so as to determine in what area around the pocket the enemy is weakest and where a break-through would have the best chance of success.
- b. Furnishing specific information about enemy units located in the prospective breakout area, and indicating targets for counter-battery and air attacks.
- c. Detecting enemy reserves and preparations on the flanks of the prospective zone of attack and opposite the rear of the pocket.
- d. Providing aerial photographs and photo maps of the prospective break-through area, showing traffic arteries, bridges, and major terrain obstacles, and determining whether or not the terrain is suitable for armored combat.
- e. Spotting airstrips (by using aerial photography), which might exist in the path of the planned attack, that could be used for supply by air during the breakout.

Section IV. FIGHTER AVIATION

If the encircled ground troops are in the possession of adequate facilities and supplies, a considerable advantage can be gained by having part of the fighter force operate from airfields inside the pocket or at least use these fields as advance airstrips for daylight operations. The greater the distance of the pocket area from the main air bases, the greater will be the importance of such measures for the maintenance of the pocket.

As the enemy can be expected to commit strong air units in his major attempt to annihilate the encircled troops—especially if he recognizes their preparations for a breakout—friendly fighter forces eventually have the opportunity of attacking enemy air formations that are confined to a small area, and of shooting down a relatively large number of enemy aircraft.

Section V. CLOSE SUPPORT OF GROUND ACTIONS

The employment of fighter-bombers (*Schlachtflieger*) has particular significance in the defense of a pocket where, as a rule, there is a shortage of artillery ammunition and an increased need for concealment and for saving the strength of the encircled troops. Close tactical air support is especially needed during the regrouping of the pocket force just before the breakout. At such time, close-support aviation may have to assume the role and perform the missions of the artillery. To avoid a dissipation of strength, the effort of fighter-bombers must be concentrated on a few target areas of major importance. At the same time, great care must be taken against revealing the intentions of the encircled ground troops. The strength and conduct of fighter-bomber units committed immediately before the breakout, for instance, should be largely the same as on preceding days. The targets selected should not permit any conclusions as to the actual direction of the impending attack. If it is necessary to neutralize certain areas in the path of the breakout, this must be done either sufficiently in advance or as soon as the attack on the ground has begun. In addition to providing direct support for the attacking breakout force, fighter-bombers are also employed to prevent the enemy from bringing up reserves and from regrouping his forces for the purpose of blocking the break-through attempt.

As a rule—chiefly for reasons of supply—close-support aircraft must operate from bases outside the pocket. Bombs and other appropriate ammunition that may be available at airstrips within the encirclement should be saved for a maximum air effort on the day of the breakout. Since positions along the perimeter are usually within close range of the enemy and difficult to identify from the air, the greatest caution must be used in the briefing of air crews operating over the area. This applies particularly when long-range aircraft from adjacent combat sectors are employed, a procedure which could otherwise lead to serious losses among friendly ground troops. Such aircraft should first be transferred to airfields close to the area of commitment where the crews can be properly briefed and quickly apprised of local changes in the situation.

Section VI. EMPLOYMENT OF ANTAIRCRAFT UNITS

Conspicuous changes in the disposition of antiaircraft units before the breakout may provide the enemy with definite clues as to the intentions of the encircled force. Antiaircraft guns and other tell-tale antiaircraft equipment should therefore be left in their positions (or replaced by dummy installations) until the very day of the breakout. Antiaircraft supply and service elements must be regrouped at

an earlier stage, but without attracting undue attention. Similarly, the antiaircraft protection for the ground troops during their assembly before the breakout must be so arranged as to produce the least possible change in the existing pattern of antiaircraft positions. At the same time, an ostentatious concentration of antiaircraft units or dummy positions in an area unrelated to the main effort might conceivably be used as a means to deceive the enemy.

If ammunition reserves are available, which must be left behind, or if the breakout force is without adequate artillery support, it may be advisable to employ some antiaircraft units in direct support of the attack on the ground. These units should be moved during the night before the breakout to double-purpose positions from which they can participate in the initial phase of the operation by delivering direct fire on important ground targets in addition to providing antiaircraft protection.

The general regrouping of antiaircraft units before the breakout should take place as late as possible and with a view to protecting leading ground elements, flank units, artillery positions, and critical points such as bridges and defiles. At this stage it is usually impossible to avoid stripping the remaining ground units and installations of their antiaircraft defenses. Success in carrying out these measures depends in most cases on the degree of mobility retained by the antiaircraft units.

In all these preparations it is essential to keep in mind that the main objectives in the employment of antiaircraft units are protection against low-level enemy air raids and against all air attacks that cannot be warded off by friendly fighter forces. Particularly when the protection offered by fighter aviation is inadequate, the greatest care must be used in co-ordinating the efforts of antiaircraft and fighter units.

For the breakout phase specific plans should be made to regulate the forward displacement of antiaircraft units and their priority of movement during the advance, provided it is at all possible to anticipate the various moves that might become necessary.

Section VII. EVACUATION BY AIR

Detailed arrangements must be made by the air force to use supply aircraft returning from the pocket for the evacuation of wounded, of surplus personnel and equipment, and to assist the ground command in carrying out other evacuation measures (to include, in some cases, the removal of industrial equipment). The Army, on the other hand, is responsible for providing adequate medical facilities at the air bases to which the wounded are evacuated. Since casualties must be expected to occur at a high rate during certain phases of the oper-

ation, it will be necessary to take care of large numbers of wounded in the shortest possible time.

Section VIII. AIR SUPPORT DURING THE BREAKOUT

In view of the great difficulties normally encountered during a breakout, the ground troops need protection against persistent attack from the air, as well as continuous tactical air support. Both are indispensable for the success of the entire operation. This is particularly true for the most critical phases of the breakout which occur, first, during the initial attack; second, when the enemy commits his reserves against the flanks and rear of the pocket force; and, finally, when he attempts to overtake and block the troops withdrawing from the pocket. During these phases the air force commander must concentrate all available air units and exert steadily mounting pressure at the critical points. In the intervals between these main efforts he has the missions of preventing interruptions in the advance on the ground, and of keeping his flying units in the highest possible state of readiness. It is, of course, impossible to devise a standing operating procedure for air support during a breakout, since no two situations are alike. Nevertheless, the following basic principles should be kept in mind.

During the initial phase all available air units should be committed in direct support of the leading ground elements. Air attacks on ground targets, beginning with a strong opening blow and continued in successive waves, must be closely co-ordinated with the fire plan of the artillery. The targets of fighter-bombers comprise objectives that cannot be observed from the ground (enemy artillery positions, assembly areas, tactical reserves); also enemy positions offering particularly strong resistance, enemy movements approaching the combat area, and hostile elements threatening the flanks of the advancing spearheads. Standby reserves of fighter-bombers, circling some distance away or, better still, at considerable altitude above the combat area, must be employed to eliminate any reviving enemy resistance and to reduce newly identified enemy strong points. Their presence in the air will greatly strengthen the morale of the attacking ground troops. Experience shows, moreover, that as these planes appear over the battlefield, enemy batteries will cease firing, to avoid being identified from the air. At the same time, low-flying aircraft will often draw fire from hitherto unidentified enemy positions which are thereby exposed to artillery action. Another practicable measure may be the placing of small smoke screens to blind enemy artillery observation.

To avoid hitting friendly ground troops, bombers should operate in the depth of the zone of advance against enemy artillery positions, assembly areas, and similar objectives. They might also be employed

to lay large smoke screens, specifically to eliminate enemy observation from high ground off the flanks or from dominating terrain ahead of the advancing troops. Important objectives in the area of penetration should be reduced before the breakout by thorough bombing attacks, so as to lighten the task of the ground troops during the initial phase of the operation. This cannot be done, however, if such attacks are likely to reveal the plans of the breakout force. Nor does this rule apply to enemy command posts; these must be attacked at the most opportune moment, immediately after the breakout, when the resulting confusion among the enemy offers the greatest advantage to the attacking force.

The regrouping of enemy units, which, according to German experiences in Russia, might take place between six and ten hours after a breakout has begun, must be recognized and reported by friendly reconnaissance aviation as quickly as possible. From that time on, the enemy should be kept under constant air observation.

In breakout operations of long duration the available fighter forces are usually unable to provide effective air cover at all times. In that event, their efforts must be concentrated on supporting those phases of the breakout which, in terms of terrain and enemy resistance, are expected to involve the greatest difficulties and the highest degree of exposure to enemy air attack. Between these periods of maximum air effort—which must be used to full advantage by the ground troops—it will often be necessary to restrict the employment of fighter aircraft, chiefly because of logistical limitations such as insufficient ammunition and fuel supply. Nevertheless, an adequate fighter reserve must always be ready for immediate take-off in order to defend the advancing ground troops against unexpectedly strong enemy air attacks. The more obscure the enemy air situation, the greater must be the strength of the fighter force held in reserve.

The air support for a relief force that is advancing in the direction of a pocket must, as a rule, be kept to a minimum, in order to assign the strongest possible air cover to the troops that are emerging from enemy encirclement. The forces approaching from the main front line are usually in a much better position to compensate for this deficiency by increased use of artillery and antiaircraft weapons. In such situations, the supporting fire from friendly aircraft must be carefully regulated to avoid inflicting casualties among the advancing ground troops, especially just before the link-up of the two converging forces. Even after the junction has been effected, the former pocket force might require special air protection, at least while its reorganization and rehabilitation are being accomplished.