

CHAPTER IV

THE LIGHT INFANTRY

A summary of those principles which could solve the problems of reliance on technology by our Army results in the following:

Our Army must adapt itself to the terrain by developing an infantry which, by organization, weaponry, equipment and combat doctrine, is able to cost-effectively carry out combat in covered terrain.

Our Army must be adapted to the probable employment of many of its units by developing an infantry which cost-effectively conducts defense in certain areas, relieves our mechanized formations from these areas and thereby preserves them from rapid attrition.

Our Army must reduce the logistic requirements by foregoing those weapons which can no longer justify their requirements in certain terrain areas.

And our Army must develop an infantry which is able to avoid enemy fire not predominantly by movement and armor but by dispersion.

It remains to be described how such a unit could look like and according to what principles it would fight.

COMBAT DOCTRINE: DEFENSE

A modern infantry must avoid enemy weapons effect even without armor protection and even without mechanization. Trenches provide only a protection which is limited and which is best when more time had been available for entrenching than can be expected in modern war. Accordingly, the infantry must mainly be protected by dispersion. The measure of dispersion must be adapted to the great effect of modern weapons up to and including nuclear weapons. A defense area is similar to a partisan area which is not only extensive but also has a high density.

This produces a completely new type of field force. Since time immemorial, the combat force may perhaps march separately. For combat, however, all available units must be concentrated in the same area. They strike in common, unified not only in purpose but also in space. This principle is as old as warfare. Units which remain separate even in combat are new. Their combat doctrine contradicts that of all known regular service branches. The combat principles of partisans represent their only counterpart. Here we have an important catchword.

The helplessness of modern armies with respect to rather large partisan units belongs to the essential phenomena of warfare of our time.

These modern armies have an immense technical and material superiority. Their active units are trained carefully and at great length. They dispose of a well-coordinated command apparatus and are led by experienced career soldiers. Despite all this, they accept that a very large superiority is required for neutralizing partisans. This phenomenon is so amazing that within a short while many books and articles about guerilla warfare have been written.

It is difficult to comprehend why not one of the career military officers has seen both the possibilities and the reproach which are manifested in the helplessness of modern armies with respect to partisan units. Certainly, the successes of partisans were often, too often, connected with methods which were hardly exemplary to say the least. Certainly, the partisans also have often sought cover amongst the civilian population and thereby brought on severe consequences for their own people. At times, these consequences have even been consciously provoked. However, these comments, as justified as they are, fail to explain sufficiently the successes, the changes and the limitations of guerilla warfare. Therefore, it remains astonishing that there is hardly any attempt to utilize the apparently successful doctrines of guerilla warfare, to strip off their questionable methods and, thus changed, use them for our active armies. We should not simply resign ourselves to the fact that modern armies require a very large superiority when engaging guerillas. We should at least raise the question why we keep our hands in pockets instead of developing similar combat capability at a similar minimal cost for battle under certain conditions and in certain terrain areas.

Thereby, the terrain is indicated in which a light infantry will carry out the battle. An important trump card of the defender consists in the ability to select the terrain (105) - restricted, of course, by those requirements which result from the strategy of forward defense and from the necessity of dominating the area continuously with firepower. The significance of this trump is increased by the fact that the terrain selected by a light infantry is the most unfavorable one for a mechanized attacker. The trump cards of mechanized attackers are no longer valid in infantry terrain - builtup areas, industrial zones, forests, marshes and highlands.

The intention of beginning and fighting the battle in great dispersion also improves protection from enemy nuclear weapons. If the enemy wished to engage our troops by nuclears, he would have to produce giant devastated zones. In many cases, he would thereby block his own advance.

Whoever fights widely dispersed must be wary of wishing to hold a small patch of forest, a hill or a village by all means. He would thereby reject the high trump of a cross-country mobility which in builtup areas and forests is superior to any mechanized opponent. The enemy would surround him and then hit him with all his striking power. The surrounded unit would often be lost, all the more since neighboring, likewise non-mechanized units, can hardly help him by counterattacks.

how to conduct?

Infantry tactics of the Second World War were characterized by the stubborn static defense of small terrain sectors, whereas a modern infantry must try to dominate extensive areas, which ultimately corresponds to the basic principles of our command regulations. This forbids the former, frequently day-long construction of company and battalion perimeters. Instead, parties deployed well forward will block the enemy advance, will allow him to approach and will engage him. Whenever the enemy brings up reserves, attacks seriously, becomes superior and threatens to encircle our forces, our parties deployed in forward positions must not be reinforced, as old tactics would require. We would only thereby produce a linear deployment. This line would become useless whenever the enemy penetrated it with concentrated forces at one point only. Instead, the forward deployed parties must evade their superior enemy by sidestepping and allowing him to penetrate more deeply. In the depth of the defense area, the enemy's advance will again be blocked by friendly forces, while the parties which had sidestepped threaten the flanks of the attacker. They interrupt communications and supply channels. They attack HQs, artillery positions and supply installations. Thus, they will compel the enemy to secure all of his combat support and service support installations by combat forces. This is bound to weaken his spearheads the more and the deeper he penetrates.

The attacker can counter this tactic by failing to rapidly thrust into deep defense areas. He must then make the decision for a slow, methodical liberation of the terrain. He will then have to fight from forest to forest and builtup area to builtup area against an enemy who is at least equal if not even superior in mobility and firepower in this terrain and who has been optimized for combat in these areas and, in addition, never exposes himself to a decisive, pitched battle.

If the attacker makes the decision for a methodical liberation of terrain of this type, the defender has already achieved a considerable tactical success. The rapid advance tempo of the attacker has been broken. In addition, in covered terrain which is defended in considerable strength, an attacking unit of the Warsaw Pact must also fight on foot. The speed of attack is accordingly reduced once again. The task of the defending infantry will now be to perfectly utilize the favorable terrain, their own knowledge of the locality and their high cross-country mobility. It will allow the dismounted enemy to attack and will, however, fall back from a superior enemy. It will quickly concentrate forces in order to attack and destroy weaker enemy units mainly by firepower. It will voluntarily or owing to pressure - give up rather large parts of the defense area in order to infiltrate at another point and again capture areas which had been given up. In addition, we should study whether helicopters can relieve encircled units and whether the infantry can retake with their help terrain which has been mopped up or already surrendered to the enemy.

how?

Extensive static fronts and positions held for days therefore, will not be found in battles fought by light infantry. It will not defeat the enemy by forcing him to attack static positions for many hours or even days. It cannot break up an enemy attack in an open, pitched battle.

It can, however, little by little wear the enemy down in a large area by a high number of rather small combats and gradually exhaust him by forcing him to secure every important object in large areas.

The protection from nuclear weapons is especially difficult in any combat carried out in forests. Dispersion offers a rather extensive protection. The attacker would have his own way blocked by large-scale destructions. The protection is, nevertheless, not absolute. It is above all ineffective when the enemy advances in open areas and can, without compunction, produce devastated zones on his flanks. However, many of the troops which are not directly in operations are deployed already at present at the edges of forests and avoid its interior. There is no reason why the light infantry should act otherwise. The dispersion of forward operating units leaves no more unobserved spaces through which the enemy could advance unnoticed. It thereby protects the units located further to the rear from surprise. That allows these units to withdraw from the interior of forests and builtup areas until the start of combat. They keep ready at the outer limits, in gulleys, cellars, ravines and gorges which offer quite good protection against conventional and nuclear weapons. The units must indeed deploy into the interior of forests for the battle. Here, protection is, however, offered by the difficulty in computing the effect of nuclear strikes in forests as well as by the nearness of the enemy. The enemy will shrink from destroying his own troops together with those of the defender.

It must be expected that, with heavy concentration of attacking forces, rather large enemy units will penetrate the defense areas and gain open terrain. But a mechanized brigade also will find it difficult even in open terrain to repel a hard-hitting main attack without bringing up reserves. However, the battle is in no way ended for a light infantry with a breakthrough of enemy units through the defense area. The attacker has only won when he has liberated supply routes and spaces for combat support troops, headquarters and supply installations. The combat for these areas and channels now breaks out in full intensity. It must be carried out by enemy combat forces which must be withdrawn or withheld from the spearheads which have broken through.

Combat against enemy forces which have penetrated is the task of reserves -- just as at present. It is obvious that the reserves must be armored and mechanized just as in WW II. It must be possible to commit them without time-consuming preparations, and they must be capable of a counterattack. It again becomes clear that a light infantry cannot seek to replace mechanized forces. It is not a competitor but a complement required by the terrain and a relief of mechanized units. A light infantry also cannot prevent the enemy from bypassing builtup areas, from concentrating his mechanized forces and attempting to drive a powerful armored wedge through open terrain until far into our own hinterland. The defense of attacks carried out in open terrain will be predominantly the mission of mechanized forces. The light infantry can support these forces at best where the attacker must pass through builtup terrain. The light infantry nevertheless can contribute indirectly to the decision. It enables us to withdraw our mechanized units from covered

terrain and to concentrate them in areas where the decisive battle against the enemy armored spearheads is being fought. In addition, the light infantry prevents the attacker from outflanking our mechanized forces through forests and builtup areas or from shifting his main attack into these covered areas, at the latest when he finds his advance contained in the open terrain.

COMBAT DOCTRINE: ATTACK

A light infantry does not clearly differentiate between attack and defense, just as do partisans or mechanized forces. The combat doctrine of a light infantry corresponds here again completely to all modern tactical doctrines which all foresee in every combat type elements of other combat types. Where stable fronts are lacking, where fighting is to be carried out with the highest mobility and great dispersion, the difference between attack and defense cannot clearly be marked in every case. The difference in the purpose of the combat types remains: Terrain is to be protected from the enemy or to be taken with destruction of the enemy. The execution of both goals is, nevertheless, similar in many a respect.

What offensive power may be awarded at all to a light, accordingly unarmored, infantry? What offensive power does modern weapons technology leave to the unarmored soldier? We must take into consideration that man today is just as vulnerable as he was 100,000 years ago. A hole in the head dropped the Neanderthal man to his knees just like it does today. Even the weapons effect remained almost constant for 100,000 years. Only during the last few centuries, it has grown quite slowly, then more swiftly and, in this century, it has risen precipitously from decade to decade. Between the unaltered vulnerability of the soldier and the rapidly increasing effect of weapons directed against him, thus opened, a breach that becomes ever wider. This had to lead to the superiority of firepower over the unarmored attacker which has long been known. For this reason, infantry cannot increase its offensive power by massing forces. In the attack against a machine gun, four infantrymen have just as much striking power as one. Only the losses are higher. The offensive power of unarmored infantry is today only the result of the fire of supporting weapons. Consequently, the offensive power can only be increased by an increase in supporting fire. The First and Second World Wars clearly showed, however, that even the strongest fire power concentrations could not guarantee the success of an assault carried out by foot infantry against prepared positions. The heaviest of losses are almost always unavoidable. A light infantry is consequently unable to attack a prepared defense.

The superiority of firepower over unarmored attackers favors the defender, however, only as long as the latter can maintain a stable continuous front. This is precisely what is difficult in modern combat and out of the question in nuclear combat. The wide dispersion of modern battle thus offers new possibilities to an unarmored attacker. He can infiltrate the defense of the enemy and block his lines of communication. He thereby forces the defender to liberate his channels of communications, i.e., to attack or to pull back the forces blocked forward, i.e., all

again to attack. The infiltrated unit shifts the role of attacker to the defender. They can utilize the superiority of firepower over unarmored movement in a situation in which the intermingling of friend and foe prevents the enemy from using nuclear weapons and makes artillery operations difficult (106).

Accordingly, the supreme principle in the attack of a light infantry must be to force the defending enemy to attack infiltrated forces and themselves, however, only attack when surprise or force ratio ensure a decisive superiority. In this case, the fact that in modern combat even the defender can rarely assume a stable and continuous front must be used. The gaps ensuing in this way can be used by the attacking infantry for infiltration. Nighttime and weather with poor visibility are preferred. A frontal attack against defense positions must not take place. The infiltrated units block the communications routes of the enemy in the depth of the enemy defense whereas other units seek to thrust through to the artillery, to the nuclear delivery systems, to the headquarters and to the supply installations.

Att 2
If the attacker has reached this phase, he has placed important trumps in his hand. He has gained the initiative and has forced the defending enemy into the role of attacker. The enemy must now decide whether he wishes to break out with the encircled forces or whether he will liberate the LOCs. Accordingly, he must attack under any circumstances. He must attack in a terrain in which an attack is to be carried out predominantly by dismounted infantry whose striking power is slight and whose every attack success costs much blood. The outcome of the battle then depends on the question whether the enemy is strong enough and can release sufficient dismounted infantry to throw against the encircling forces in the covered terrain which is poorly suited for employment of high-technology forces. Before he starts the attack, he must of course detach considerable forces for securing still-existing lines of communication, batteries of his nuclear or nonnuclear artillery, headquarters and supply installations.

This demarcates the capabilities and limits of attack for a light infantry. It is not able to throw an enemy out of a prepared, continuous position. It is not able to surprise and to rapidly overpower a deep-echeloned defense. It will accordingly never be able to blaze a path through difficult terrain for their own armored units before the enemy has brought up reserves. It is, however, able to attack even through difficult terrain and to simultaneously destroy considerable enemy forces. This would be through terrain which poses great difficulties for an attack by armored forces and in which otherwise the enemy would remain and be able to mount ever new attacks against the communications of our own mechanized forces.

COMBAT DOCTRINE: DELAYING ACTION

The purpose of a delaying action is to gain time by trading space. The continuous and deliberate surrender of space provides an element of mobility which is most unfavorable for the employment of unarmored units. Moreover, in the intended operational area, lines of sight are usually short. This increases the danger that the force will have to engage the enemy at short distances and, therefore, will have difficulty to disengage. Since armor protection is wanting, movement under enemy fire is difficult. Even in covered terrain, a mechanized enemy will normally be able to pursue withdrawing infantry rather quickly. And, finally, the rapid change of employment areas makes it impossible to prepare positions from which the units can surprise the advancing enemy by fire and in which they find protection from enemy firepower.

Accordingly, light infantry is poorly suited for employment in delaying action. If it nevertheless has to be used, it will carry it out as a succession of defense battles between which it falls back, breaking contact, and moves into the next defense position. Barriers play an essential role in preventing the enemy from following too quickly, blocking or overrunning friendly units. Nevertheless, employment of light infantry for delaying action must remain a rare exception.

COMBAT DOCTRINE: SPECIAL APPLICATIONS

C.F. MAHAR
* Light infantry combat knows no stable fronts. The depth into which it has an effect on the enemy accordingly has no specified limits. If the infantry infiltrates into the enemy defense, most units will be assigned short objectives. Other units could infiltrate deeper. This capability will often compel the enemy to provide security by combat forces for at least the most important units and installations, more particularly to headquarters and the nuclear artillery. This requires forces which the enemy will miss up front in combat.

Perhaps it will be possible to deploy units with helicopters in the depth of the enemy area. Ordinarily they are too weak for the larger combat missions. The more independently they are used, the more their mission must change from combat to reconnaissance. Missions and execution then more and more approximate those of long-range reconnaissance teams. In this way, they extend friendly ground reconnaissance far into the enemy depth. Thus, they can help to narrow down the much-discussed reconnaissance gap.

The same considerations are valid for defense. A defending light infantry may find itself forced to evacuate a large wooded area. It can, nevertheless, decide to leave behind individual detachments. The weaker these detachments and the farther they are from other of their own units, the more the mission and meaning for their employment changes from combat and force containment to reconnaissance.

Finally, we should not overlook the fact that a light infantry provides the Federal Republic with at least a limited defense capability in an important special area which, of course, is ignored (sometimes deliberately.) According to widespread conviction, the neutralization of a few telecommunications centers, a few nerve centers of the Federal Railroads and a few electricity or converter stations is sufficient to produce severe disturbances in the life of the Federal Republic. Seldom in history has a country offered to a potential aggressor such gigantic weak points almost unprotected. Nowhere else could an enemy accomplish so much at so little cost. It is naive to believe that our weak points are unknown to the enemy or that he would mercifully ignore them. If a few dozen commando detachments can severely damage the governmental and economic life of the Federal Republic and thereby its defense capability, then the enemy will naturally seek to utilize this unique opportunity. He has long since made the preparations (107).

The Federal Republic is poorly prepared for such an emergency. The Federal Border Guard will provide no more assistance after its re-organization into a police force. Our government will accordingly call for troops -- if it still can do so and if it can make its call for help heard. Who is to react? The units of the Territorial Defense must first be mobilized and then they will lack proper training and cohesion for considerable time. The active units of the Territorial Defense have been mechanized -- and a M48 tank on a night patrol for commandos will at best give the enemy cause for amusement. The actively conducted battle against guerillas and commandos, action for their encirclement and destruction, could therefore be added to the tasks of a light infantry. By training, organization, and weaponry it is better suited for this most difficult task than the active mechanized forces of our field army or the reservists of the Territorial Defense.

ARMAMENT

The armament of a field force results from the intended employment, i.e., the mission as well as from combat doctrine. An outstanding role is played by the terrain in which a force is to be used.

Mission, combat doctrine, terrain and the effect of enemy fire force a light infantry to wide dispersion, to combat in small units and subunits and to utilization of night and cluttered terrain. Independence of the terrain, silence and invisibility are among their trump cards. A light infantry therefore, must not be burdened with weapons which they might use occasionally but could not move in difficult terrain, could not operate in a terrain with short lines of sight and could not supply in dispersed combat.

Further, the light infantry exists owing to the need for a field force which is independent from a complicated resupply apparatus and whose rear services do not retain an unbearably high proportion of our best soldiers. The weapons should, for this reason, be simple. This simplicity should not be at the expense of the combat force but for their

benefit. This simplicity should make it possible that the combat force receives more personnel and that the organization of powerful combat units does not fail owing to personnel shortages. Simplicity should also ensure supply and service support in modern combat.

It will be most difficult to resist the attempt to "help" the light infantry by all types of heavy weapons which they might possibly require occasionally. Certainly, a platoon of tank destroyers would be useful in some situations; it would be advantageous if the mortars were mounted on an APC and had a large caliber: SP artillery is always nicer than field artillery; the battalion commander probably would not protest if he were given a platoon of APC-mounted 20-mm guns and soon he would ask for a MARDER MICV-platoon. Thus, within a short time, the present organization of our mechanized brigades would reappear, which had led us tactically, logistically and financially into a blind alley. Very soon there would again be an organization which resembles that of our unfortunate motorized infantry ("Jaeger") brigades. The assistance provided would not be real. We would again have infantry units which don't have enough infantrymen and which deploy their greatest firepower in open terrain. We would again have combat units which are tied to an extensive supply train, which can neither infiltrate the enemy nor exfiltrate from encirclement, for which every stream and every steep embankment becomes an obstacle, which continuously require engineer support and which have no operational mobility since in the case of air transport, they must leave many heavy weapons behind.

In all considerations of the armament of light infantry, one must stick to the fundamental tactical concept of combat in great dispersion, - in partisan-type battles. It must always remain in our minds that infantry can survive on the modern battlefield only when mechanized or when in the greatest dispersion. A "compromise" only returns to the old APC and motorized battalions which can neither evade the enemy weapons effect by mechanized mobility nor by wide dispersion. They offered a marvelous target for any enemy weapon in their battalion size perimeters.

The armament of the light infantry will accordingly take into consideration that only two types of combat are viable on the Central European battlefield:

Either mechanized and armored, meaning the interaction of main battle tanks and MICV with all armored support weapons which can be cost-effective only in open terrain and financially possible only for one part of the Army,

Or dismounted for dispersed raid-type operations with the goal of dominating areas but not defending static positions.

In addition, the light infantry should be armed so that it is air transportable without any restrictions. This has set the limits. The principle must be as light as possible and air-transportable.

A hybrid solution, a mixture of light and heavy weapons, must be avoided at least at the lower echelons. If possible in the brigade, but certainly within a battalion, we should use only those weapons which a soldier can carry and a helicopter can transport. This, of course, does not exclude that in certain situations heavy weapons can be attached. They should, however, normally be organized at higher echelons.

Flat trajectory fire and antitank defense accordingly will be executed by Panzerfausts and ATGW. Small caliber mortars are used for fire support, at least as long as heavier mortars can only be moved by vehicles. In addition, units must be trained on weapons used by the enemy. This makes it possible to immediately use booty, overcome resupply problems and to reduce supply requirements.

All heavy weapons should be concentrated at higher echelons, if possible under the division. Only in this way can we assure that the units are uniform and can command, control and fight according to uniform doctrine and can be committed in the same terrain.

EQUIPMENT

A light infantry should fight on foot and be able to move on foot. The question is thereby raised as to how the soldier in battle procures those weapons and articles of equipment which he cannot do without.

At the turn of the century, the Kaiser's army tested by troop trial how much pack a soldier could carry. They found out that in cool weather a healthy and strong individual could carry 22 kg for more than 25 km without difficulty. Thirty-one kg reduced the performance of the soldier even in cool weather. Even long training did not noticeably increase performance. The limit of human capability had apparently been reached (108). In evaluating these results, we should not forget that our predominantly rural population at the turn of the century was probably more rugged than today's city youth. Even the findings of the Wehrmacht are hardly applicable today. The recruits of the Wehrmacht had passed through intensive physical training throughout their years in the Hitlerjugend and the Reich Labour Service.

The soldier of the Bundeswehr today goes to war with a load of more than 30 kg (including clothing and personal equipment), trimmed out like a "Christmas tree" with folding spade, NBC protective mask, clasp knife, belt-carrying harness and assault pack. And he is to fight mobile with this! It is nonessential whether it will be possible to reduce the load here and there by a few grams. It does represent, in any case, the uppermost limit of what can be carried. Unfortunately, however, the 30 kg burden is only valid for riflemen equipped with weapon and ammunition. A unit which moves out like this takes along no hand grenades, no anti-tank or infantry mines, no demolition ammunition, no machine guns, no machine gun ammunition, no Panzerfausts, no signal pistols, no medical material and not even a radio, not to mention mortars and antitank guided

missiles. In short, although every soldier carries more than 30 kg, such a unit would not be combat ready.

This describes a dilemma. Even the light dismounted infantry requires weapons and explosives which it is, nevertheless, not able to carry along. Apparently, a light infantry then needs its own transportation resources. Even for relocation marches of only a few kilometers, it requires a few vehicles at least for its heavy weapons, accordingly for Panzerfausts, mortars and antitank guided missiles as well as for their ammunition. Inside of its operation area, it requires vehicles for the wounded, for ammunition and probably also for rations.

Troop-owned vehicles such as UNIMOGs and perhaps even KRAKAs would immediately affect organization and operating doctrine of the field force. First of all, organic maintenance services and supply services would be required including the corresponding management effort. These would restrict the mobility of the field force and retain soldiers in the rear services. The actual reason for being of a light field force independent of highways, roads and safe supply services would be endangered.

Even more detrimental would be the influence of organic vehicles on the operating principles. The units require the vehicles not only in the very rear of the defense area, but forward with their fighting units. In case of close engagement, they soon become a heavy burden. If the force wishes to infiltrate into the enemy defense area, it must fight to clear roads for their vehicles. If a unit has to exfiltrate from encirclement, it cannot make use of difficult terrain but is again forced to use roads. Every stream, every gorge and every steep slope becomes an obstacle. Soon the units will request engineer support since they can no longer cross bodies of waters simply by fording, swimming or use of locally procured boats. Air transport becomes a problem and will at least be very costly.

The light infantry then requires vehicles which it can deal with like expendable items. It uses and leaves them in the previous location when they become a burden. The force procures new vehicles at the new operating area. Available for this purpose are forest vehicles in possession of the States as well as farmer's tractors. Their disadvantages are clear. They are loud, as the tracked vehicles of our armored resupply groups. The advantages are ever so much greater. The vehicles are easy to use, extremely terrain worthy and fuel, spare parts and workshops are to be found in every large village. Then, when the vehicles are needed, they would be standing idle anyhow since work in the forests would quickly come to a halt in a combat area. The vehicles could accordingly be used without any noticeable negative reaction on the civilian economy. There are overall several hundred thousand of such vehicles in the Federal Republic. (109)

The solution appears to be a radical one only at first glance. From the legal standpoint, it is only a normal utilization of civil resources. The Wehrmacht reequipped many infantry units with bicycles during the campaign in France 1940, and as early as the first Russian winter, almost all divisions of the German Army set up large supply trains using horses.

Plans at the present time already call for tens of thousands of trucks as well as many thousands or hundreds of construction machines, special vehicles and ships to be called up during mobilization. There is no reason why vehicles, which normally are not even in possession of private owners anyhow, should remain idle in war.

Larger units of a light infantry - presumably the brigades - cannot be satisfied with requisitioned civilian vehicles. The combat battalions go into battle on foot. Thus they can take along only a fraction of their ammunition and of their basic load. The brigades will have to transport the largest part. Further, they will require transportation resources for the resupply from corps supply points to the front, although the supply requirements have been reduced drastically. Finally, transportation resources are needed to rapidly redeploy forces should this be required. For these reasons, the brigade will have to have a transportation company equipped with its own trucks.

However, even a transport column will not be able to cover all requirements of the field force. The field force will often fight not only closely engaged but mixed in with the enemy. In other situations, enemy armored spearheads may have penetrated far into our own territory. Evacuation of casualties will then become a priority problem. The casualties are a burden to the field force and reduce its mobility. And insufficient care for the casualties is ethically not justified. In addition, it would undermine the morale of the field force and destroy faith in the command. Finally, the resupply of ammunition would also sometimes find supply channels blocked. It is evident that the quite extensive Army aviation units of higher command echelons should be used here, especially since they may not be fully burdened with first priority tasks.

Helicopter support by higher echelons could, in addition, offer further tactical advantages. On the battlefield, a light infantry would be at least as mobile as the mechanized enemy who has been forced to fight in woods and builtup areas on foot. With an appropriate organization, in these areas light infantry would even be more mobile than their mechanized opponent. On the other hand, the mechanized enemy is clearly much more mobile when redeploying over rather large distances. The mechanized enemy, therefore, can build up his point of main effort (Schwerpunkt) much more quickly than a light infantry and, if required, he can also break it up and shift it to another area. Helicopters would rob the enemy of this advantage. Of course, MICV-infantry units or motorized rifle units are already now being transported by helicopters in the East and West. However, this is only eyewash. An air mobility of units is not demonstrated in this way. What arrives at the new operating area is only a torso. It is fighting according to doctrines which require heavy weapons and is accustomed to their support. It has neither the required personnel strength, nor an organization and weaponry optimized for battle carried out without MICV and exclusively dismounted.

Rear services are wanting anyway. The operational value of these units is accordingly restricted. Only extreme crisis situations can justify their air transport.

Our Army, indeed, has three air mobile brigades at present. These are the only units which can be transported by helicopters without serious loss of combat capability. Their antitank capability, however, is based on long-range ATGW, many of which cannot be employed at short ranges. A considerable part of their potential would accordingly be wasted if they were committed in covered terrain. These are units for airmobile operations in rather open terrain. Moreover, for operations in covered terrain they don't even have the necessary personnel strength.

On the other hand, light infantry has been optimized for covered terrain and is organized, armed, and equipped adequate to this task. Its combat effectiveness is not decreased by air transport. Its cooperation with helicopters returns the important tactical advantage of higher mobility into our own hands. The light infantry can be used against enemy forces which have broken through and at points where they have to pass through covered terrain unfavorable for armor. It can shift a main point of attack or defense more quickly than a mechanized enemy. The helicopter can withdraw surrounded units from enemy territory and, contrarilywise, also land forces in enemy-occupied territory.

Thus, the enemy is threatened far and deep into his area of operations. He will be compelled to provide security forces for his HQs, nuclear artillery, his artillery, and his supply installations without our own forces being actually committed at all. The enemy also can produce these security forces only by resorting to his combat troops. Thus helicopter units in cooperation with light infantry should be able to tie down enemy combat forces like a "fleet in being".

The question of telecommunications at the lowest echelon - from platoons to squads - will be difficult to solve. The SEM 35 is, like every other radio set, only a very incomplete solution. A soldier who is on his ears at night in builtup areas or forest combat with a headset for combat. It is, however, more probable that he often enough does not have the headset on his ears but will defend his hide. The platoon commander then calls in vain and loses liaison with his squads. Even in the most favorable case, the platoon leader must first give his order to the platoon radioman. The latter passes it onto the squad radioman. The latter then forwards it to the squad leader who forwards it to his squad. A very complicated procedure.

The Chinese in the Korean War, just as the Viet Cong later on, worked quite often and apparently quite successfully with very primitive but very reliable resources. They used signal horns, whistles and flares for liaison between platoons and squads and occasionally even at a higher echelon. The meaning of sound signals and colors was specified beforehand.

Perhaps, a solution is offered here. It is inexpensive, simple and not susceptible to technical breakdown and jamming, relieves the foot messenger and produces as its most important advantage a direct communication again from platoon leader down to the last soldier of the platoon. Of course, a friendly ridicule of such trumpet-blowing and whistling infantry would be appropriate to our technical age. We should calmly go along with this mockery. And, then, we should ask how otherwise a platoon leader at night, in a forest, with the noise of battle, and right next to the enemy, can rapidly, reliably and above all simultaneously get the soldiers of his platoon to attack, to lie on the ground, dig in or fall back.

ORGANIZATION

The organization of a unit is also determined by weapon allocation, equipment and terrain of the probable operating area. The most important single factors are the planned mission and, thereby, the combat doctrine.

The light infantry is to operate in extreme dispersion. It must be able to maintain this dispersion even in battle. Accordingly, even small units must be able to fight independently. They must be self-sufficient with everything they require in battle. It is of little use to them if their battalions and brigades have everything available, since battalion-size or even brigade-size battles will be rare. This solves the questions as to who should have the heavy infantry weapons, i.e., ATGW mortars and heavy AT rocket launchers (Panzerfaust). A force which predominantly fights company-size and platoon-size battles must incorporate the heavy weapons into companies. There, they should be organized in a heavy weapon platoon.

How large should we make the units and subunits? Many personnel are required for infantry combat for battles in wooded or builtup terrain. We could meet this requirement by a large number of small battalions and companies. This, however, would again tie down numerous soldiers in HQ and communication units. On the other hand, platoons and squads must not become too large, lest command and control of such forces becomes too difficult. We also must be careful that units have enough leaders and subunits don't become unwieldy.

THE SQUAD

A light infantry mainly must fight under cluttered conditions of terrain and remain able to be led even at night and in the heat of battle. Under battle conditions, it is not simple reliably to command a squad with a strength of 1/6 (one noncommissioned officer and six men). A squad with the strength of 1/9 is already extremely unwieldy. However, would it be strong enough for personnel-intensive combat in builtup areas and forests and could it absorb losses? How strong should we actually make an infantry squad?

A comparison with higher command echelons may help our considerations. As a rule no one would expect a commanding general to command eight or ten divisions. Although most certainly, decisions mature more slowly at his level, although he has extensive organizations which receive and evaluate the reports from subordinate units, which keep liaison with neighboring units and superior command authorities, and although he can make his decisions without the excitement of directly-threatening danger. Nevertheless, we believe for the most part that four or five divisions would be the most that a corps should simultaneously command in battle (110).

Despite all this, most armies calmly expect the squad leaders of their infantry to lead even in battle six, eight or even ten subordinate soldiers, although they have to do everything themselves. They must receive and evaluate reports and maintain liaison with neighboring units and superiors although on their level situations change rapidly and require instantaneous reaction. Further, the squad leader frequently must do all this in extreme personal danger and exposed to physical stress. Typically in our Bundeswehr, the young MICV-infantry NCO is to properly lead five dismounted soldiers even when fighting in woods or builtup areas. In addition, he must also operate, in a tactically sound manner, his MARDER (which is located hundreds of meters away) and has to direct employment of a multiplicity of weapons - the MARDER, its 20 mm gun, the ATGW, the Panzerfaust and the machine gun. And all of this, under the direct impact of battle, death and danger. Of course, when things go wrong, only a few more soldiers are killed. And who can prove that the cause of their death is a faulty organization?

We believe that on the battlefield itself, outside of calm HQs and without their support, no one can properly command more than three subordinate elements or soldiers. However, an infantry squad of 1/3 is an absurdity. Perhaps it would be useful to adopt the solution of the US Marine Corps, an acknowledged elite force. There, the squad has a strength of 1/12. Command and control is made possible by subdividing this large squad into three teams of four soldiers each. The squad has the personnel which is necessary, last but not least, to enable it to sustain losses. But it still can be led in battle since the squad leader himself has only three team leaders (soldiers towards the end of their service time or NCO candidates) directly under command. The teams are also the frequently mentioned primary group which independently can assume special tasks such as reconnaissance, combat security and surveillance of areas (111).

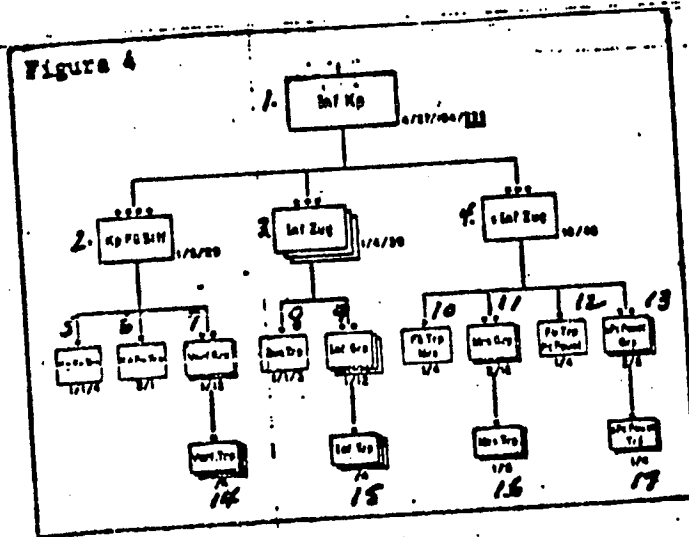
THE PLATOON

The platoons today have four squads in many of the service branches. For reasons already explained, however, most platoon leaders cannot reliably command more than three directly subordinate elements. The platoon accordingly has three infantry squads with a total of three noncommissioned officers and 36 soldiers. Additionally required is a platoon detachment of at least three soldiers (runners who are also radio-men) as well as a platoon detachment leader who is simultaneously the deputy platoon leader. The platoon then has a strength of 1/4/39.

THE COMPANY

The company could consist of three infantry platoons as well as a heavy weapon platoon. The latter must consist of at least two squads of light mortars (a total of four) and two squads of heavy panzerfausts, or better still antitank guided missiles. Consequently, it consists of two elements which have different tasks and operating areas. It is a training and not, however, a tactical unit. A platoon headquarters, therefore, is not required and hence probably no platoon leader. Its single task - point of contact of the company commander - can be taken over by the senior squad leader. On the other hand, a commander of anti-tank weapons and a commander of mortars as firing chief are required. Both need a small command detachment. The detachments and squads of the heavy platoon must be generously equipped with personnel to provide them with limited mobility in spite of their heavy equipment and to enable them to transport a minimum of ammunition over short distances without help of the company.

Since the company is to fight in wide dispersion, there are tasks for which they need a very strong company detachment. This echelon encompasses, in addition to the company sergeant and the weapons and equipment noncommissioned officer, a radio detachment for communications to the battalion and to the platoons. The company must additionally supply its platoons with rations and ammunition and be able to provide transportation for casualties and prisoners. The company commander requires, in confused situations and in covered terrain, a "body guard" as well as a foot messenger and above all a few soldiers to be able to intervene personally and quickly in crises. Perhaps, two infantry squads will be necessary for these tasks. Figure 4 shows the resulting organization of a light infantry company.



Key to Figure 4:

- | | |
|-----------------------|---------------------|
| 1. Inf. Co. | 2. Co. cd ech |
| 3. Inf. pn | 4. Heavy inf. pn |
| 5. Co cd det | 6. Co sgt det |
| 7. Combat supp sq | 8. Pn HQ |
| 9. Inf. sq | 10. Cd det mort |
| 11. Mort sq | 12. Cd det pzfaust |
| 13. Heavy pzfaust sq | 14. Combat supp det |
| 15. Inf. det | 16. Mort det |
| 17. Heavy pzfaust det | |

THE BATTALION

When fighting in builtup areas or in forests, the platoons and companies are frequently confronted by a rapid and completely changing situation. The same holds true even for the battalions of armored troops. Still, the commanders of these troops are able to properly assess the situation and to adequately command and control their units. Things are different for the battalion level of a light infantry. Here the situation develops at a much slower pace. Moreover, the battalion commander must lead the companies on a very long leash, as we would say, and must allow the companies a great deal of independence. This should allow him to lead not only three but four rifle companies, especially since the heavy weapons company, contained in the MICV-infantry battalions, has been incorporated into the infantry companies.

The HQ company, of course, first of all contains the customary battalion command group. In addition, there is presumably also an infantry platoon which the battalion commander may use for reconnaissance and as his immediate action reserve. This is necessary since in covered terrain, a small but quickly available reserve is more valuable than a larger unit which must be called up from somewhere else and which therefore, can be committed only later. The communications platoon must be stronger than our present platoons since they must be mobile even without vehicles. The medical squad also must be reinforced because with increasing foxhole strength the number of wounded will also increase.

Somewhere between the brigade supply point and the battalion, there ends in many situations presumably that zone within which the field force is closely engaged with the enemy. The entire battalions accordingly are located within that area in which organic vehicles only represent a burden and have to be replaced by forest vehicles or tractors. Accordingly, it would be wrong to equip the transport platoon of the battalion with their own vehicles. At time of mobilization, it must procure its vehicles in the specified operational area mainly from the forest administration by notices of requisition. That makes it, indeed, necessary for the brigade to carry the largest part of the battalion's ammunition. Part of the personal equipment of soldiers is likewise to be carried by the brigade. By the way, this results in a situation where- by the brigade must provide the battalions with supplies.

The battalion will have to set up a small supply point. Here will work the administrative officer, parts of the battalion headquarters and the supply services, presumably the clothing detachment, radio repair team and the property accounting detachment. Presumably it will also be appropriate here to assemble the pay clerks and supply noncommissioned officers of the companies. The battalion supply point initially will be located in the rear part of the operational area of the battalion so that the distance to companies operating forward do not become too long. If the enemy penetrates deeper into the area, the supply units must fall back so that they do not burden the combatting units of the battalion.

Even in peacetime the companies require a truck so they can supply their troops in barracks and on exercises, exchange laundry, transport the sick, etc. The company commander requires a vehicle in order to better supervise training. The commander of an infantry company was satisfied with a horse up until 1945. For this reason, a motorcycle would be sufficient today. Further, the battalion also requires a number of vehicles for supply in peacetime, for transporting arrested soldiers and for travelling to the brigade headquarters. The personal baggage of soldiers can be loaded on the company trucks in wartime. The vehicles of the battalion are available to the supply services as initial issue, and also for transportation of indispensable documents and files. However, in this field we should not be afraid of drastic measures. Battalions which go to war with cases of files, bundles of documents, stacks of regulations and containers for classified documents are an absurdity.

Within legal bounds and to the highest possible degree units should procure their rations from the countryside. This would reduce the requirements for supply and for service support personnel. There should be no difficulties with this since chicken, pigs and cattle are available in every village. Thus, it is only necessary to determine whether the field kitchens should stay with the battalion. Presumably, in battle it will be better to assign them to the companies in order to keep supply distances short, above all for hot meals. Hunting lodges or single farms, where cooking can be done, can be found everywhere. Whosoever knows our soldiers can not doubt that the meals will be good.

Figure 5 shows the basic organization of a light infantry battalion. Certainly, details will have to be improved. However, the figure shows that the battalion has many personnel and has many infantrymen. Even if we use the most favourable assumptions, today's MICV-battalions can employ only 32% of their personnel in dismounted combat. Let us grant that these soldiers should be supported by their MICV and by the soldiers who have remained on them. However, in a battle carried out at night in wooded terrain or in builtup areas, it may be difficult to realize this intention with all MICV. On the other hand, the light infantry battalion can lead 640 soldiers, i.e., 57% of the personnel into battle with rifle, hand grenade, machine gun or rocker launcher (Panzerfaust). Sixteen crews of antitank weapons and 16 crews of mortars are not even contained in these figures. In addition to the percentage data the absolute

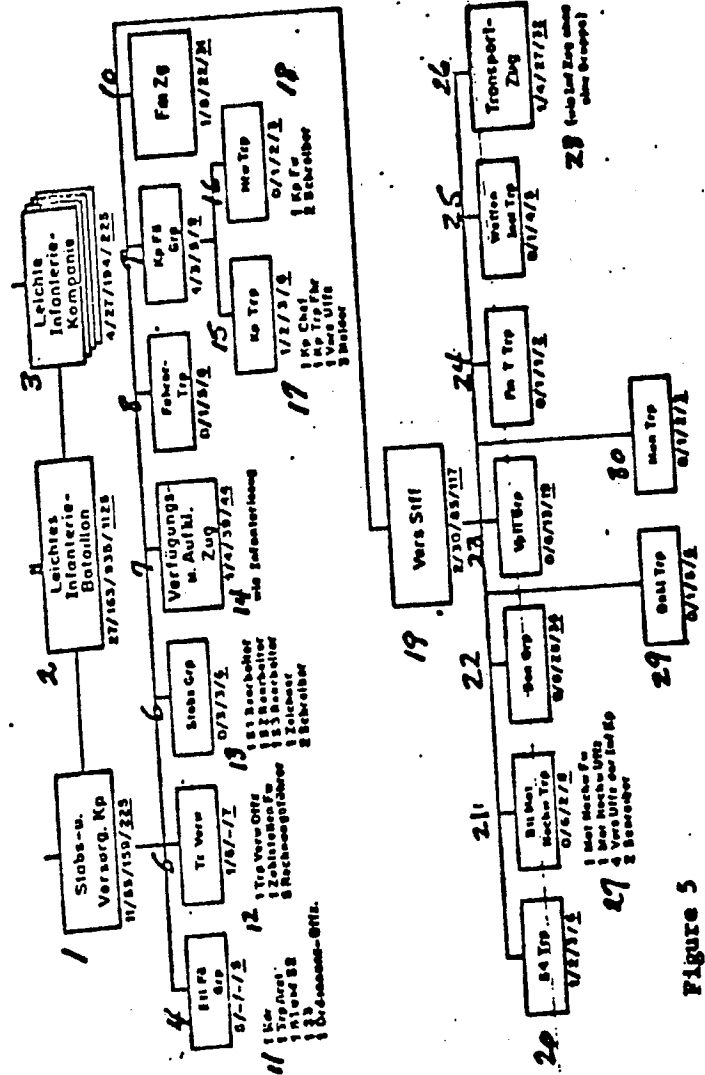


Figure 5

Key to Figure 5:

1. HQ & supply-co
4. Bn cd group
7. Comb support & recon pn
10. Sig pn
13. 1 S1 reviewer, 1 S2 reviewer
13. 1 S1 " , 1 draftsman, 2 writers
13. 1 S3 " , 1 draftsman, 2 writers
16. Chief master sgt det
19. Supply ech
21. Bn mat
24. SIG det
27. 1 prop acct sgt, 1 prop acct NCO, 4 supply NCO of inf co, 2 writers

3. Lgt inf co
6. HQ sq
9. Co cd sq
12. 1 fld admin off, 1 pay acct sgt, 5 pay clerks
15. Co det
18. 1 co sgt, 2 writers
20. S4 det
23. Rat sq
26. Transp dep
29. Clothing det

2. Lgt inf bn
5. Field admin
8. Driver det
11. 1 cdr, 1 fld Dr, 1 S1 & S2, 1 S3, 1 mil aide
14. Like inf pn
17. 1 co cdr, 1 co det cdr, 1 sup- ply NCO, 3 runners
22. Med sq
25. Wpn rep det
28. (Like inf pn w/o 1 sq)
30. Ammo det

numbers are also important: a battalion of light infantry operates far more soldiers in dismounted combat than an entire armored infantry brigade (112).

The dismounted combat strength of our present MICV-battalions is even considerably lower than the percentage stated suggests. These battalions have no soldiers for supply duties in a terrain which requires combat on foot. Every wounded who must be evacuated, every round of ammunition which must be brought forward and evacuation of every prisoner withdraws soldiers from the fighting platoons or from the MICV. The squads and detachments of their heavy weapons have only a few personnel. They cannot supply themselves with ammunition and in difficult terrain can hardly move their weapons. On the other hand, in the light infantry, squads and detachments of heavy weapons are strong in personnel. They can also move on foot. They can protect themselves at least against a weaker enemy, and on approach of a strong enemy they can provide covering fire and withdraw with their weapons. To a limited extent, they can also supply themselves with ammunition. Furthermore, the company commander can supply his platoons using an infantry squad which has not been counted among the personnel available for combat. The battalion commander even has an entire platoon for supply duties. Overall, the battalion has 84 soldiers to evacuate prisoners or wounded or to supply the fighting soldiers with ammunitions and rations. Rarely, will it be necessary for soldiers from the fighting units to accept one of these duties.

The battalion can move all its weapons and equipment over gorges and precipices, straight through the forest and over small bodies of water. Even in the case of rather large bodies of water, boats of the population or rubber rafts supplied by the brigade are sufficient. The battalion accordingly requires no engineers. Even the most difficult terrain cannot force it to leave behind valuable material. This enables the battalion to infiltrate into the enemy with all weapons and equipment or to evade enemy encirclement through exfiltration. Thus, on the ground the battalion is considerably more mobile than our present motorized infantry battalions ("Jager" battalions). In addition, all squads and teams, all weapons and items of equipment can be transported by helicopters.

The supply requirements of the battalion are minimal and restricted almost completely to medical supply and ammunition. This should release personnel from all higher command echelons. Since no costly weapon systems must be procured or maintained, the organization of additional battalions should not be too difficult financially. In covered terrain, therefore, the battalion is superior to a MICV battalion not only since it is better suited for this terrain, but also because its minimal cost and minimal supply requirements should allow the organization of additional battalions.