HISTORICAL STUDY

NIGHT COMBAT



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NIGHT COMBAT

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FOREWORD

The material for this study was prepared for the Historical Division, EUCOM, by a group of former German generals and general staff officers. The principal author, former Brig. Gen. Alfred Toppe, and most of his associates served for extended periods on the Russian Front during World War II. Moreover, most of them held assignments involving troop training.

The reader is reminded that publications in the GERMAN REPORT SERIES were written by Germans from the German point of view, and that the procedures, tables of organization and equipment, combat doctrine, and staff methods of the German Army differed widely from those of the U.S. Army. It is interesting to note, however, that, in conformity with the German recommendations made in this study, our own programs are placing increasing emphasis on night combat training.

Final editing of this study was done in the Foreign Studies Branch, Special Studies Division, Office of the Chief of Military History. The draft translation of the original German text was first revised and then reorganized in the interest of brevity, clarity, and pertinence. In this process every effort was made to retain the point of view, the expressions, and even the prejudices of the authors.

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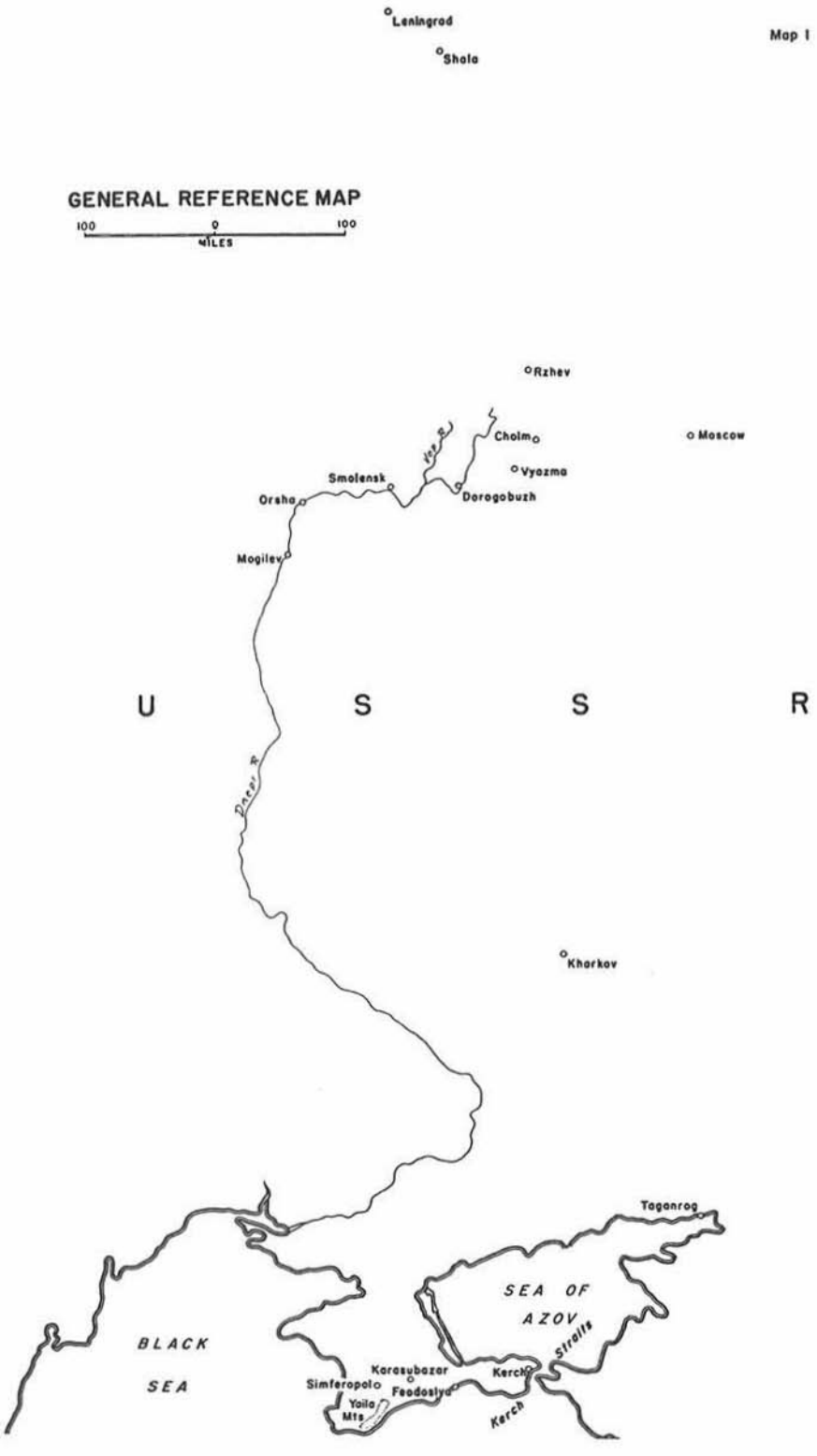
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Map 1


Leningrad
Shala
GENERAL REFERENCE MAP
100 0 100
MILES
Rzhev
Cholm
Moscow
Vyazma
Smolensk
Orsha
Dorogobuzh
Mogilev
U S S R
Kharkov
Taganrog
SEA OF AZOV
Straits
BLACK SEA
Karasubazar
Simferopol
Feodosiya
Yaila Mts
Kerch
Kerch

CHAPTER 1

INTRODUCTION

The reader of the prewar German Army operations manual, upon reaching the chapter heading "Night Combat," found that the subject was covered very succinctly and somewhat superficially. The contents failed to reveal the tremendous importance that night combat and night movements were to assume in modern warfare.

During two world wars, night and other periods of poor visibility, such as fog and snowstorms or rainstorms, gradually came to be considered the ideal time for action. Interference from the air reduced fighting and paralyzed movements in daylight hours, with the result that the space between the front and the most remote corner of the rear areas was often empty and deserted. During the hours of darkness combat and movements resumed with new intensity. After a while the German soldier considered this mole-like existence as normal, but the conclusions that should have been drawn from these undeniable facts in setting up training schedules were completely inadequate.

In Russia more and more actions occurred at night. Once this was widely recognized during the later years of the war, much of the individual and unit training took place during darkness and other periods of poor visibility.

The farther the recruit is removed from nature, the more night training he must get. Once a soldier has learned how to move and fight at night, he will be all the more effective in daytime when good visibility facilitates his tasks.

The purpose of movements in darkness or obscurity is to conceal preparations and thereby achieve maximum surprise and effect. Another important consideration is that night combat keeps the casualty rate at a minimum. Both elements apply to any operation from the time of assembly until its conclusion, whether it is a small unit action or a strategic envelopment.

Movement and combat at night are inexpedient when a certain minimum amount of orientation is impossible because terrain conditions and the enemy situation are too uncertain, or when the moon or enemy action create conditions resembling daylight.

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Bright nights make it easier to conduct night operations, but they give the enemy more opportunity to observe and interfere.

To overcome these difficulties, units accustomed to night fighting learned to apply certain practical lessons. Night movement and night combat require the most exacting preparation by officers and men, including detailed map and terrain study. Even for well-trained troops, poor visibility will cause delays that may result in a lowering of the over-all march performance or may involve loss of initiative and freedom of action. The larger the units, the greater the difficulties that will inevitably arise.

Careless night movement along roads and on the battlefield enables the enemy to take effective countermeasures. Depending on the enemy's potential and the ability of his leaders, the advantages friendly forces derive from operating in darkness may not only be cancelled out, the execution of the entire operation plan may be jeopardized by a complete stoppage of every movement, by a disruption of the chain of command, and by panic.

Before any night operation the responsible commanders must familiarize themselves with the theater of operations, become thoroughly acquainted with the enemy's matériel and his methods of employing them, and observe carefully his tactics in different situations. Possessing this knowledge, a field commander will be able to decide whether the principles of night combat should be applied rigidly or whether there may be some relaxation.

Under conditions as they exist in central and eastern Europe, troops must be capable of carrying out night marches in such a manner that their performance will not be greatly affected by observation and interference from the air. Once under way, movements in the combat zone must be completed according to schedule, even in the face of surprise enemy action. This may be achieved by breaking down units into small components, by camouflaging them, and by applying other protective measures.

The intended operations must achieve surprise, so that the enemy is not prepared for counteraction. However, it must be assumed that during large-scale operations only the preparations and the initial engagements will take place under cover of darkness. To bring the fighting to a successful conclusion will require efficient interunit communication, a clear view of the situation and the terrain, and the exercise of firm leadership—demands that can be met only in daylight.

Night operations require the closest contact among ground units and among all components of services operating in a given theater.

Bombing and strafing missions against movements behind the enemy front may save lives and decide battles; the same thing is

true of day and night attacks on enemy aircraft and airfields, which facilitate movements behind one's own front and, in some instances, constitute a prerequisite for the execution of such movements without severe casualties.

Night marches and night combat make greater demands on the troops than similar daytime operations. The responsible commanders must bear this in mind if reverses are to be avoided. Therefore, there must be some nights during which the troops may rest, because even relatively quiet sleep in daytime cannot replace rest at night. Through the use of excellent staff work and troop discipline the number of full night rests can be reduced to a minimum, but they cannot be eliminated entirely.

CHAPTER 2

PRINCIPLES OF NIGHT COMBAT

I. General

Night operations call for disciplined, cool, self-reliant troops. The mental strain involved in night combat is severe; it is easier to endure in periods of activity than during long spells of inactivity. This is why at night—even more so than by day—he who takes the initiative has the advantage. However, since orientation and co-ordination will become increasingly difficult, this initial advantage diminishes as the attack progresses.

Darkness is helpful in achieving surprise, and the attacker will derive additional advantages from the defender's inability to aim his fire effectively. To maintain control and intraunit contact and communication is difficult during the hours of darkness, and unit commanders must therefore prepare every detail of the operation plan with meticulous care. Any contingency, however far-fetched, must be taken into consideration. Success of a night attack also depends on the resourcefulness and initiative of subordinate leaders and their ability to make independent decisions in line with the over-all plan. Furthermore, since frequent and accurate reporting is of great importance, the existence of a smoothly operating communication system is essential.

Every possible method of deception, camouflage, and concealment must be employed in night operations.

II. Physical and Psychological Factors

The effect of events taking place at night increases or decreases in proportion to the degree of darkness. Operations taking place during moonlight and starlit nights, especially across snow-covered terrain, may approximate daytime conditions. Very hazy, rainy, foggy, or overcast weather calls for reliance on the auditory rather than on the visual sense and makes increased demands upon physical stamina and mental balance.

The reaction pattern to night operations is not uniform. In general, men originating from rural areas adjust quickly and easily, whereas former city dwellers take a long time and encounter many difficulties in getting used to the pecularities of night conditions. Darkness acts as a strong stimulus to the imagination and thus burdens the nervous system; a feeling of insecurity, which might eventually lead to panic, may be the

outcome. The sensitivity of eyes and ears differs between night and day, with the result that in darkness objects seem bigger and distances greater. The ears exaggerate sounds that would hardly be perceptible during the day.

Nights are normally used for resting, and for this reason fatigue and symptoms of exhaustion afflict those who have to stay awake. Unit commanders must bear in mind that uninterrupted night duty is more strenuous than similar daytime activities. Young men are not necessarily better equipped to overcome night fatigue than men belonging to older age groups. To a certain degree, however, everyone can readjust his senses and habits through continuous practice.

III. Exercise of Command

In a situation in which a daytime operation promises success, a resolute and bold commander will continue the action into the night. Determined pursuit of a weakened enemy may result in a major victory. Although mobile units are generally most suitable for launching a pursuit, foot infantry may be employed to great advantage, especially when the terrain and weather conditions reduce the mobility of motorized forces. A well-planned airborne operation, either independent of or in conjunction with ground operations, may be particularly effective in such a situation.

A commander whose air and armored power is manifestly inferior to the enemy's may score at night if his infantry is tough and has sufficient *élan*. In general, tactical movements in the proximity of enemy lines can be undertaken only under cover of darkness. In some instances it may be advisible to engage the enemy only at night, if daytime fighting would lead to heavy casualties.

Success of night operations depends primarily on careful planning, detailed preparation, simplicity of the operation order and tactical procedure, achievement of surprise, and the leaders' calmness and circumspection. Every officer who is to participate in a night operation must be initiated into the plan. The more thorough the daytime preparations, the more certain the success. Tactical maneuvers and the mechanical handling and servicing of weapons and equipment are slowed down and complicated by darkness. Proper condition and meticulous care of weapons and equipment are essential.

At night the example of leaders exercises a strong influence on the troops. It is imperative that the leaders share danger with their men and inspire them by their own courage and

determination. A reverse or defeat suffered at night has a more lasting effect on the troops' morale than one suffered during the day.

IV. Orientation

Night orientation is based on careful daytime reconnaissance, thorough study of maps—including captured ones—and the knowledge of prominent landmarks and celestial bodies. To facilitate orientation one may use the prismatic compass, radio beam apparatus, line-of-site fire by mortars, illumination of enemy terrain by artillery fire on inflammable targets, fires lighted behind one's own MLR, Very lights, parachute flares, searchlights, machine gun tracer fire, mortar salvos at prearranged orienting points, and specific night fire orientation tables.

V. Reconnaissance

Reconnaissance must be an uninterrupted effort; frequently the most useful information is gathered through night reconnaissance. During the hours of darkness friendly patrols are able to penetrate deep into enemy territory to points from which they can observe enemy movements during daytime.

In darkness reconnaissance patrols can usually determine only whether or not a specific area is occupied by the enemy. To gather more detailed information about the strength, composition, and weapons of the enemy forces, reconnaissance in force must be carried out by patrols that should return with prisoners of war.

As in daytime, patrols advance by bounds. During very dark nights, when the enemy is within close proximity of the friendly lines, reconnaissance and security activities may coincide.

Every effort should be made to carry out reconnaissance during daytime in order to obtain essential information for launching a night attack. The reconnaissance elements will then be able to guide the attack forces across the intermediate terrain at night.

Motorized patrols are generally unsuitable for battlefield reconnaissance because of the noise they make. If, however, motorized elements must be employed, they should be sufficiently strong to be capable of fighting their way back to friendly lines. Engineer detachments should accompany them on such missions.

Collecting information for use by the artillery at night is especially important and is the responsibility of the observation battalion. Evaluation of the elements of information should be performed at an evaluation center located near the artillery command post. When operations progress at a rapid pace, it will

rarely be possible to employ the entire observation battalion in properly surveyed positions.

Short-range communication intelligence operations performed by radio intercept and direction finding teams may be effective, particularly in a defensive situation or during a retrograde movement.

The closer the co-operation between all ground and air reconnaissance elements, the more accurate will be the commanders' estimate of the enemy situation.

VI. Security

At night, when troops are at rest, in combat, or on the move, security is closely related to reconnaissance. Precautions must be taken against surprise ground and air attacks, and against observation by the enemy. All units, even those in rear areas, must be highly security conscious.

A strong infantry point, marching 300 to 400 yards ahead of a reinforced combined arms battalion, will usually provide adequate security for a night movement. The distance between this advance guard and the main body depends primarily upon the degree of darkness and should in general not exceed 1,000 yards. Flank security elements should remain close to the moving column; their strength depends on the nature of the terrain. Motorized units should be preceded by advance detachments or picked advance guard units to which engineers should always be attached.

In a defensive situation the security elements should be as close to the enemy as possible so that approaching enemy forces can be detected at an early moment and appropriate measures to intercept them can be taken. The security detachments should be alert and observe the roads as well as the intermediate terrain. They must carry ample signal equipment. Patrols should be sent out to maintain contact between the security elements if the terrain is close and the enemy situation obscure. Securing communication centers and traffic arteries in rear areas is particularly important if there is danger of infiltration by enemy ground forces, paratroops, or partisans.

VII. Movements

In darkness, movements can be far better concealed from enemy ground and air observation than in daylight. The smooth execution of a movement depends upon careful road reconnaissance, easily identifiable road markings, efficient traffic regulation, and proper employment of engineer units.

If a movement that should be concealed from the enemy cannot possibly be completed during the hours of darkness, the responsible commander must decide whether it should start before dark and end before daybreak or begin after dusk and terminate in daylight. The decision will depend primarily upon the over-all plan.

During the night the average unit can march one and a quarter to two and a half miles an hour. Under favorable conditions infantry forces can cover greater distances at night than during the day, but night marches and movements are more strenuous. Marches along a wide front with full utilization of the entire road net are often more advantageous than marches in great depth along only a few roads. The best results are obtained if march schedules are rigidly adhered to and phase lines reached at the designated time. Since night movements require particularly careful supervision, light aircraft may be used for this purpose. Even in rear areas strict march discipline should be enforced. Headlights should either be removed or given a coating of blue paint.

If the road net and time permit, night movements should be carried out in dispersed formation in depth so that only a few march elements can be discovered and identified if the terrain is illuminated by enemy night reconnaissance planes.

During the approach to the enemy lines strict sound discipline must be observed. Phase lines must be designated for motorized vehicles, beyond which they are not allowed to proceed until ordered to do so. Harassing and interdictory fire from artillery, antiaircraft, and infantry weapons, as well as low-flying aircraft, can be employed to conceal the noise of motorized vehicles and thus deceive the enemy.

In the immediate proximity of the enemy all movements will have to be carried out in complete silence. Orders must be transmitted in a whisper; no other talking should be permitted. Weapons and equipment must be carried in such a way that they do not clatter. Wherever necessary, manpower will replace motor traction. The striking of matches, smoking, or any other use of light must be avoided. If contact with the enemy is expected, exposed parts of the soldier's body should be blackened. During the winter a white outer garment should be worn over the uniform.

VIII. Assembly

Proper assembly preparations must be made before launching a night attack against well-established enemy positions. If a major

offensive operation is planned, several nights will generally be needed for the approach, assembly, and execution of the attack, especially during summer when nights are short.

Assembly areas must be protected. If the attack is to be launched by fresh troops, units manning the MLR will be responsible for security during the assembly period. Tactical air support units, in particular fighter forces operating in conjunction with ground troops, will have to clear and secure the air over the approach routes and assembly areas. Antiaircraft defense must be organized before the start of night movements and before the ground troops arrive in the assembly areas.

In order not to reveal one's intentions prematurely, it is best to wait until the night immediately preceding the attack before moving the assault forces, the artillery, and the armored and motorized elements to their jump-off positions. Headquarters staffs, reconnaissance teams of the individual arms, and battery details should be moved up ahead of the main body of troops so that they can obtain in advance the data needed for the planning and execution of the attack.

The movement of large numbers of troops into an assembly area during a single night requires meticulous timing and rigid traffic regulation. It is advisable to control these movements by a special staff having the authority to regulate the traffic and sufficient traffic control personnel at its disposal.

A dense communications network, including fully operational control points, should be established along the approach routes to guarantee the smooth flow of movements. Approach routes should be marked with luminous signs. Delays caused by broken down vehicles will be avoided if POL dumps and recovery elements are placed along the approach routes and if detour routes are designated in advance. Units that are not included in the first attack wave should be held in rear areas to prevent traffic congestion.

Assembly at night is inherently difficult and is not worth undertaking unless every means of camouflage and deception is used to prevent detection by enemy reconnaissance.

IX. Attack

Attempts to exploit a daytime success often lead to continuation of an attack at night. Surprise is especially effective in conducting limited-objective attacks in darkness. During a night attack the individual soldier's moral stamina is of particular importance. In many instances he will be engaged in hand-to-hand fighting.

The success of a night operation will depend upon meticulous and detailed preparations, including proper evaluation of reconnaissance reports; study of maps, including captured ones; terrain reconnaissance; familiarizing all officers and the maximum number of NCO's with terrain features in daytime and during the night; reconnoitering and marking roads; carrying out road repairs and improvements with the assistance of engineer troops; preparing a fire plan for all supporting weapons; preparing a plan of maneuver; and establishing a communication network.

Surprise can be achieved by unexpected intervention of friendly forces at a point where there has been no previous contact, or by a variation in the direction and timing of the night attack if contact with the enemy has previously been established. In an effort to produce surprise the enemy should be lulled into a false sense of security by staging concentrations, by conducting deceptive movements behind the front accompanied by the noise of motor vehicles, etc. Other means of confusing the enemy before the start of an attack include unexpected variations in combat methods, deceptive and diversionary maneuvers, radio deception, and sudden concentrations fired by all weapons.

The timing of an attack depends on the over-all plan, strength and disposition of the attack forces, delays that may be encountered while assembling them and preparing all weapons for action, the strength of the enemy forces and their alertness, and, finally, visibility and weather conditions.

If the intent is to break through a well-established defense system in order to gain freedom of action, the attack should be timed to start a few hours before dawn. Against a well-prepared enemy such an atack will have a chance of success only if a complete penetration is achieved before daybreak, so that it can be exploited during the early morning hours. On the other hand, since limited-objective attacks launched at night ought to be concluded by daybreak, it is best to start them during the early hours of the night. In general, night attacks directed against enemy flanks are particularly effective.

The assault columns should be developed early in the attack, but deployed as late as possible. They should be echeloned in depth along a narrow zone of action. By keeping closed up, the columns will be able to maintain contact. Infantry heavy weapons should be placed in the center of the march columns until the battalions arrive at the jump-off positions. It may be advisable to assign a few guns to the lead battalions; artillery observers should always accompany the forward elements. Self-propelled guns, assault guns, and tanks are more mobile, but make more noise than horse-drawn guns.

Unit commanders should be well forward; reserves and engineer elements ought to be within their reach. Radio silence should be imposed until the start of the attack; if this is not feasible, the assault forces, which must be amply provided with radio sets, must impose strict radio discipline.

There will be no need for artillery preparation if it is expected that the night attack will achieve complete surprise and that the enemy forces will disintegrate after the initial assault. Every effort must be made to move the assault forces as close to the objective as possible without firing a shot, even though this may lead to premature detection of the plan by the enemy. Absolute silence must be maintained during the approach. The preparatory fire will commence upon request by telephone or radio. Light signals betray the presence of troops and may lead to confusion among the friendly forces.

Protected by the preparatory fire, the assault forces will make their way to the jump-off positions. Then, while the artillery shifts to counterbattery fire or to adjacent enemy sectors, the assault forces will advance, supported by their own heavy weapons and guns firing from the line of departure. Forming small attack groups the assault forces will fight their way into the enemy lines, using bayonets and other close-combat weapons. The simultaneous appearance of tanks and assault guns, as well as the use of flame throwers, may have a great psychological impact on the enemy.

Depending on the situation and the scope of their mission, the assault forces must regroup for the continuation of the attack or prepare themselves for defense against counterthrusts immediately after reaching their designated objective. Uninterrupted communication with the heavy weapons and artillery is essential. The direct-support guns attached to the assault forces should remain under the same jurisdiction until daybreak.

The attack should be broken off without any hestitation if it bogs down within the enemy's defense system and if there is no prospect of concluding it successfully by additional fire support, a change in maneuvers, or other means. In that event it may be necessary to move the assault forces back to their jump-off positions. If this should not be feasible, the attack forces will have to organize themselves for defense in the terrain they have seized. To repeat the attack during the same night at the same point is not advisable.

In the event that the assault force is composed exclusively of armored units, then the tanks, armored engineers, and armored infantry must operate as a team and stay close together to lend mutual support. If the armored force is sufficiently strong, it is

advisable to divide it into two waves. The first one should consist of tanks to lead the attack in line formation, their hatches closed, their lights off, and their guns firing; the second should be composed of the main body of armored personnel carriers and antitank weapons, and should be echeloned in depth to facilitate the shifting of forces and the protection of the flanks. The armored engineers should stay close to the assault force commander so that they can remove mine fields and other obstacles in an emergency. By refueling at the last possible moment and assuring the replenishment of ammunition, the forces should be fortified against the moment of weakness that occurs immediately after the initial objective has been seized.

As soon as the assault forces have penetrated the enemy's defense system, strong formations that possess maximum mobility and have been held in readiness in the rear area must advance through the gap without delay. A local penetration achieved at night may easily transform a static situation into a fluid one during which motorized formations can obtain freedom of maneuver. The annihilation of hostile elements capable of offering continued resistance must be left to the reserves backing up the initial assault wave.

If visibility is good, tactical air formations can lend effective support to the ground forces by attacking hostile artillery positions, units on the move, and troop concentrations in rear areas. Since detailed planning and close co-ordination with the ground forces are essential, air liaison detachments equipped with adequate means of communication should be made available for this purpose.

The carefully planned commitment of parachute units in conjunction with ground operations may lead to decisive results by paralyzing the enemy's will to resist. To find suitable drop zones and establish intraunit contact after landing are the principal difficulties connected with the employment of airborne troops by night. On the other hand, darkness handicaps the defender in determining the scope of landings and in distinguishing between actual airdrops and deceptive measures, such as the dropping of dummies.

X. Pursuit

Night pursuit may lead to the complete rout of defeated enemy forces because the pursuing troops have a decisive psychological advantage over the badly shaken enemy. When pursuing defeated hostile forces at night, the attacker must not lose contact with

them or permit them to catch their breath. Silence is no longer of any importance.

The pursuing elements may be composed of all arms. Armored units with self-propelled guns and mounted infantry, as well as foot troops with a few artillery batteries or pieces and antitank and assault guns, may be employed for this purpose. Engineers should always accompany the pursuit units to remove obstacles and clear mines without delay.

Night pursuit through unfamiliar terrain will usually confine the attack forces to roads. The speediest and surest way to overcome strong enemy resistance is to turn off the road and envelop the hostile forces. Enveloping maneuvers should be attempted, but the pursuing forces must not be diverted from their far-reaching objective by their efforts to envelop or encircle the enemy elements they have overtaken.

The air force can be of great assistance on the condition that close air-ground co-operation is maintained. Bold, continuous bombing and strafing attacks against retreating hostile forces have a decidedly demoralizing effect on the enemy command and troops. The conduct of night pursuit can be greatly facilitated by illuminating the enemy's route of withdrawal and by indicating by radio the position of the pursuing spearheads.

XI. Defense

The strength of the defender's forces usually determines the defensive system he will adopt. Against an enemy who is capable of infiltrating the defender's MLR, a continuous front provides better protection than a system of strong points that save manpower but leave the security of the intermediate terrain to patrols.

The main battle position should be fortified as far back as the division command posts. Headquarters and service troops should be integrated into the defensive system.

The fire plan that governs the co-ordination of artillery with infantry heavy weapons and small arms must be established in conformance with existing fortifications. The plan for artillery fire by night will provide for interdiction fire, delivered automatically upon request of the outpost elements, on the strip of no man's land immediately in front of the forward trenches. The co-ordinates of certain areas within the main battle position must be determined in advance so that interdiction fire can be laid down immediately in the event that enemy forces succeed in penetrating the position. All weapons should deliver interdiction fire, and for this purpose the infantry heavy weapons must be integrated into the plan of artillery fire.

The fire plan will also include concentrations that will be fired by several batteries on specific terrain features which the enemy will have to occupy on his approach to the friendly lines. Moreover, the plan will provide for counterbattery fire based on air reconnaissance and ground observation, surprise fire pinpointed on command posts, approach routes, and localities in the rear areas, as well as harassing fire.

At night, patrol activities must be increased and the troops at the outposts and in the MLR should be reinforced if sufficient manpower is available. The no man's land should be lit by flares and searchlights placed in flanking positions. The meaning of each type of light signal must be clearly established and explained to all concerned.

In an attempt to prevent the enemy from making use of ground and air reconnaissance information obtained during the day, daytime troop dispositions should be changed after dusk. Such preventive measures will also protect friendly forces against hostile artillery preparations preceding a night attack and will prevent the capture of the forward elements by enemy combat patrols and raids. At night a defensive position must present a completely different picture from that shown during daytime. The enemy forces attacking by night will thus be faced by an unexpected situation.

Whenever possible, counterthrusts against enemy penetrations should be carried out during the hours of darkness so that friendly forces can capitalize on familiarity with the positions they formerly occupied. A counterthrust against the enemy's vulnerable flank is usually preferable to a frontal attack.

In the event that local reserves are incapable of immediately restoring the situation by a counterthrust or if no forces are readily available for this purpose, it is preferable not to get too involved in fighting but rather to wait until the situation has been clarified and sizable reserves have been moved up. Then, after systematic preparation, the counterattack can be launched at dawn or even later. Too much haste may lead to failure.

Close-combat antitank detachments, positioned at advantageous points, can often inflict severe losses on enemy tanks that have broken through the MLR. Assault guns and tanks, held in readiness by the defender, add impetus to a counterattack by giving mobile support to the foot soldiers. The destruction of enemy tanks that have managed to break through the main battle position will usually have to be delayed until daybreak, when they can be taken care of by antitank and artillery pieces.

Whenever the defender recognizes the imminence of a major enemy offensive, he should adopt appropriate countermeasures for

the hours of darkness. The outpost area should be evacuated to prevent excessive casualties from preparatory fire. However much terrain the defender decides to abandon, he must not forget that his objective is possession of the MLR by the time the engagement is over.

XII. Retrograde Movements

The best time to withdraw from action is after a successful defense. Darkness facilitates disengagement and may conceal a withdrawal from enemy observation and reconnaissance for a relatively long period.

Once a withdrawal is under way, the retiring forces must make every effort to put between themselves and the enemy the maximum distance in the shortest possible time. The hours of darkness must be used not only for the movement proper but also for occupying another position farther to the rear. All measures taken by the superior commander in charge of the withdrawal must facilitate smooth and rapid execution of the night movement.

To conceal the disengagement, a covering force should remain in contact with the enemy until the main body is already well on its way to the rear. The covering force is left in position with the mission of simulating normal night activity of the full garrison. An infantry division would leave a covering force composed of one or two rifle companies with heavy weapons support in each regimental sector. If possible, one roving gun should be left in each battery position. Normal radio traffic should be maintained so long as the covering force remains in contact with the enemy. Radio intelligence produces particularly valuable results during this phase of the fighting.

The covering force within each division sector should be placed under one commander who will also be responsible for the demolition of bridges after the last elements have crossed them.

When large bodies of troops are being withdrawn over long distances, it is advisable to leave only mobile troops in contact with the enemy. Their strength will be in proportion to the supplies available for their use. Ample provision of ammunition and fuel is essential. If tanks are to be included in the covering force, it must be remembered that any minor breakdown caused by mechanical failure may lead to the total loss of the vehicle. Adequate recovery equipment and sufficient engineer troops must be assigned to the covering force.

The following preparations should be made to guarantee the smooth withdrawal of the main body of troops:

a. All elements that can be spared, especially the service units, should be evacuated as early as possible. The ammunition and fuel supplies required for continued operations and for the march movement should be stored along the routes of withdrawal.

b. The withdrawing elements should be grouped into independent combat forces capable of fighting their way to the rear, if forced to do so.

c. Nonessential signal equipment should be dismantled and transferred to the new position in the rear. In any event, a reserve of signal equipment must be set aside before the start of the withdrawal.

d. A number of measures must be taken to avoid delays during the course of the withdrawal; these include traffic regulation, establishment of a recovery service, reconnoitering, and marking roads and detours. All signs must be removed by the last unit passing through the area.

Antiaircraft units must protect the march columns against enemy air attacks. Combat aviation may assist the withdrawing ground forces by attacking the pursuing enemy troops, thus delaying their advance.

Intermediate covering positions should be established in suitable terrain to protect the withdrawing units against unexpected enemy attacks. By defending those positions the covering forces will permit the main body of troops to continue its withdrawal without interference. The covering detachments should be composed of infantry, artillery, antitank, and engineer troops. In some instances antiaircraft batteries may be attached to the covering detachments. Flank protection is essential if the enemy attempts to envelop the withdrawing forces from adjacent sectors or by using side roads, or if he tries to block the route of withdrawal. Reserves should be set aside to cover the flanks.

The superior commander must move to the rear as soon as the withdrawal from action has taken place without major incident. Aside from controlling the retrograde movement of troops and taking precautionary measures to protect the flanks, his principal preoccupation must be to organize the defense of the new position or to regroup his forces for a different assignment.

Any measure that might betray one's intention to withdraw, such as the burning of supplies and stored equipment, premature demolitions in rear areas, or increased vehicular traffic must be avoided.

XIII. Position Warfare

a. Reconnaissance. In position warfare the reconnaissance ele-

ments have the following missions:

(1) To capture prisoners by sending out combat patrols or intercepting enemy patrols;

(2) To obtain information on the intentions of the enemy forces by determining at which points they have cleared mines and cut gaps into the barbed wire obstacles; and

(3) To ascertain the strength and disposition of the enemy forces in the outpost area and their movements behind the lines—this information is needed for launching an attack on the enemy positions.

A reconnaissance in force will constitute the most effective means of clarifying an uncertain situation and obtaining information on the enemy's strength, the disposition of his artillery pieces, and the number of infantry heavy weapons at his disposal. This information will permit the superior commander to draw valid conclusions as to the enemy's intentions. In many instances the same purpose can be achieved by deceptive measures designed to draw enemy fire, such as firing a concentration of all weapons on the enemy positions for only a few minutes.

Air reconnaissance over the enemy positions, battery emplacements, and over localities in the proximity of the front will provide information on changes in the enemy situation. Regular flights should be scheduled before dark and shortly after dawn for the purpose of photographing these areas. The aerial photographs, together with their evaluation, should be made available to the front-line commanders as soon as possible, since the latter can obtain a clear picture of the enemy situation only by collating air and ground reconnaissance information.

b. Security. During the night, outposts beyond the MLR should not be maintatined at the same points as during daytime; frequent changes will prevent their becoming an easy prey for enemy patrols. Any kind of routine schedule in posting sentries at night should be avoided.

c. Troop Disposition. Only sentries and patrols equipped with small arms and a few light machine guns should occupy the outpost area. The bulk of the defense forces should be in the battle position. If an impending enemy attack is recognized in time, the outposts should be reinforced unless zone defense tactics are applied. In the event that the enemy makes a surprise attack, he ought to be stopped at the MLR; contact with adjacent sectors should be re-established and a counterthrust initiated. The reserves are to be assembled near the company CP so that the company commander can lead the counterthrust, which should preferably be conducted against the flank of the enemy penetration.

d. Measures to Prevent Infiltration. Trip wires should be strung along the wire obstacles and at other points of the outpost area. These wires should be connected to an alarm system, including floodlights. Midget radar devices are superior to all others in uncovering infiltration attempts. Patrols must constantly cross the outpost area, and a dense communication network, extending to the outpost area, should be set up.

No listening posts should be positioned beyond the outpost area at night. Double sentries should be stationed at the outposts, and these should be in contact with one another. Machine guns and mortars emplaced in the outpost area should be firmly anchored to prevent the enemy from carrying them off.

e. Combat Patrols. Patrol activity serves the purpose of reconnoitering, capturing prisoners, and seizing strong points. These operations may be carried out in strength with intensive artillery preparation to eliminate resistance in the enemy outpost area or they may be staged without such preparation by weak forces that can be assembled without attracting the enemy's attention. While the combat patrol attempts to penetrate the enemy outpost area, the artillery should deliver counterbattery and interdiction fires, the latter to seal off from the rear that section of the enemy position under attack, thus preventing the arrival of reinforcements or the launching of a counterattack. Once the patrol has crossed the zone of hostile interdiction fire, the enemy artillery will usually have little effect because of its lack of flexibility in darkness.

The members of the patrol must be well acquainted with terrain conditions and with every detail of their mission. The use of deception and diversionary measures may be indicated. Because of their greater effectiveness in close combat, the men should be equipped with light individual weapons and flame throwers rather than heavy weapons.

Patrols should adhere to a fixed timetable. Improper use of light signals usually leads to confusion that might jeopardize the success of the operation.

CHAPTER 3

RUSSIAN NIGHT COMBAT METHODS

I. Characteristics and Training of the Russian Soldier

In World War II, as in preceding wars, the Russian soldier demonstrated that he was closer to nature than his west European counterpart. This was hardly surprising since most of the Russian soldiers were born and raised far from big cities. The civilian occupation of the typical Russian soldier was that of a farmer, lumberjack, or huntsman. From early childhood he had been used to covering long distances across difficult terrain, orienting himself by conspicuous features on the ground, by the stars, and often simply by following his natural instincts. The manifold dangers that were ever present in the wide-open Russian countryside were bound to sharpen his senses, particularly his sight and hearing. Even the city dwellers, most of whom had only recently been transplanted to the densely populated cities as part of the industrialization of the Soviet Union and the resulting concentration of labor masses, remained relatively close to nature. Being attuned to the vast open spaces and desolate steppes with which a large part of his country is covered, the Russian did not know the depressing loneliness and forlornness that often overwhelmed the German soldier. The Russian was accustomed to getting along with a minimum of comfort and equipment under climatic conditions that imposed severe hardship on the invader.

The Russian was able to move without a sound and orient himself in the darkness. On a night patrol he instinctively behaved like a huntsman who is careful to avoid making the slightest noise. During long night vigils the German sentries, on the other hand, often saw no harm in conversing or lighting a cigarette or pipe just to lessen their drowsiness. When reporting to a superior who was checking their post, they spoke in a loud voice without realizing that they often permitted the intently listening Russian who was hiding in the immediate vicinity to gather valuable information. When their not-too-keen ears picked up a suspicious sound, German sentries often fired Very pistols, thus giving away their position to the enemy. Since the Germans were in the habit of posting sentries at the same place night after night over periods of several weeks or even months, Russian agents who were watching the sentries perform their routine duties were able to infiltrate the German lines without danger to themselves. In contrast to the stereotype way in which the Germans posted their guards at

night, the Russians changed the location of their posts constantly.

The Russian soldier performed particularly well as a night observer. Stern discipline and self-constraint enabled him to lie motionless for hours and observe the German troops at close range without being detected. He waited patiently for the most favorable opportunity to carry out his mission.

Russian junior officers were accustomed to act in accordance with rigid orders. Upon encountering unexpected resistance they were easily confused and, in the event of a surprise counterattack against the flank of their unit, often helpless.

In general, Russian night combat training was adapted to the terrain conditions and the characteristics of the average soldier. The exigencies of war led to an intensification of the training with emphasis on trickery, cunning, and deception rather than orthodox tactical doctrine and independent imaginative thinking.

II. Movements

Russian night movements were in many ways similar to those of the Germans, and the organization and composition of Russian march columns resembled the German pattern. Along wide roads two columns would move abreast. The Russian troops' familiarity with terrain conditions and the support they received from the civilian populace enabled them to undertake cross-country marches in terrain that was frequently considered impassable by their opponents. Both in the planning and the execution of night movements the Russian commanders were ruthless. The welfare and care of troops were of secondary importance, and whoever dropped out was left behind. This was particularly true during the Russian retrograde movements in 1941 and 1942.

Concentrations preparatory to major offensive operations always took place at night. Truck columns would haul the attack formations over long distances; the detrucking points were usually outside inhabited localities. The troops then marched on foot to the assembly areas—also at night—and immediately began to dig in. Armored and motorized infantry formations were brought up from the rear at the close of the assembly phase. In 1944, when the German power of resistance was deteriorating at a rapid pace, the Russians, apparently conscious of their numerical and material superiority, made little effort to conceal their night movements and permitted their motor vehicles to drive without dimming their lights.

In winter the Russians often used tanks to break roads through the snow. As soon as these roads froze solid they formed an excellent communications net behind the front. The following inci-

dent illustrates the Russian adeptness in moving over ice by night. During the winter of 1941–42 the southern wing of the German front was anchored on the north shore of the Sea of Azov at Taganrog. The south shore was still in Russian hands. By January the water had frozen so solid that troops could move across the ice. At night Russian units up to and even above battalion strength crossed the ice; they spent the day a few miles off shore lying motionless on the ice. As soon as darkness set in they proceeded to the shore and raided German billets and rear installations, then withdrew before daybreak. Even though the Russians suffered many casualties from frostbite, they continued their night raids as long as the water remained frozen.

III. Reconnaissance

When the Russian soldier was sent out on a reconnaissance mission, he was not confronted by any unusual problems. His natural cunning as well as his typically Slavic astuteness and cleverness stood him in good stead. That he was moving across his own territory and found ready support from the local populace were undoubtedly important but not decisive factors in helping him to achieve success.

The Russian command often combined ground reconnaissance missions with reconnaissance in force and occasionally with full-fledged night operations. The remarkable feature was the strength of the units that were always employed for night reconnaissance in force. At times units up to regimental strength carried out such missions, despite very heavy losses incurred by massing so many troops. The Russian field commanders continued to apply the same methods up to the end of the war, undoubtedly because the presence of such strong bodies of troops complicated the task of the considerably weaker German reconnaissance elements. Occasionally, the Russians added tanks to reconnaissance units, thus giving the infantry patrols support and protection. Along some sectors of the front horse cavalry was employed on night reconnaissance.

In some instances individual Russian reconnaissance patrols, led by capable and energetic officers, managed to slip through gaps or weakly held positions in the German front under cover of darkness. They either restricted their activities to obtaining information or expanded the scope of their mission by disrupting wire communications, laying mines, and carrying out commando-type raids on CP's.

In general the Russian reconnaissance methods were efficient and adapted to the conditions prevailing during the hours of dark-

ness. During fighting on the Kerch Peninsula in the winter of 1942 the Germans captured Russian soldiers who had spent two nights and one day in the immediate vicinity of the German positions and who had been able to obtain a wealth of information during that time. In another instance that occurred during the autumn of 1941, the advance guard of a German infantry division was attacked during the night in a large village where the reinforced battalion had stopped on the way to Kharkov. After the Russian attack had been beaten off, the German battalion commander found that a Russian rifle platoon had been left behind in the village after all other troops had withdrawn and that the men had concealed themselves in groups of two or three in the dunghills near the farm buildings. Their mission was to observe the Germans after their entry into the village and to communicate the information to their parent unit, which was hiding in a near-by woods with the intention of launching a surprise attack.

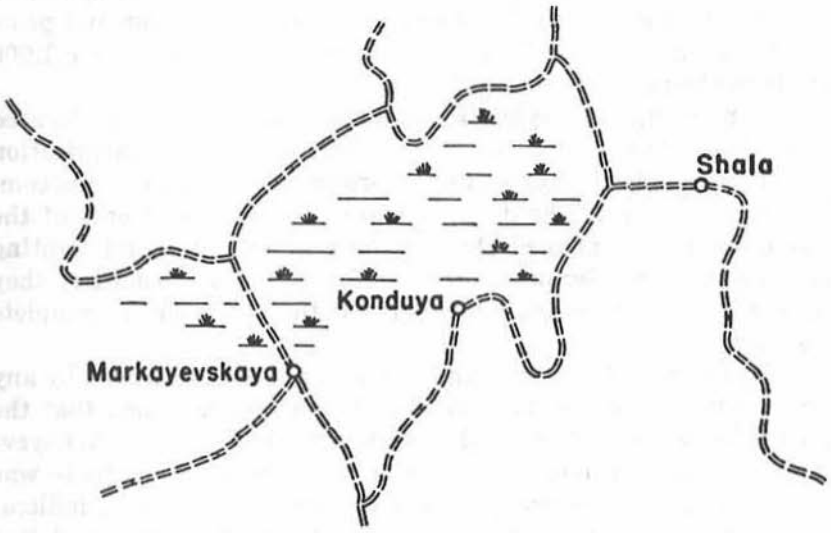
IV. Infiltration

Infiltration by small detachments, as well as by larger units up to an entire division, was probably the most effective Russian method of night combat. It was effective at all times because the Russians were able to penetrate seemingly impassable terrain in any kind of weather, all the more so when it was as poorly defended, as during the latter part of the campaign. Once the shortage of manpower had forced the German Army to resort to a system of defensive strong points rather than continuous lines, the Russians could employ their favorite night tactics to their greatest advantage. Time and again their troops slipped through a lightly held sector during the night and were securely established behind the German front by the next morning.

A good illustration of infiltration by night and its serious consequences was provided by a Russian infantry battalion in February 1942. The action occurred in the area north of Shala, about fifty miles southeast of Leningrad, and began during a snowstorm. Personnel of the Russian battalion moved on skis, pulling light and heavy infantry weapons on sleds. (Map 2)

In single file the troops traversed the Kovrigino swamp, just north of Konduya, during darkness and passed silently between two strong points of the 269th Infantry Division. Once established in the rear of the division, the Russians lay low during the day, but came to life night after night. They sowed mines along the routes of communication, attacked columns bringing up rations and ammunition, and assaulted command posts and heavy weapons positions. Every German detachment had to be on the

Map 2



THE REGION AROUND SHALA

5 0 5 10

MILES

alert throughout the night, and every morning mine-clearing squads had to remove the mines planted during the previous night.

It was not too difficult to detect the activities of the Russians because their tracks were clearly visible in the snow. But the German troops were not equipped with skis and were, therefore, unable to pursue the Russians who disappeared in the vast, wooded, and uninhabited region in the daytime. At night the enemy force received ammunition, weapons, and rations by air-

drop and continued its destructive activities on such a scale that counteraction became imperative. By an intensive German effort, the Russian battalion was gradually ferreted out and annihilated after a series of costly engagements.

For some weeks the communications of an entire division had been threatened and every night the Germans suffered casualties and losses of matériel. With men trained in night combat on skis, the division wolud have been able to eliminate the threat promptly.

During the following month the 269th Infantry Division was again subjected to extensive Russian infiltration. The division was still engaged in heavy defensive fighting in the Konduya area. The situation grew so critical that the regimental command posts had to be set up in the MLR and the division CP, only some 1,000 yards to the rear, in a dense forest.

One morning at daybreak Markayevskaya, a village located about two miles behind the front along the only communication route, was suddenly attacked by approximately 600 Russians coming from the rear. The division trains and some elements of the signal battalion engaged the Russians in hand-to-hand fighting and, though the German forces suffered heavy casualties, they were able to restore the situation and thereby avert a complete disaster.

The presence of the Russian force had not been observed by any component of the German division, but it was assumed that the enemy battalion had effected a night crossing of the Markayevskaya swamp, considered impassable at the time. Thus there was a combination of elements, such as the cover of darkness, infiltration tactics, and difficult terrain, which the Russians exploited time and again.

By 1943 most sectors of the German front were easily penetrated by the Russians during the hours of darkness. Numerical weakness forced the German commanders to group their men in a system of strong points, while small detachments made periodic night patrols across the intermediate terrain. This German weakness was quickly noted by the alert opponents. At night they silently slipped through the gaps in the German defense system and quickly established themselves unless the Germans launched an immediate counterattack. A number of such penetrations generally resulted in the loss of the German position, since the understrength units were unable to defend themselves on both sides.

In August 1943 the XXXIX Panzer Corps, composed of the 18th Panzer Grenadier and 337th Infantry Divisions, was withdrawing according to plan from the area north of Dorogobuzh toward Smolensk. Some sixteen miles east of the confluence of the Dnepr and Vop Rivers, the corps had established a delaying position

against which the pursuing Russians exerted strong pressure. (Map 3)



On 17 August the corps commander had to commit the last available reserves to hold off superior Russian forces. The 337th Division pulled out every last squad from those sectors that were not under attack and moved these troops to the Dorogobuzh–Smolensk road to prevent an enemy break-through. Along a swampy area situated some five miles south of the road, the division commander left only weak security detachments. Nothing unusual was observed during the night of 17–18 August.

On the morning of 18 August the Russian attacks against the 337th Division front slackened noticeably. However, at about 1200 an ammunition column that was setting up a dump approximately four miles behind the front was fired on from a wooded area near by. During the early afternoon German reconnaissance elements reported that the western and northern edge of this woods was held by enemy forces of unknown strength. Since these Russian forces would be able to interfere with traffic along the Dorogobuzh–Smolensk road, the corps engineer battalion was given the mission of clearing the woods the next morning. In addition, the corps commander reinforced the troops guarding the Dnepr and Vop bridges south of Yartsevo.

During the night of 18–19 August the engineer battalion moved to the wooded area and assembled for an attack that was launched early the next morning. Upon entering the woods the battalion encountered no Russian troops. Obviously, the Russians had withdrawn.

On the morning of 20 August the German troops guarding the eastern approaches to the Vop bridge, about eight miles south of Yartsevo, reported that they were being attacked by superior enemy forces. The Russians were repelled with the assistance of service troops and personnel from corps headquarters. At the time it was assumed that the attack had been made by strong partisan forces who had previously been active in this area. Since the lines of communications between the Vop bridge and the 18th Panzer Grenadier Division had to be kept open, the corps assigned two engineer battalions and one infantry battalion the mission of cleaning out the intermediate wooded area. During the night of 20–21 August these units assembled for an attack against the "partisans." While the preparations were under way, it was learned that shortly after nightfall the troops guarding the Dnepr bridge had been attacked by enemy forces, estimated at one to two companies and equipped with mortars and infantry heavy weapons. The raiders were repulsed by the strengthened guard.

On the morning of 21 August the three battalions began to comb the forest northeast of the Vop bridge. By good fortune they ran almost immediately against a Russian regimental headquarters, which they overpowered. Enemy resistance thereupon slackened and about 150 prisoners were captured, all belonging to a regiment that had infiltrated the German MLR four nights earlier.

Prisoner interrogation revealed that the entire regiment had infiltrated the German MLR south of the Smolensk road by night and had assembled in the woods four miles behind the 337th Division's lines. The mission of the Russian regiment was to cut the German lines of communications by capturing the Dnepr and Vop bridges and to support by an attack from the rear the frontal assault on the German lines that was scheduled for 22 August. On 18 August, when the regimental commander realized that the presence of his unit in the woods had been discovered by the Germans, he waited until darkness and led his regiment northward across the Dorogobuzh–Smolensk road. Upon reaching the south bank of the Dnepr he divided his force, leaving one battalion in the forest south of the river and crossing with the other on improvised floats. He spent the next day hiding in the forest northeast of the Vop bridge and let the supply trucks of the 18th Panzer Grenadier Division pass through without interference in order to escape detection by the Germans. During the night he assembled

his forces for the attack on the Vop bridge and, after its failure, he moved to the battalion on the south bank of the river and led it in the night attack on the Dnepr bridge.

Despite their failure to reach the designated objectives, the Russian forces demonstrated remarkable skill in infiltrating the German lines by night without being observed and in reassembling in the woods south of the highway. During the subsequent days the Russians moved quietly and withstood the temptation of making daylight attacks on near-by objectives, with the result that they escaped notice several nights in a row. Another notable feat was the night crossing of the Dnepr without the use of any bridging equipment.

Here, as in many other instances, most of the infiltrated Russians were annihilated, but not until they had caused much damage and confusion, and had tied down considerable German manpower. Along all sectors of the Russian front German units were plagued by constant infiltrations at night, which meant that troops at the front and in rear areas had to be especially alert during darkness.

V. Offensive Operations

Russian doctrine on the conduct of night attacks underwent many changes during World War II, both with regard to the objective that was to be attained and the methods of execution. The performance of the Russian unit leaders improved gradually. Whereas at the beginning of the campaign Russian commanders often demonstrated a lack of initiative and resoluteness, they executed many very daring maneuvers toward the end of the war. During the initial phase of the campaign they often failed to exploit an opening, but their conduct of operations gradually improved so much that eventually they were able to score major victories, especially since German resistance was diminishing and the defense usually lacked depth.

In 1941, after the German offensive had ground to a halt, the Russians reorganized their units by the integration of thousands of insufficiently trained infantry replacements. The night attacks executed by these units often were not properly co-ordinated. Massed infantry, insufficiently supported by artillery, was hurled against the German lines, its sole objective being the seizure of the outpost area. At this time the Russian command followed the World War I pattern of massed night attacks that nearly always miscarried.

By 1942 the Russian night combat methods had been improved on the basis of the lessons learned from experience. Tanks that

had been concealed during daytime suddenly made an appearance at dusk or in darkness. The probable reason for the employment of armor at night was that poor visibility protected the Russian tanks from the otherwise too accurate German antitank fire. In general, night attacks launched during this phase had only limited objectives. During the preparatory stage of such attacks, the Russians proved very skilled and courageous in clearing German mines by hand. Even in deep snow and extreme cold they spent long nights searching for mines. When they found them, they often merely detached the fuses and then covered the mines with a layer of dirt or snow.

Russian commanders had no scruples about casualties when a mine field had to be cleared in a hurry. On 28 December 1942 on the Kerch Peninsula, for instance, a Russian penal battalion was driven across a particularly dense German mine field during the hours of darkness which preceded the attack. The casualties were very high, but several lanes were cleared for the follow-up units.

In another instance, occurring on the night of 1–2 December 1942 in the sector of the German Army Group Center, the Russian II Cavalry Corps with three horse cavalry divisions attempted to exploit a three-mile daytime advance achieved by armored units twenty miles south of Rzhev. Making full use of the cover of darkness, the cavalry units sped across the snow in open formation, disregarding the losses inflicted by a few remaining German machine gunners and riflemen, and a weak artillery barrage. The Russians penetrated the German lines and, without exploiting their success, returned to their starting positions during the same night. Their objective was never known.

A few months later, in mid-August 1943, in the southern sector of the German front the Russians attacked with overwhelming forces and in the course of the day overran a weak, battle-weary German division. By nightfall the Russian infantry and armor stood about four miles behind the former German MLR within reach of a stream which, according to a map captured by the Germans, was their immediate objective. Contrary to their previous practice the Russians did not halt but immediately went on to exploit their success. During the same night, after crossing the river, they broke through the hastily organized German position, and by dawn Russian tanks stood far to the rear of the German lines. The Russian break-through could not be offset by countermeasures and led to decisive developments in this area. In this instance a bold Russian night attack could not be contained by the weak German defense.

By 1944 the Russians often continued during the hours of darkness a major offensive operation they had started in the early

morning hours. Armor always led the way. Even when carried out on a wide front, these attacks usually bogged down in the German battle position, although they occasionally penetrated up to the artillery emplacements. The slow progress of the attackers usually left the German commander sufficient time to move up reserves, which were able to restore the situation by the next morning. In the summer of that year the Russians introduced a new procedure. Before major offensives they would use deceptive and diversionary measures on a wide front. At the point of main effort they would commit infantry units supported by tanks in a night attack with limited objective. Evidently the intention was to soften up the German defense at night and to open gaps for the follow-up units. Heavy artillery preparations usually preceded the infantry assault. At the crack of dawn armored formations, held in reserve for the break-through, went into action.

VI. Defensive Operations

The Russians were always prepared to defend themselves, even during the short lulls that occur during any offensive operation. Wherever they stopped, they dug in and vanished from sight. As a rule Russian defensive positions were organized in great depth and held by strong infantry forces. Cover and concealment were excellent. Dense wire entanglements and well-laid mine fields in conjunction with ceaseless night reconnaissance provided a high degree of security. A multitude of heavy weapons, multiple rocket projectors, flame throwers, and artillery pieces gave the defensive system a firm backbone. However, the Russians did have difficulty at night in effectively co-ordinating artillery fire and in neutralizing the German artillery by counterbattery fire. Apparently, they either lacked well-trained observation battalions and flash and sound-ranging batteries, or else they did not employ them effectively. Their flat-trajectory night fire on roads, crossroads, and prominent landmarks was often very accurate, probably as a result of highly developed meteorological observation and an accurate knowledge of climatic factors.

Counterattacks, most of them supported by tanks, were well prepared and executed with great assurance. At points where the Russians expected German armored thrusts they often set up antitank fronts interspersed with individual tanks.

On the whole, Russian defensive tactics lacked flexibility during the early stage of the campaign. The German experience of the last year of the war indicated, however, that the Russian command and troops had adopted the principal features of the more mobile and flexible German tactics.

An order, issued by Marshal Semyon Timoshenko in 1941 and captured by the Germans during their advance toward Moscow, encouraged the Russian troops to make more use of night fighting, close combat, and fighting in the extensive forests. These three types of combat, he stated, were the forte of the Russians and the weakness of the Germans, who placed too much reliance on their machines. At night and in the forests, he continued, mechanical equipment loses some of its effectiveness, and hand-to-hand fighting, for which the Russians have a traditional aptitude, comes into its own.

VII. Retrograde Movements

The only Russian strategic withdrawal occurred at the very beginning of the German campaign. During the initial phase of the retrograde movement the Russians executed consecutive night marches with two columns often marching abreast. After the initial shock of the German attack had worn off, the Russians began to fight a series of delaying actions. During the battles of encirclement that took place during this phase, the Russians in the pockets would abandon their heavy weapons, equipment, and supplies and, taking advantage of the hours of darkness, would attempt to break through the German ring. Masses of infantry would hurl themselves against the German lines at what seemed to the Germans the most unfavorable points, that is to say, in open terrain, far away from any road or highway.

In carrying out retrograde movements at night Russian field commanders had no qualms about sacrificing rear guard units, which were often ordered to fight to the last man. In such emergencies the civilian populace was put to work digging antitank ditches, delaying positions, dummy fortifications, etc. The importance of mines in night combat operations was fully realized by the Russians from the very beginning of the campaign. Whereas the Russians employed armor during every phase of this retrograde movement, their air force intervened only rarely.

VIII. Partisan Warfare

Shortly after the start of the Russian campaign partisans began to harass the German rear areas, especially in the central and southern regions of Russia. Time and again German logistical plans were threatened by nightly partisan forays on supply installations, rail lines, and other important military objectives. Destruction in the rear areas was often as costly as losses at the front.

The effectiveness of night attacks by partisans was demonstrated by the experience of the 98th Infantry Division after its withdrawal across the Kerch Straits late in 1943. Behind the division front there was an extensive system of underground quarries near Adzhim-Ushkay, two miles northeast of Kerch, which were interconnected by long subterranean galleries. The partisans hidden in these quarries were well equipped, and they undoubtedly maintained contact with the Russian units across the straits.

Starting at dusk, partisans equipped with infantry heavy weapons emerged from their inaccessible hideouts to cut German supply lines, destroy signal installations, and attack weak German service units. At daybreak they disappeared without giving the German troops an opportunity to come to grips with them.

In this primitive country, with its many inaccessible hiding places, the Germans were at a loss to combat the partisans effectively because the latter were able to attack in small groups during the hours of darkness and then vanish. In view of his limited manpower the local commander was unable to cope with this persistent menace.

In the spring of 1944 the German V Corps was engaged in heavy defensive battles near the city of Kerch. At that time the corps' line of communications was subjected to frequent night attacks at points some sixty miles west of the front line. Partisan forces numbering 400 to 1,000 men made frequent night attacks on vehicles moving along the supply route Simferopol–Karasubazar–Feodosiya, as well as on villages in the same area. The partisans were hiding in the inaccessible Yaila Mountains of the Southern Crimea, where they were supplied by nightly airdrops. As a countermeasure, the corps furnished armed escorts for vehicles moving in convoy, but this meant a considerable diversion of manpower for the hard-pressed corps. No matter how vigorously German units combatted these and other partisan groups, there was no end to partisan night attacks behind the front and especially against rear installations. Darkness was the protector of the partisan, particularly in difficult terrain that the numerically weak German troops were often unable to comb.

CHAPTER 4

GERMAN NIGHT COMBAT METHODS

I. Movements

In the course of the Russian campaign night movements became increasingly important in planning and executing operations, since the German field commanders realized that marching units needed the protection of darkness if excessive losses were to be avoided. However, night marches were often hampered by the dearth of good roads and by sudden changes in the weather, which often made the existing roads impassable in the midst of a movement.

Careful preparation of all night marches was imperative. This included detailed advance road reconnaissance, establishment of traffic control posts, employment of engineers to repair defective portions of the roads, availability of recovery and evacuation crews, use of luminous road markers, and good camouflage of the marching units. In composing his march serial each commander had to anticipate possible interference by enemy air and ground forces, including partisans.

During a night motor march each serial was assigned phase lines, which facilitated proper movement control. Headlights were removed or painted blue, while blackout lights were carried in the rear. Traffic control personnel and unit commanders down to the squad leaders were equipped with red and blue flashlights.

Radio silence was observed during the march; however, stations in the various nets were standing by. Field switchboards tied in with existing lines were used in rear areas. During bright nights liaison planes were employed to good advantage for traffic control.

When motorized elements marched toward the front, they had a tendency to delay dismounting as they approached the enemy. This was particularly true during the early part of the campaign. An effective countermeasure was the setting up of phase lines, where the men were ordered to detruck. When motorized or armored units moved to assembly areas close to the front, it was found expedient to cover the noise of their motors by firing artillery and heavy weapons in their vicinity. During these movements in close proximity to the front, it was desirable to bypass road junctions and villages, as they were the favorite targets of Russian artillery. It should be noted, however, that an extensive movement control organization was required to effect such bypassing during darkness.

II. Reconnaissance

The German troops needed various aids to perform their duties during darkness; most soldiers had to be conditioned to being outdoors at night because their senses had been dulled by city life. It was particularly difficult for them to find their way in the generally monotonous Russian countryside, which contained very few good reference points.

Among the expedients used by reconnaissance units were the firing of tracer ammunition and of star shells, dropping of flares from planes, and the intermittent employment of searchlights in pairs behind the front. There was little motorized or armored night reconnaissance because vehicles are heard a long way off and attract attention. However, in situations where night reconnaissance elements had to cover long distances, motorized reconnaissance forces were sent out. As they approached the enemy, they dismounted and continued on foot.

Artillery night reconnaissance was mainly a function of the sound and flash ranging sections of the corps artillery observation battalions. Firing data were computed with the aid of the meteorological section whenever immediate fire was to be delivered. During completely dark nights German observation battalions tried to use captive balloons for detailed reconnaissance over wide areas, but this procedure was applied successfully only on a few occasions.

III. Offensive Operations

German units carried out night attacks to exploit successes achieved in daytime, as a prelude to major offensive operations, to restore the situation where the enemy had achieved a local success, and to camouflage the execution of other operations, such as a retrograde movement.

The starting time for night attacks was set with due regard for the inherent difficulties of fighting in the dark. Action at night was always time consuming; yet, it was usually desirable to conclude any operation before daybreak. The unit commander had to consider these two factors and evaluate his own and the enemy situation before he decided to launch a night attack.

The terrain in Russia was rarely ideal for night attack. In many instances there was good cover for the approach, but the enemy-held territory usually did not afford good visibility, so that the opponent's preparations for defense could not be observed. Whenever there was danger of encountering strong, well-prepared enemy forces, night attacks had to be launched in a direction from which they were not expected.

The success of a night attack depended on careful preparation, proper timing, and selection of favorable terrain. Detailed evaluation of information gathered by air and ground reconnaissance, thorough analysis of captured maps, study of the terrain by the maximum number of officers, road reconnaissance and marking, and provisions for adequate supplies were some of the preparatory measures. Before issuing the operation order the commander discussed his plan in detail and answered questions requiring clarification, so that every officer knew exactly what was expected of him and his men.

These careful preparations applied also to major attacks started before dawn and continued during daylight. Before such operations many nights were required to ready a large body of troops. Attacks scheduled to last but a single night were generally confined to a limited objective not too distant from the starting position. Even these relatively minor operations required thorough preparations to avoid enemy traps or other disagreeable surprises.

The following example shows how carefully LVI Panzer Corps prepared an attack during darkness in the area west of the Dnepr River in September 1941. The objective of the operation was Vyazma, about sixty miles to the east. The situation in the area had been static for several weeks with the 290th Infantry Division holding the front. (Map 4)

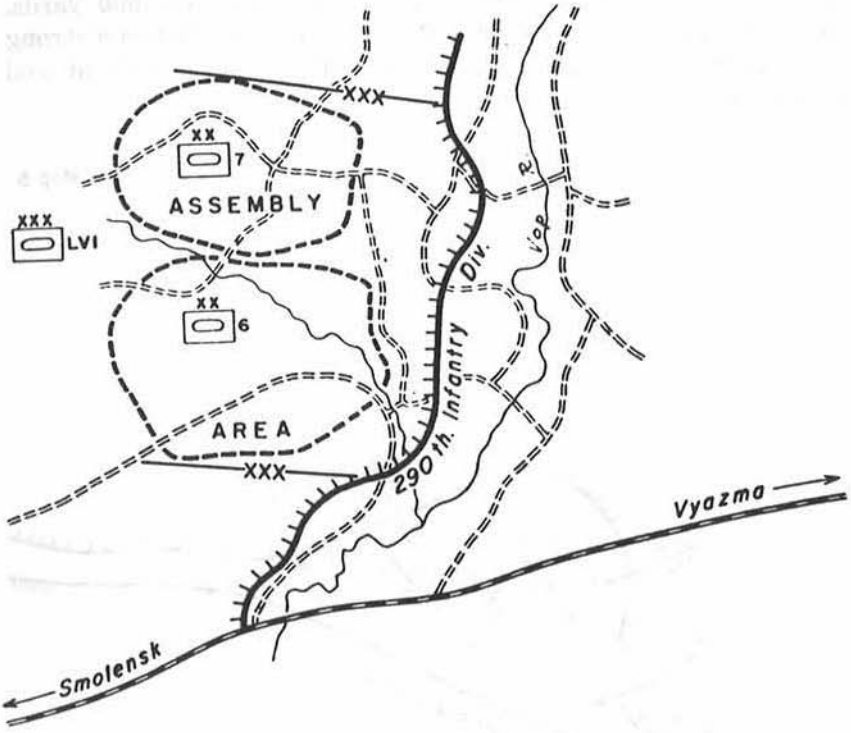
For the attack, which started on 2 October, three additional divisions were brought up from other areas—the 6th and 7th Panzer Divisions, and one armored infantry division. Improvement of the poor road net was begun as early as 20 September. Other preparations included the reinforcement of numerous bridges, aerial photography of enemy-held terrain, nuisance raids by a few planes to obscure the noise of traffic on the ground, and maintenance of traffic along the main north-south road to simulate normal supply activity.

On the night of D minus 3 the forward echelons of the two panzer divisions were moved to their assembly areas near the front, so that they could familiarize themselves with local conditions. This also gave the artillery units two days to determine their firing position and data, and to establish observation posts.

The next night the motorized infantry elements of the two panzer divisions were brought up to the area west of the major north-south road, where they detrucked. The vehicles were parked farther to the rear.

During the last night before the attack all assault troops were moved to the jump-off positions, where the forward echelons of their respective units awaited them. The 290th Infantry Division regrouped its forces for the impending attack, while the armored

Map 4



GERMAN PREPARATIONS
FOR A NIGHT ATTACK
(30 September-2 October 1941)

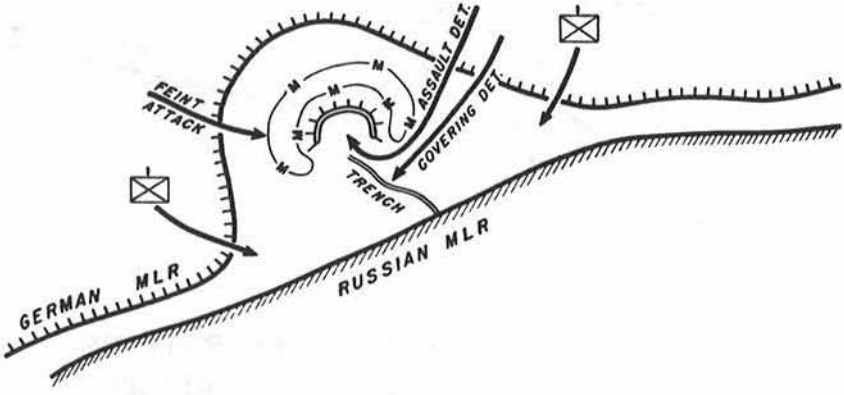
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infantry division was held back as corps reserve. At the same time the tanks and empty trucks of the two panzer divisions were moved up to the north-south road.

The operation itself started an hour after dawn and was successfully completed at H plus 30 hours when a bridgehead was firmly established east of the Dnepr near Cholm. No doubt the carefully camouflaged night preparations of the corps during the preceding weeks were a major factor, for the Russian troops apparently had not anticipated an attack by an entire corps.

In another instance the Germans launched a night attack on a smaller scale in the sector southeast of Mogilev in January 1944. (Map 5) Defensive positions were held by the German 56th Infantry Division, whose front had been pushed back along a 1,000-yard stretch to a maximum depth of approximately 500 yards. In the middle of this salient the Russians had established a strong point that afforded good observation of the German front and rear area.

Map 5



GERMAN SURPRISE ATTACK
BY NIGHT
(21 January 1944)

0 500 1000
YARDS

On 10 January the German commander decided to launch a counterattack to wipe out the Russian salient. Reconnaissance had established that the Russian strong point contained at least one hundred men, equipped with six to eight heavy machine guns, several heavy mortars, and an antitank gun. In addition, it was known that the Russian position was heavily mined, so that it had to be attacked from the rear, where it was linked to the MLR by a communication trench. It was also realized that the German

force had to launch a surprise attack, since the Russian artillery, consisting of at least six batteries, would otherwise break up the attack. The best time for achieving surprises was during the hours of darkness.

The German night attack was to be carried out by an assault detachment composed of one officer and thirty-five men, and equipped with submachine guns and two flame throwers. A covering detachment of similar size was to follow the assault troops, cut the communication trench midway between the strong point and the Russian MLR, and protect the assault detachment against interference from the south. Reinforced infantry companies were to move to both shoulders of the Russian salient, ready to occupy the former German positions after the Russians evacuated. These two companies were to break up the expected Russian counterattack by flanking thrusts. Finally, as a deceptive measure the reinforced German artillery was to deliver intermittent fire on the strong point and on other parts of the Russian front for eight nights prior to the operation.

At 0230, 21 January, the assault detachment started to infiltrate from the flank of the salient, followed by the covering detachment. At 0320 a short artillery concentration was delivered on the strong point, followed by a feint from the west ten minutes later. At 0335 the assault detachment entered the strong point. Simultaneously, the entire German artillery shifted its fire to the southern part of the communication trench. Finally, at 0340 there was an air attack on the Russian division command post.

The operation was so successful that the assault detachment suffered only one casualty; heavier losses were sustained by the covering detachment. The success may be credited to the careful preparation of the assault on the Russian strong point. A relatively small and lightly armed force reached its objective and overwhelmed numerically superior elements because it achieved surprise by night. The Russian counterattack, launched about an hour after the loss of the position, was repulsed by the two German companies' thrusts into the flanks of the Russian attack force.

IV. Defensive Operations

The Germans applied the same fundamental doctrines to defensive operations by day or night. Additional precautions taken during the hours of darkness included strengthening outposts, all of which were positioned as far forward as possible; moving local reserves close to the MLR; increasing reconnaissance activities to uncover enemy preparations for an attack; and employing search-

lights and flares to light the terrain over which the attacking enemy had to advance.

Artillery and infantry heavy weapons played an important role on the defensive. Careful preparations for night fires had to be made in daytime, so that concentrations or counterbattery fire could be ordered during the night as soon as a worth-while target was detected. When sufficient ammunition was available, well-aimed artillery fire often forced the enemy to delay or cancel his planned attack, or at least to change its direction. Interrogation of prisoners revealed that accurate night fire had a particularly demoralizing effect on the Russians.

By massing overwhelming strength for night attacks the Russians frequently penetrated the German front positions, but the impetus of their attacks was usually lost as soon as they ran into infantry reserves that had been promptly moved up. The Germans therefore found it advisable to construct several positions in depth. In general the second line was 70 to 100 yards behind the MLR and was formed by a continuous trench with mortar and machine gun emplacements. About 700 yards to the rear were the heavy weapons, the company CP, and the company reserves. Barbed wire and mine fields protected the positions, and communication trenches connected the entire system. This disposition enabled the reserves to move up quickly to aid the forward elements or to seal off Russian penetrations. Mine fields were laid in front of the first and second lines, and a dense wire net connected the various positions with the CP.

When German manpower became depleted, continuous positions could no longer be maintained. The German forces relied instead on a system of widely separated strong points; however, Russian infiltration tactics were so effective that the Germans considered this defensive system merely an emergency improvisation, to be applied only when a continuous line could not be manned.

V. Retrograde Movements

Whenever possible German units were to take advantage of the hours of darkness to execute retrograde movements. Special precautions against enveloping maneuvers and parallel pursuit were mandatory because the Russians with their uncanny ability to traverse seemingly impassable terrain usually pursued the withdrawing Germans relentlessly. One of the precautionary measures applied by the Germans was to occupy in advance all critical points behind the front line such as defiles, dominant hills, bridges, and road centers. Another measure was to organize all troops who could be spared at the front into independent combat forces that

could fight their way back if it became necessary. No more troops were to be left in contact with the enemy than could be adequately supplied: "Rather fewer men, and plenty of ammunition and gasoline" was the accepted maxim for organizing an effective covering force.

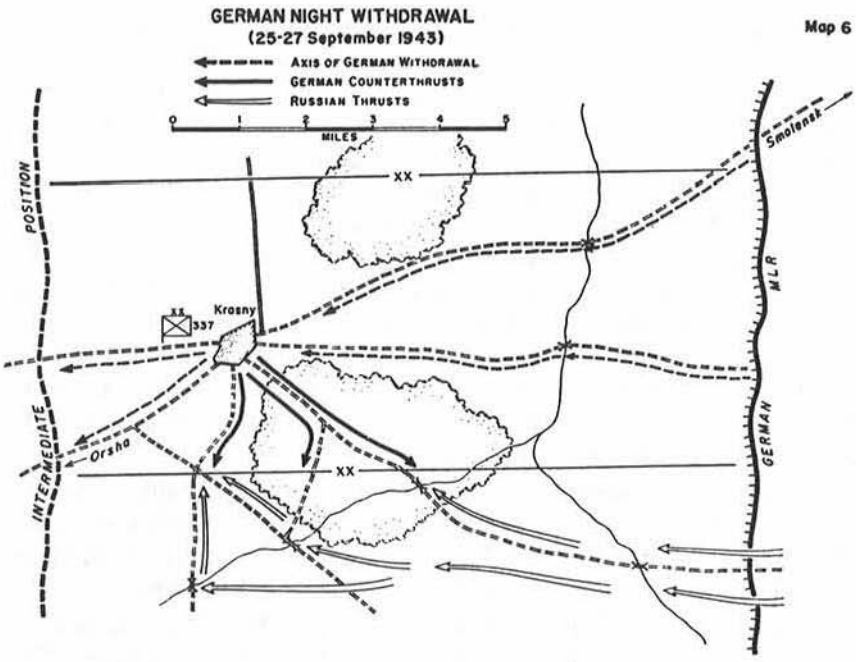
During large-scale retrograde movements, the Germans preferred to leave mobile units in contact with the enemy. Since minor technical defects were liable to lead to total loss, only tanks in perfect condition were to be employed to screen a withdrawal. The Germans also found it expedient to include in the covering force many maintenance and recovery crews as well as strong engineer units equipped to carry out extensive demolitions. Additional covering forces had to occupy the rear positions before the retrograde movement was initiated.

Having made preparations, a unit commander could evacuate the bulk of his troops to the rear under cover of darkness, while the covering force simulated normal activity at the front in order to conceal the withdrawal from the attacking Russians.

In the autumn of 1943, the 337th Infantry Division conducted a successful withdrawal in accordance with these principles. The operation started in the area north of Dorogobuzh and was to end with the occupation of the Panther position, which was under construction in the Dnepr bend east of Orsha. By the middle of September the 337th Division reached a point some twelve miles southwest of Smolensk, where for several days it repulsed attacks by superior enemy forces.

On the morning of 25 September the division received orders to break contact with the enemy, beginning at 2000 the following day, and to reach the Panther position by the morning of 28 September. Thus two nights and one day were available for a retrograde movement of about thirty-five miles. The following account covers only the first part of the withdrawal, from the morning of 25 September until the morning of 27 September, when an intermediate position was reached. (Map 6)

As soon as he received orders for the withdrawal, the division commander initiated the essential preparations. Reconnaissance detachments formed by division headquarters, the two infantry regiments, and the artillery battalion were given the mission of assigning sectors of the Panther position to each individual unit and of finding suitable terrain for an intermediate position where the pursuing Russian forces might be delayed west of Krasny. Advance detachments accompanying these elements were made responsible for marking the routes of withdrawal and for controlling the movement of the different columns to their destinations.



During the night of 25–26 September most of the service elements of the division were moved behind the Panther position. Along the routes of withdrawal they established fuel and ammunition dumps to meet the requirements of the combat elements. Most of the signal communication equipment was also moved behind the Panther position; only essential wire lines were left at the front, while reserve equipment was placed in the vicinity of Krasny. The reconnaissance battalion was moved to the same area.

To assure a smooth flowing movement, traffic was strictly regulated and towing vehicles were placed at crucial points. The use of alternate routes was explored. A number of footbridges were constructed across a brook three miles behind the front. Simultaneously, preparations were made to blow up these footbridges and the two road bridges east and northeast of Krasny after the last German troops had crossed. The local inhabitants were moved to wooded areas away from the indicated routes of withdrawal to prevent their interfering with the troop movements. Past experience had shown that many civilians would attempt to elude the onrushing Soviet Army by joining the German units. Finally, to protect the operation against interference from the air, the division requested the assistance of an antiaircraft unit, and one flak battalion with five batteries was made available on 26 September.

The withdrawal began after dusk on 26 September, but did not

take place entirely in accordance with the division's schedule. At H minus 30 minutes the commander was informed that the enemy had struck hard in the adjacent sector on the right. Accordingly, the reconnaissance battalion, reinforced by an 88-mm. battery, made a night march from Krasny southeastward to a bridge across the brook in the neighboring sector. The move was made to prevent a Russian flank thrust from the south. As an additional precaution reconnaissance detachments, composed of men from the division headquarters company and the division's military police detachment, were sent from Krasny to where the division boundary crossed roads leading south and southeast from there.

Starting at 2000 the main infantry and artillery components rapidly withdrew westward. Near the front only isolated Russian reconnaissance detachments were observed. Therefore, the division commander ordered his rear guard to withdraw ahead of schedule, at 2400.

The expected flanking thrusts from the south materialized at 2300, but, thanks to the timely measures taken, the Russians were held off at all points. Without interruption the division continued its movement and by 1000, 27 September, reached the intermediate position.

This example illustrates not only lessons learned by the German Army but also several peculiarities of Russian night combat. The Russians were hesitant in launching frontal pursuit. In general they preferred to envelop or thrust into the flanks. Therefore, a Russian penetration usually implied a threat to the adjacent unit, rather than to the one originally under attack. Russian night attacks were generally carried out by infantry and armor without artillery support. Toward the end of the war the Russians made increasing use of their air force, whose bombing attacks were directed against vulnerable fixed targets.

Withdrawing German troops adapted themselves to these peculiarities by certain countermeasures. Once a night withdrawal was under way, it had to be completed without delay so that the troops would be ready to offer renewed resistance in the next position. The command echelon of a major unit had to move to the rear position at an early time so that the unit commander could make appropriate dispositions to counter any possible threat to his flanks. Strong flak units had to be attached to the withdrawing troops to protect them against air attack.

CHAPTER 5

TRAINING

I. General

Since training is a prerequisite for success in battle, training programs must simultaneously utilize lessons from past experience and anticipate future developments, particularly in the field of technology. No matter how fundamental the changes in tactics and techniques, it will always be up to the individual soldier to do the actual fighting. For this purpose he must be trained and indoctrinated. The longer and more thorough the training, the more effective it will be. Training and educational programs must be so devised that they stimulate the soldier's initiative. Only on that basis will military planners be able to shape a powerful and flexible instrument that will be capable of withstanding the vicissitudes of war.

In night combat he who is conditioned to darkness will be at an advantage, and training must therefore strive to restore the soldier's native sensitivity, which has been dulled by city life. Against a potential opponent who has the innate characteristics of a tough, ruthless, and cunning night fighter, proper training is indispensable.

German field commanders with many years of practical experience advocate that up to 50 percent of all training be conducted at night, starting from the very first day of basic training. In their opinion it is unnecessary to devise a specific night training program. They advocate that the most important features on the weekly training schedule take place at night and that the lessons learned in daytime be repeated and driven home during the hours of darkness. By shifting part of the regular schedule from day to night, one may achieve the dual purpose of toughening the soldier and making him a night fighter.

The better a soldier knows the mechanics of his profession, the more self-confident he will be. The morning after a night problem should not necessarily be a rest period since trainees must get accustomed to hardship at an early stage. For instance, to simulate combat conditions a trainee returning from a night exercise should be given a short break, followed by field training until noon. Moreover, to toughen the trainee, field sports should be included in the schedule.

II. Individual Training

Individual training should begin by familiarizing the trainee with the peculiarities of the night. His eyes and ears must be conditioned to a variety of unaccustomed impressions. Since this conditioning process is gradual, it may be practical to start with lectures and demonstrations. Competitive exercises should be initiated as early as possible since they arouse the trainee's interest in night combat. The recruit must learn that at best he can perceive only the outline of an object without any detail. Since he can observe better from below than from above, he must get down on the ground. Distances are difficult to estimate in the dark and the position of a distant light can, therefore, be easily misjudged. By lighting a flashlight, a match, or smoking a cigarette the soldier might betray his presence even to a rather distant foe.

Sounds are transmitted most clearly at night, and the trainee must learn to differentiate between ordinary noises and those that should arouse suspicion. By putting his ear to the ground he will often be able to hear noises that are otherwise inaudible. To familiarize the trainee with nighttime conditions, preliminary marksmanship and range firing exercises should be shifted to the hours of darkness at an early stage in the training. Cross-country night marches may occasionally be combined with practice alerts. Since a sudden drop in temperature during the night or unexpected ground fog during the early morning hours may affect the trainee's health, he must be taught to take appropriate precautions.

During the next stage of individual training the recruit should learn to orient himself by the stars, by prismatic compass, by tracer and various other types of signals, and by terrain features briefly observed during daylight. He must know how to move silently, both erect and prone, at first across familiar, then across unfamiliar terrain, taking every precaution not to attract the enemy's attention by the clatter of weapons or equipment. During daytime he must prepare heavy weapons positions for fire against potential night targets. In addition, his training should include practice in patrolling and close combat at night, use of pyrotechnic signals, performance of sentry duty, attacks on enemy outposts, employment of intrenching tools without attracting attention, messenger duty, etc.

In peacetime, individual training is followed by unit training beginning at squad level. In the wartime training of replacements, one may discard this systematic program and use a mixed schedule if the need for additional manpower is urgent and if experienced, outstanding instructors are available. Such a mixed program consists of alternating individual with unit training by scheduling,

for instance, two days of individual training, followed by one day of squad and one day of platoon training, and reverting to one day of individual training, etc. The objective in setting up such a schedule is to obtain effective teamwork at the earliest possible moment. The attached tentative training charts, based on the practical experience of a German training instructor for armored units, contain suggestions along these lines. (Appendices I–VII) The disadvantage inherent in this type of program is that both the instructor and the trainee may be overtaxed by such a crowded schedule. Careful supervision of the training activities is therefore indicated.

III. Weapons Training

A soldier's familiarity with his weapons may be a decisive factor in night combat. To achieve complete mastery in the manipulation of weapons and equipment, the trainee must practice all postures—first while in camp, then under simulated combat conditions, and finally in the dark and blindfolded. The last type of individual training can be given only in the field, and its objective is to perfect the trainee's skill until he qualifies for unit training. Each arm of the service will proceed according to established procedures.

IV. Unit Training

Squad training should emphasize firing practice at dusk, in the dark, by moonlight, and in artificial light. Firing practice should frequently be combined with an extended exercise, such as a strenuous march or reconnaissance problem, during which the unit should switch to extended formation after dusk. Only thus will the trainee get accustomed to the idea that he must be able to fight even after great physical exertion. Special importance should be attached to firing practice as part of defense in twilight and moonlight in order to condition the trainee to enemy attacks and give him confidence in his unit's ability to defend itself during the various stages of darkness. Additional subjects of instruction are night patrolling and reconnaissance, combat patrol missions, teamwork in firing heavy weapons, execution of technical missions normally assigned to engineers, close combat against tanks from foxholes, first aid in darkness, protection against frostbite, etc.

Advanced unit training embraces all types of combat, with emphasis on combined arms operations. Starting at platoon level this training phase culminates in large-scale combined arms maneuvers. The lessons learned by the individual will now find their

practical application in the field. Passing through the execution of different phases of night operations, the training of the unit progresses to uninterrupted day and night exercises which emphasize various types of combat in darkness.

The combined arms maneuvers should feature co-operation between armored, tactical air, and airborne units. The training for graduate officers of advanced staff schools should stress planning of combined arms operations and exercise of command by night.

The ideal night fighter is a self-reliant, fully integrated soldier commanded by a cool, resourceful, and thoughtful leader who inspires confidence and determination. Only if training can produce such men will an army have a chance of success against an adversary who not only is unhampered by darkness but even seems to thrive on it.

APPENDIX I

EIGHT WEEK NIGHT TRAINING SCHEDULE FOR TANK COMPANY

Note. All training to be conducted during hours of darkness, unless otherwise indicated.

Participants	Weapons training	Firing practice	Combat training
		First week	
Entire company..... *Note.* Specialised training for tank and truck drivers and radio operators is not included in this unit training schedule.	Locking and loading of weapons; preliminary marksmanship on transition range.		Observation and sound detection exercises; night orientation by the moon, stars, compass, and prominent landmarks; terrain appreciation and utilization; ranger tactics; estimating distances; concealment and entrenching in the dark.
		Second week	
Entire company.....	Automatic rifle and machine gun.	First rifle practice under searchlights.	Orienting exercise, including practice under Very signal lights and unobserved approach to target; vision exercise; judging distances by sound and sight; estimating velocity; terrain appreciation.
Tank gunners.....	Turret weapons operation (machine gun and tank gun).		
		Third week	
Entire company.....	Machine gun.....	Second rifle practice under searchlights.	Close-in antitank combat.
Tank gunners.....	Turret weapons operation.		Tank, weapons, and equipment inspection and preparation for action.
Tank radio operators.....	Machine gun.		
Tank drivers.....	Pistol.		
Truck drivers.....	Rifle and/or submachine gun.		
		Fourth week	
Entire company.....	Machine gun.....	Machine gun practice under searchlights.	
Tank gunners.....	Turret operation.....	Aiming practice with stationary and moving targets; turret machine gun practice.	Target identification and designation; identification of enemy tanks under varying conditions of visibility.
Tank radio operators.....	Machine gun.....	Bow machine gun.	
Tank drivers.....	Pistol.....	Pistol.	
Truck drivers.....	Carbine and machine gun.	Rifle.	

Participants	Firing practice	Combat training
	Fifth week	
Entire company.	Machine gun.....	Outguard duty; security patrolling; sentry duty; relieving sentries; defense against raids; patrol missions.
Tank crews (including radio operators).	Turret and bow machine guns.	Night march; road reconnaissance; road marking; moving into an assembly area and protecting same.
	Sixth week	
Entire company.		Close combat; establishing contact; defense against raids; reconnaissance missions; close-in antitank combat.
Tank crews.....	First pistol exercise.....	Driving by directional gyro and compass; armored security patrols; protective measures against mines and antitank guns; defending disabled tanks against partisans and close-in antitank weapons.
	Seventh week	
Entire company.		Night exercise; security and defense against infantry and tank attacks; close combat in towns and forests.
Tank crews.....	General firing practice, including tank gun; second pistol exercise.	Counterattack (including regrouping and security until armored infantry elements have organized themselves for defense in newly taken positions); defensive and offensive fighting against tanks and antitank weapons.
	Eighth week	
Entire company.	Grenade throwing exercise.	Night maneuver emphasising defense of strong points.
Tank crews.....	Tank gun firing practice.	Extended problem with night-day-night march (road and cross country); regrouping of platoons for counterattack at night; combat against tanks, antitank weapons, and artillery, immediately followed by defense against tank-supported infantry counterattack.

APPENDIX II

TWELVE WEEK NIGHT TRAINING SCHEDULE FOR ARMORED INFANTRY TROOPS

Note. Close combat training should be given first individually, then squad against squad, and should be based on small unit actions involving antipartisan warfare, combat patrols, and counterattacks. Individual training should be conducted in slow motion under supervision.

Weapons training	Firing practice	Combat training	Firing practice	Combat training
First week			*Fifth week*	
Locking and loading of weapons; preliminary marksmanship on transition range.		Observation and sound detection exercises; orientation by the moon, stars, compass, and landmarks; terrain appreciation and utilization; ranger tactics; estimating distances; concealment and excavation in the dark.	Night firing with small arms and heavy weapons.	Construction of entrenchments; use of entrenching tools; preparation for defense; construction of obstacles; sentry duty and conduct in position; fire fight; co-operation with heavy weapons in defense; relief and evacuation of a position during darkness as a result of an enemy attack; enemy penetration and counterattack; close-combat training; use of armored personnel carriers; approach and return of patrols; night marches; forced marches under simulated air attack; establishment of tent camp; precautions against noises, lights at night; retrograde movement under heavy enemy pressure, involving formation of covering force.
Second week			*Sixth week*	
Individual weapons training; locking and loading; setting up firing positions; aiming at light and muzzleflash under varying conditions of visibility; emplacing weapons for defense; and preparing machine gun for action.		Setting up and securing bivouac; unobserved approach to same by alternating squads; night movement; camouflage; second exercise in estimating distances; patrol training; competitive squad exercises; creeping and crawling; suppression of noises made by equipment; utilization of terrain under different light conditions during the hours of darkness; change in concealment and means of orientation at dawn; security of bivouac area at dawn combined with squad patrol exercises.	Night firing; hasty snapshot firing with rifle, pistol, and submachine gun.	Forest fighting; fighting in inhabited localities; fighting against partisans; night attack against airborne troops; employment of armored personnel carriers and heavy weapons; teamwork with tanks at night; fighting against tanks at night with antitank close-combat weapons; at dawn—preparations for river crossing, crossing on pneumatic floats, establishment of a bridgehead, and defense of the bridgehead.
Third week			*Seventh week*	
Individual weapons training; rifle and submachine gun marksmanship during darkness; aiming weapons at muzzle flashes and by direction of sounds.	Night firing.....	Noiseless removal of obstructions; movement into enemy lines; hand-to-hand combat to include jiu-jitsu, bayonet training, lassoing, clubbing, etc.; approach and withdrawal marches simulating combat conditions.	Night firing; hasty and snapshot firing with automatic rifle; firing from hip with machine gun.	Combat patrol training; infiltration and raids; hand-to-hand fighting; overpowering garrison occupying a trench; posting of rear guards; overcoming march obstacles, such as mine fields and terrain contamination; attack by infiltrating an enemy position; preparation for defense; dawn attack against MLR.
Fourth week			*Eighth week*	
Grenade throwing with practice grenades.	Live grenades (emphasis on precision and long-range throwing).	Deployment from moving columns; transmission of messages; maintenance of contact; security patrols; penetration of a position involving hand-to-hand fighting; outflanking a position; defense against counterattack; pursuit; shifting to the defensive; co-operation with supporting weapons; prepared attack at dawn; cross-country march; reinforced point security; orienting and repelling enemy counterattacks; all-around security; employment of heavy weapons; noiseless clearance of obstacles; motorized reconnaissance.		24-hour company problem to include: daytime assembly; attack, penetration; switch to defensive, and entrenchment; night construction of defensive positions, teamwork with heavy weapons, night supply operations, relief, repelling attack, sealing off penetration, and counterattack; dawn attack with armored personnel carriers and tanks from prepared positions.

Specialized training, third to eighth week

The entire specialized training program for armored personnel carrier, heavy machine gun, infantry cannon, mortar and bazooka crews and drivers included in the 8-week schedule must be repeated at night and incorporated in the light weapons squad training to perfect combined arms teamwork. During firing practice the light weapons squad should, if possible, be placed in such a way that the heavy weapons can fire overhead, even at night, safety considerations permitting.

Advanced training, ninth to twelfth week

Repetition of all important phases and elimination of all deficiencies. Particular emphasis should be placed on squad and platoon firing practice at night, in co-ordination with heavy weapons and if possible with tanks. Penetration into prepared positions should be practiced with live ammunition and hand grenades. Night attack by combat patrols should be staged repeatedly with live ammunition. Close antitank combat should be practiced until completely mastered.

APPENDIX III

EIGHT WEEK NIGHT TRAINING SCHEDULE FOR ANTITANK ELEMENTS

Weapons training	Communication training	Combat training
First week		
Locking and loading; aiming and target drill.		Observation and sound detection exercises; night orientation by the moon, stars, compass and prominent terrain features; terrain appreciation and utilization; ranger tactics; estimating distances; concealment; cooperation with other arms.
Second week		
Pistol and submachine gun practice (stripping and assembling, locking and loading); machine gun practice (stripping and assembling, changing barrel and bolt mechanism); 75-mm. self-propelled antitank gun (stripping and assembling breech and movement mechanism); gun aiming practice.	Servicing of radio equipment; message reception; communication at night.	Estimating distances; target recognition; target designation under varying conditions of visibility; use of entrenching tools; camouflage; cooperation with other arms.
Third week		
Pistol and submachine gun (locking and loading, unloading); machine gun (locking and loading, unloading, changing barrel and bolt mechanism, moving into position); 75-mm. gun (stripping and assembling breech and movement mechanisms, immediate action); antitank gun firing practice; maintenance, care, and cleaning.	Sending and receiving messages; types of communications; transmission of clear text messages.	Infantry basic training: security during rest periods; conduct of reconnaissance patrols; transmission of messages. Antitank training: march, halt, security measures, reconnoitering a suitable emplacement, preparing and maintaining an emplacement.
Fourth week		
Pistol and submachine gun training; machine gun training (immediate action); 75-mm. gun training; exercise for antitank guns with coaxially mounted machine gun; turret practice; aiming under varying conditions of visibility; assistant gunners training, boresighting.	Radio training—connecting of the equipment components, tuning.	Infantry basic training: reconnaissance patrols; reporting; use of the prismatic compass; entrenchment. Antitank training: destruction of stationary tanks (demolition and incendiary charges); co-operation with other arms; tank destroyer training to include: moving into assembly area, reconnaissance of jump-off position.
Fifth week		
Repetition of preceding week's schedule plus firing practice; turret exercises; aiming practices with artificial lighting; instruction in mines; handling of ammunition; antiaircraft defense.		Relief at night; conduct during phosphor-shell barrage.
Sixth week		
Firing practice; exercise with antitank and coaxially mounted machine gun.	Types of communications; transmission of messages; tuning; changes in frequency.	Antitank training; co-operation with attached infantry platoons; fire fights during darkness; pitching grenades from antitank gun; unexpected missions.
Seventh week		
Repetition of previous week's training.	Repairing minor defects.	Infantry basic training: setting up tent, construction of huts and temporary shelters. Antitank training: duties in assembly area and jump-off position, duties involving traffic control, night recovery of damaged antitank gun, and night supply.
Eighth week		
Repetition of previous week's training; combined firing practice and specialized training.	Repetition of signal training.	Antitank training: problems involving approach march, reconnoitering of an assembly area, reconnoitering of and concentration in a jump-off position, move to alternate position, briefing of forward observers, relief and supply operations, teamwork with supporting armored infantry platoon and assault units during simulated elimination of an enemy penetration by counterattack at dawn (antitank company supporting armored infantry battalion).

APPENDIX IV

TEN WEEK TRAINING SCHEDULE FOR CLOSE COMBAT AT NIGHT

Participants	Night firing practice under simulated combat conditions	Combat training at night
	First week	
	See Appendices I and II.	
	Second week	
Entire armored reconnaissance unit.	Hand grenade precision and combat throwing; sniper training; hasty firing and firing from hip with immediate follow-up.	Overpowering sentries with and without weapons; defense against bayonet, dagger, rifle butt, shovel thrusts; jiu-jitsu; close antitank combat.
Scouts.		Outpost training; patrol leader training.
	Third week	
Entire unit	Sniper training; firing light machine gun while moving; hasty firing and firing from hip at moving targets.	Holds used in hand-to-hand fighting; penetration into position involving close combat.
Scouts.		Eliminating a strong point; cover and concealment; creeping and crawling; construction and removal of hasty obstacles.
Patrols.		Dismounted reconnaissance and fighting; construction and removal of hasty obstacles.
	Fourth week	
Entire unit	Sniper training; hand grenade throwing in wooded areas.	Surprise assault in wooded areas.
Scouts	Hasty firing with pistol and submachine gun.	Three-day field exercise at platoon level; applying all previously learned subjects.
Patrols	Pistol and submachine gun firing; firing from reconnaissance vehicles.	Night orientation.
	Fifth week	
Entire unit.		Reconnaissance patrol; holds used in hand-to-hand fighting; close antitank combat.
Scouts	Sniper training; light machine gun firing from hip at moving targets.	Combat patrols.
75-mm. gun crews.		Cover and concealment; observation exercises from vehicles; defense against enemy close combat antitank teams.
Patrols.		Disengagement from enemy with rear guard action; defense against enemy antitank teams.
	Sixth week	
Scouts	Pistol and submachine gun firing; hasty firing and firing from hip with rifle or carbine; firing light machine gun while moving; bayonet training.	House-to-house fighting; combat within a building; raids.
Patrols	Machine gun practice	Reconnaissance in forests and inhabited localities.
	Seventh week	
Entire unit	Sniper training; firing at direction of sound, sources of light, muzzle flashes, and poorly illuminated targets.	Close antitank combat.
Scouts	Advanced defensive firing practice by scout car crews.	
75-mm. gun crews.	Fire fight against enemy surprise attack; advanced combat firing practice at moving targets.	
	Eighth week	
Entire unit	Continuous 7-day combat exercise (including night bivouac) of a combined armored reconnaissance company. One third of the combat exercise must take place during the hours of darkness. The following problems should be included: counterthrusts against an enemy penetration involving hand-to-hand fighting; mounted and dismounted reconnaissance; limited objective attack at dusk; forest fighting; house-to-house combat; combat patrols; demolitions; attack by an armored reconnaissance platoon with 75-mm. gun and 80-mm. mortar support, involving penetration into enemy position and close combat with live ammunition.	
	Ninth week	
Scouts.		Feint attack by dismounted armored reconnaissance platoon, using various tricks against a powerful enemy; penetration into enemy position and close combat.
Patrols.		Rear guard action by reinforced armored reconnaissance patrols.
	Tenth week	
Scouts.		Forest fighting and combat in inhabited localities by scout car section; surprise raid on river crossing sites; use of light signals and other devices.
Patrols.		Rear guard action by armored reconnaissance patrols; use of light signals, etc.

APPENDIX V

EIGHT WEEK NIGHT TRAINING SCHEDULE FOR ORGANIC ENGINEER ELEMENTS WITHIN THE TANK OR SELF-PROPELLED ANTITANK GUN BATTALION

First week

See Appendices I and II.

Second week

1. Intensified weapons training; target practice with varying degrees of visibility; aiming and firing in combat.
2. Reconnaissance patrol training involving ranger tactics against a simulated enemy; using prominent land marks for orientation; visual exercises, estimating distances; cover and concealment.
3. Demolition training, including preparation and placing of charges; use of different types of fuzes; connecting wires; and preparing various types of charges.

Third week

1. Close combat course.
2. Building and camouflaging simple fortifications and setting up barbed wire obstacles.
3. Laying and clearing open and concealed single mines.
4. Moving into an assembly area and securing same; use of hasty obstacles.
5. Reconnoitering roads, detours, resting and assembly areas; methods of marking such areas and controlling traffic.

Fourth week

1. Reconnoitering river-crossing sites and using pneumatic floats to move a combat patrol across a river.
2. Patrolling in forests and across terrain offering poor visibility; methods of breaching mine fields; reporting.
3. Road repair work on the battlefield; crossing swampy terrain, ground pitted with shell craters, sandy stretches, and antitank ditches.
4. Close antitank combat.

Fifth week

1. Disengagement, including preparation of demolitions and mine obstacles.
2. Repelling surprise raids; close combat training.
3. Outpost duties, including security patrolling, sentry duty, and relief.
4. Reconnoitering bridge sites and construction of single-span stringer bridges; construction of approach and exit facilities.
5. Knots and ties.

Sixth week

1. Squad in attack, subsequently switching to the defense, including crossing and building of obstacles and light field fortifications.
2. Practice alerts; operations against enemy airborne troops, including reconnaissance of blocking positions.
3. Combat in wooded areas; combat patrols utilizing engineer equipment; reconnaissance, construction, and crossing of fords.

Seventh week

1. Exercise with vehicles, including loading, motor march, fire fight from and near vehicles.
2. Guarding a defile and repelling an attack in hand-to-hand fighting, including close antitank combat.
3. Combat in inhabitated localities, with emphasis on engineer combat patrol tactics, removal and construction of obstacles.
4. Establishment and defense of strong points.

Eighth week

1. Attack on barriers, including surprise raid and capture of a bridge, and removal of explosive charges.
2. Reconnaissance of bridges and testing their load capacity; reinforcing and widening narrow bridges, repairing damaged bridges.
3. Continuous night-day-night exercise with elements of a tank or antitank gun battalion, including employment of the engineer platoon for reconnaissance and engineer missions.

APPENDIX VI

EIGHT WEEK TRAINING SCHEDULE FOR ORGANIC ENGINEER ELEMENTS WITHIN THE ARMORED INFANTRY REGIMENT

Note. Supplement night training schedule for armored infantry troops (App. II) with specialized training program outlined in this schedule.

First week

See Appendix II.

Second week

First exercise: Preparation of cord fuzes; preparing charges for demolitions and for use by combat patrols; knots and ties.
Second exercise: Using pneumatic floats to move combat patrols across a river without making any noise.

Third week

First exercise: Types of charges; preparing charges and fuzes.
Second exercise: Reconnoitering and marking roads; traffic control; testing tonnage capacity of a bridge.

Fourth week

First exercise: Handling antitank and antipersonnel mines; laying and clearing open and concealed mines; constructing barbed-wire obstacles; repairing damaged wire obstacles and closing gaps without delay.
Second exercise: Detection and removal of mines; breaching barbed-wire obstacles.
Third exercise: Planting hasty mine obstacles; constructing road blocks without charges or mines.

Fifth week

First exercise: Constructing platforms for tree snipers and observers.
Second exercise: Detecting and removing demolition charges attached to bridges.
Third exercise: Approach march; crossing difficult terrain (shell craters, swampy terrain, sandy stretches, antitank ditches); preparing organic vehicles to cross same. Retrograde movement; planting mine barriers and preparing mine records.

Sixth week

First exercise: Combat patrol action during which engineer combat equipment is employed; construction of road blocks and barricades; preparing and placing hidden small charges.
Second exercise: Hasty mine laying and clearing exercises.
Third exercise: Reconnoitering crossing and bridge sites; reconnoitering, constructing, and crossing fords; building, equipping, and operating a 4-ton pneumatic-float ferry; construction of footbridges.

Seventh week

First exercise: Attaching demolition charges to small bridges and other objects.
Second exercise: Clearing lanes through mine fields.
Third exercise: Breaching different types of obstacles.

Eighth week

Construction of short emergency bridges; repairing damaged parts of a bridge; reinforcing bridges; building approaches and exits; construction of an 8.5-ton duckboard treadway bridge.

APPENDIX VII

EIGHT WEEK NIGHT TRAINING SCHEDULE FOR THE ENGINEER PLATOON OF AN ARMORED RECONNAISSANCE BATTALION

Note. Supplement night training schedule for close combat by night (App. IV) with specialized training program as outlined in this schedule.

First week

See Appendix II.

Second week

1. Strengthening defensive positions by building field fortifications and constructing barbed-wire obstacles.
2. Knots and ties.

Third week

1. Handling different types of detonators; preparing and placing charges, fuzes, and connecting wires.
2. Combat patrol action during which engineer equipment is employed.
3. Preparation and removal of obstacles with and without explosives.
4. Proper use of pneumatic floats and emergency river crossing equipment.

Fourth week

1. Laying and clearing open and concealed mines.
2. Clearing individual mines and lanes through mine fields.
3. Engineer reconnaissance of roads and detours, methods of marking same and guiding troops to their assembly areas.
4. Combat in inhabited localities utilizing engineer equipment; construction and removal of barriers; planting booby traps.

Fifth week

1. Reconnoitering river crossing sites; ferrying motorcycles and heavy weapons on pneumatic floats; building and operating 4-ton pneumatic float ferries; construction of landing stages.
2. Road repair work; crossing of swampy and sandy stretches, terrain pitted with shell craters, and antitank ditches.
3. Constructing platforms for tree snipers and observers.
4. Forest fighting, including preparation and removal of abatis; planting hidden small charges.

Sixth week

1. Construction and camouflage of defensive positions and weapons emplacements for an armored reconnaissance battalion.
2. Attack on and defense of blocking positions.
3. Testing load capacity of bridges.
4. Reconnoitering bridge sites; construction of short bridges; construction of approach and exit facilities; marking roads and controlling traffic near bridge sites.

Seventh week

1. Demolition of small structures with and without explosive charges.
2. Reinforcing and widening narrow bridges; repairing damaged bridges.
3. Reconnoitering, building, and crossing fords.
4. Construction of footbridges and hasty bridges under combat conditions.

Eighth week

Participation in a 7-day combat exercise of a combined armored reconnaissance company with practical application of training subject matter.

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