

CONCLUSIONS

Something has to happen. Earlier or later. Preferably early and voluntarily rather than late and under compulsion. Not in the area of our mechanized formations and, accordingly, not with our existing or remaining armored or armored infantry brigades. Several paths are conceivable for the necessary changes. One path is shown in the following. Undoubtedly, there are other paths also. Perhaps even better ones. This is not in the least true because numerous factors are cooperating in the working out of alternatives. For example, the development of the conscript potential as well as the technical development of weapons, ammunition and armor protection. It is difficult for a single person to comprehend all these factors, and it is still more difficult to evaluate every one of them individually in mutual dependency and it is still more difficult to portray the problem exhaustively. Here, the only concern is to indicate paths in the direction to be adopted but not to determine the goal itself.

The alternative will only then be sought in the right direction when the main deficiencies of our Army are deliberately used as point of departure. We have an Army:

Which is not suited for one half of our terrain,

Which gives away capacities and potential in wide areas,

Which, for this reason, is unnecessarily costly,

And which does not have enough money at least to maintain healthy and viable the units of the structure selected.

These deficiencies have led to a condition whereby our Army:

Has too few fighters,

Has too few good soldiers among its fighters,

Lacks important resupply items,

Has too small a combat force,

Is too supply-dependent,

Has optimized firepower and mobility for certain types of terrain and cannot dominate other areas,

Is pushed toward Scylla and Charybdis and without a radical course correction will be wrecked on one of the two.

Where should we place the lever? The central problem is the optimization of the Army only to one half of the German terrain and the neglect of the other half. If this central problem is solved, the fringe problems will solve themselves or at least can be solved more easily.

What capability should we develop in covered areas? We must be able to dominate these areas again. This means that in these areas we must again become so strong in an "effort-effective" manner that we can prevent enemy mechanized forces from passing through or even penetrating these spaces. As a first minimum requirement, we must become so strong there that the enemy finds himself forced where ever we oppose him to leave his armored personnel carriers and go from mounted to dismounted combat. We thereby:

Slow down the enemy attack drastically and perhaps decisively,

Gain time for deploying our reserves and for determining ourselves the battlefield for their employment,

Force the attacking mechanized enemy to combat under conditions where his trump cards -- long-range fire and mechanized mobility -- are no longer usable.

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At the same time, we will keep in mind a rule of our times which is that an attacker must mechanize and consequently invest enormous resources. The defender can do without mechanizing part of his forces. If he can force the mechanized enemy to fight in covered terrain, he has already accomplished a considerable initial success. Even before the first shot has been fired, it is certain that the attacker will not be able to play a good many of his trump cards. For what do hundreds of tanks of a Russian armored or even a Russian motorized rifle division do if we contain their thrust in a wooded area? The same thing as our tanks. Some of them will support the infantry like an assault gun, and others "will keep themselves ready to contain possible counter-thrusts of the enemy", i.e., they will not be used at all. The attacking enemy will then be mainly reduced to his dismounted infantry. Such an infantry, however, does not have much offensive power, at least as long as we are able to use grenades with proximity fuzes and as long as even our last supply soldier is equipped with a rapid-firing automatic weapon.

Where can changes be made? We want to force the enemy to battle in covered terrain. Accordingly, no changes are required for all units -- committed forward or reserves -- which are earmarked for open terrain. On the other hand, changes are necessary for all units which are to fight in covered areas. And shouldn't we know these units quite well?

#### FIRST BASIS FOR A SOLUTION: ADAPTATION TO THE TERRAIN

Accordingly, we require major formations whose organization, weaponry and equipment are as adapted to combat in broken terrain as are those of the present division to combat in open terrain. These "light"

field forces will, however, have great difficulties if they are taken out and committed in terrain which is open and favorable to tanks. These difficulties will, of course, not be greater than the problems faced by a mechanized major unit deployed today in the Rhoen mountains or in the Steigerwald, in the Fichtelgebirge or in the wooded areas of the Heath. Two types of divisions will accordingly be produced. One division is optimized for infantry combat, i.e., for combat in covered terrain. The other will carry out mechanized combat in open spaces.

The disadvantages of such an Army composition are clear. The twentieth century, nevertheless, reveals in all spheres of life a rapidly increasing and clearly unavoidable specialization. It could be astonishing if an army so deeply affected by technology could avoid this development without an adverse effect. Technology has also signified specialization since the early beginnings. Whoever will have one may not seek to reject the other. Already the chariots' culminations of technology of their time, had to require open and flat terrain. The same is true of the armies of knights and the cavalry units of the 18th and 19th centuries. Tanks initially failed miserably in the swampy pocked terrain of the Sommes. Their first successes were achieved when they found it possible to attack in terrain favorable to tanks at Cambrai.

Specialization made still further advances in the Second World War corresponding to further progress of technology. Various war theaters now required quite differing types of divisions. The absurd idea occurred to no one to use tank divisions in Karelia or in Lapland. The utilization of armored divisions on the Volkhov for thrusting at Leningrad has been criticized as a serious command error. Rommel, on the other hand, resisted bitterly when nonmotorized units were transferred to Africa.

Since that time, technology has made still further progress. The specialization of specified service branches for a specified terrain has been correspondingly intensified. Theoretically, the Bundeswehr took this into account when it established armored and armored infantry divisions. Both dispose, however, of the same divisional troops. In addition, two of the brigades are completely identical. Even the third brigade is the same with the exception of one battalion and slight differences in the tank destroyer company. Correspondingly, there are only slight differences in the number of main battletanks, MICV, armored reconnaissance vehicles and tank destroyers. The armored division is not, as the name suggests, a major unit with significantly more tanks than an armored infantry division, and the latter has in no way significantly more armored infantry. They only differed when the armored infantry brigades still had an additional armored infantry battalion.

Today, therefore, we have almost uniform divisions. The difference between the two types of divisions is too slight. No emphasis can be made. The differences is not big enough to account for the differences of our terrain -- from the Bavarian Forest to the wide plains around Paderborn or Hannover. It was for valid reasons that the Wehrmacht

already fielded, in addition to special formations (fortress division, para divisions, security divisions and replacement divisions), a number of basically different division types such as light rifle ("Jaeger") divisions for combat in swamp and forest, mountain divisions for the high mountains, infantry divisions as "maid of all work", armored divisions for the assault predominantly in open terrain and armored infantry divisions for their infantry assistance. The uniform divisions of the Bundeswehr are, compared to that, a step backward. Here is the first point at which a change must be initiated.

#### SECOND BASIS FOR A SOLUTION: ADAPTATION TO EMPLOYMENT

Technology specializes a unit not only for a specified terrain but also for a specified mission. The history of warfare again supplies numerous examples. The chariots of antiquity were only able to carry out defense offensively. The same is true of the armies of knights. Frederick the Great threatened after the ravaging experiences of the first Silesian wars any cavalry commander with a "discharge in disgrace" who let himself be attacked by the enemy instead of himself attacking (97).

With these examples, it becomes obvious that arms which required open terrain were predominantly suited for attack but hardly for the stubborn holding of a position or a narrowly circumscribed area. This became already clear during the first tank operations. The tanks had been developed for attack. At Cambrai, they had achieved great successes which were gambled away not by the lower echelons but by an incompetent command. However, a few months later, they were simply swamped away by the German Michael offensive (98). Shortly after this, when they were again used on the attack, they achieved decisive successes. The specialization of branches to specified employment options was intensified consistent with progress of technology in the Second World War. This process is often overlooked. The reasons, of course, are clear. Tank units closed the ring around the Polish armies, were the first to reach the Channel at Abbeville, led the great spearheads in the east and trapped entire armies in giant encirclements. Russian armored units cut off Stalingrad and formed the German Front in Romania, in the central sector and later on the Vistula. Thus, armored units quite rightly occupied the foreground of the stage. Of course, the combat of the infantry divisions was not any less important. However, it was less spectacular. The names of the great tank commanders are justly spoken of even today -- from Rommel through Patton up to Rokossovskij. However, who knows those who commanded the great defense battles of the German infantry at Rshév and around Vitebsk, around Schusselburg, Demyansk and the Kuban bridgehead, on the Mjus and on the Volkhov? Battles which required more blood and just as much bravery as the great armored operations and lasted even much longer. The successes of the infantry lacked the triumph of the final decision and extensive gain of territory which fires the imagination. The successes remained without luster. They brought little fame and almost always left the infantry in the shadow of their comrades of the armored forces. There is, however, a great danger for the armored forces inherent in their well-justified fame. The limits imposed on them by technology became masked. It was only too easy for the observer to fall prey to the fascination arising from a far-ranging armored

raid. He runs the danger of entrusting everything to armored units and expecting armored units to do everything, even tasks with which they cannot cope.

In spite of the great successes of their major armored offensives, the Russians drew the conclusion from the Second World War that the infantry is the "most decisive" service branch (99). Assuredly, the superlative is questionable not only from the linguistic standpoint. Armored units contributed and continue to contribute in no lesser a way to the decision. A controversy about the precedence between infantry and tanks would be just as unintelligent as the controversy about the precedence between head and stomach in the fable of antiquity. It is only necessary to acknowledge that both strong armored units as well as strong infantry units were required in the Second World War. Infantry held the terrain won by armored units, fought in broken terrain, in woods, swamps, highlands and builtup areas. Infantry broke through prepared defense positions and blazed the way for tanks. Strong infantry units had to be deployed in order to mop up the great encirclements, for counter-insurgency combat, for attack at and in Leningrad and Stalingrad, for the breakthrough attack at Kursk and Belgorod and, above all, for month-long defense at rivers Kuban and Mjus, at Rshhev and at Volkhov.

The German Army has rejected infantry units today. Its armored infantry divisions resemble with respect to the number of tanks, the degree of motorization and mechanization the armored divisions of the last war and our time. The actual task of the infantry -- from counter-insurgency combat to defense in forests and industrial areas -- must accordingly be assumed today by mechanized forces. This contradicts their training, equipment, weaponry and organization. It contradicts no less clearly the essence and operational principles of highly mobile units.

The armored divisions were the highest trumps in the last war. However, no game is played with aces only. The financial and logistical difficulties of our Army clearly show to where the attempt is leading, to conduct warfare only with expensive and sensitive high-technology divisions. We are lacking infantry divisions for relieving our mechanized divisions from the specific infantry tasks which are defense and combat in covered terrain -- and also temporarily relieving them for restoration of forces. Whoever wishes to even defend covered terrain with mechanized forces wastes his trumps. He subjects the mechanized units of his army to a degree of attrition which must within a short time lead to their collapse.

The specialization of the divisions both corresponding to the terrain of their presumable operating area and also corresponding to their presumable mission is accordingly unavoidable.. The attempt to carry out warfare today always with the same type of division without consideration for terrain and type of combat must be accompanied by great disadvantages. The striving for "uniform decisions" is irrevocably obsolete since the separation between infantry, cavalry and chariots and only represents a step backward. A division which can be used for defending the Rhoen mountains, the Spessart and the forest areas in the North Germany Plain and likewise for a attack near Braunschweig and Paderborn. is a pipe dream.

It is certain that, even today, every division, even every battalion, must dispose of a number of service branches or at least a multiplicity of weapons. A brigade consisting only of tanks is just as much an absurdity as an infantry battalion whose heaviest weapon is a machine gun. The arms must nevertheless be incorporated into the units and major formations in such a way that the commander can form clear points of main effort depending on terrain and mission.

THIRD BASIS FOR A SOLUTION: REDUCTION OF SUPPLY REQUIREMENT

The management cost of modern units is high. Command, maintenance and supply as well as their security consume the mass of personnel and, in addition, the especially qualified soldiers. Units which are specified for combat in covered terrain however require above all a great number of well-qualified soldiers. Terrain broken up into small sectors requires numerous weapons and, in addition, numerous "fighters". The most primitive solution of the problem would consist in breaking up parts of the rear services and assigning them to the infantry. The size of the rear services is, however, adapted to the presumable requirement. The root of the problem, therefore, is not merely in the scope of the rear services -- they are rather too small than too large. It lies in the magnitude of the supply requirement. It will accordingly be necessary to reduce the supply requirement if it is desired to attack the root of the problem. Requirements for support and supply take their origin with the combat and combat support forces. They require mainly fuel, ammunition and maintenance. Every change will have to be initiated here. The units must be relieved of that equipment which can no longer justify their supply requirement and thereby also their requirement for rear services when operating in covered terrain. The objection is anticipated that the unit will, however, perhaps be able to use the equipment occasionally. This justified objection must be weighed against the additional costs and the additional supply requirement. The potential of the rear services thus released must then be added to the combat forces.

FOURTH BASIS FOR A SOLUTION: ADAPTATION TO THE TERRAIN: MECHANIZATION OR PARTISAN TACTICS

In World War II long-range attack and counterattack, later mobile defense, were domains of the armored and armored infantry divisions. Their task was mobile warfare. The task of the infantry divisions was often to hold terrain which had been taken. Wherever large infantry formations faced one another, there consequently resulted often conditions whose rigidity and consumption of ammunition reminded of the First World War.

This development was necessary. The infantryman cannot fight in an open meadow. He requires protection of the ground. In defense, he clings, for this reason, to the position laboriously constructed often in day-long toil. The combat of infantry is, for this reason, necessarily static. The infantry is not suited for mobile operations of mechanized units. It is doubtful whether it ever will be (100).

A defense, nevertheless, as was carried out at Cassino or El Alamein, at Rshhev or on the Volkhov for months at a time from the same positions, could be destroyed today a great deal easier than in the Second World War. By nuclear weapons without any great expenditure and without noteworthy difficulties. However, also by conventional weapons owing to modern area weapons. This indicates an important step forward in the development of weapons technology which calls for a corresponding development of infantry tactics.

During the Second World War, the effect of firepower was described i.a. by the following characteristics:

Weapons with a noteworthy area effect were lacking since the effect of shells and bombs against dug-in troops hardly went beyond craters.

For this reason, only rarely could so much ordnance be delivered into a given area, that even a well dug-in defender had to die. An area effect could be achieved only with large-scale concentrations of firepower. This, however, required much time and large resources which were only rarely available.

But, wherever the attacker was able to establish artillery concentrations of this size, he was often able to quickly break through in the Second World War. We Germans like to overlook that, in the second part of the Eastern Campaign, the Russians often achieved their great decision-seeking offensives at the first attempt. An essential part of this was played by an artillery preparation which almost completely destroyed the forward operating German forces in the shortest possible time and enabled the breakthrough within a short period (10). Characteristic samples are the Russian offensives in the central sector and in Romania 1944 as well as on the Vistula 1945. They led in days, if not in hours, to the collapse of entire Front sectors. The Western opponents succeeded in hardly anything of a similar nature. The reasons lie, nevertheless, not in a lesser material superiority.

A static defense against a qualitatively superior opponent was already exceedingly in danger by the end of the Second World War. This situation was once again aggravated by weapons which affect an entire area and against which even positions constructed for days offer only a limited protection. The nonnuclear artillery already achieves a considerable area effect against defending platoons and companies by shells with proximity fuzes. Indeed, the infantrymen still find protection in underground shelters and covered trenches. However, when will modern combat allow us time to build such perfect positions. Further, napalm bombs, quite contrary to the explosive bombs of the Second World War, achieve an area effect not only against field positions but destroy the defender even in dug-outs and covered trenches. Cluster bombs and possibly fuel air explosives reinforce the effect of the abovementioned weapons.

Thus, the stubborn holding of static positions has increasingly become doubtful. What consequences have been drawn by our Army from this situation? If the development of our tactics is investigated on the basis of battalion regulations, it becomes clear that we have chosen above all mobility from the two conceivable alternatives, increasing dispersion and increasing mobility. The width of the sector assigned to the defending battalions has remained almost constant, and dispersion in depth is hardly less emphasized today than in the 1950s. Accordingly, the same limits remain set for dispersion. On the other hand, mobility has almost continuously been increased. This is a development of our tactics which was connected with a reduction of all static elements in the conduct of operations. In the 1950s, we operated the defending companies in "strong points" and "points of resistance" to be defended by companies or platoons/squads respectively. The strong points could only be given up with the permission of the division commander. First of all, the authority to approve withdrawal from a strong point was delegated to lower command echelons. Then the points of resistance between the strong points were deleted. The next thing was the retreat of static strong points into the background. We still established the battalions in relatively small defense perimeters in which they offered a hard-to-miss target for enemy conventional and nuclear fire. Finally, today our battalions are assigned large and deep defense areas in which they may conduct mobile combat. The companies are still committed in "positions" but even these are, in reality, spaces of considerable extension in depth. When the motorized infantry battalions will shortly be reorganized into MICV battalions, the only static element of our defense will consist in the positions of the infantrymen who dismounted from their MICV.

The development demonstrated is the result of weapons effect. It was made necessary by the effect of nuclear weapons and the strong conventional artillery of all major units of the Warsaw Pact (102). The development was healthy and proper. Of course, we had to armor and mechanize the entire combat force in order to achieve these highly mobile tactics. The difficulties arising from this have been described in detail. However, the increase in mobility and thereby the complete mechanization of our Army appeared to be the only possible consequence from the fact that the modern firepower had destroyed the very essence of infantry tactics as they were seen hitherto: the stubborn defense of a prepared position. The resuscitation of a nonmechanized infantry will, for this reason, only be possible provided the chances to survive the firepower of modern weapons can be produced in another way. One thing is certain. To commit motorized infantry in static positions on a company or battalion basis as we have done up until the 1950s was already questionable by the end of the Second World War. It would today no longer be appropriate to the enemy weapons effect.

The attempt to solve the problem must start from the fact that dispersion and mobility are complementary to a noteworthy extent. Whoever is protected from enemy fire by continuous movement and armor can waive



dispersion at least to a limited extent. A nonmechanized infantry can hardly take this path. It can protect itself successfully only from positions (103). At least, the man and his weapon require cover. For this purpose even in favorable terrain, such as perhaps in the sandy soil of the Heath, several hours will be required. In less favorable terrain, such as perhaps in the rocky marly, limestone or shale soil of our Central Highlands, many hours will be necessary -- in the event the man goes into the ground at all. This makes it completely impossible to move it continuously. It must be able to remain in the same area for longer periods of time. This sets very narrow limits to its mobility.

Accordingly, a modern infantry must go the way of dispersion. In our Army, it appears as if this way has never been seriously tested and thought through. Whoever is very, very widely dispersed is first of all very difficult to reconnoiter. If he is reconnoitered, he still offers in many cases a possible but hardly a worthwhile target. Since dispersion is to protect at least from the strong effect of nonnuclear firepower, it must be carried very far. The defender then is, of course, faced with the problem of bringing to bear enough combat capability at the point of decision. A dispersion as great as this maintained even in combat contradicts the combat doctrine of all service branches which require the combined strike e.g., the concentration, not only the inter-action, of all forces at the hour of decision (104). A modern infantry will accordingly be different from our present day combat forces and will fight according to a different doctrine. Their combat doctrine must consider that, on the battlefield of Europe in the last part of the twentieth century, only two tactics will withstand the firepower of enemy weapons:

Mechanized combat tactics, which means high mobility under armored protection, i.e., tanks, MICV (not APC), reconnaissance, SP guns and fully mechanized support (AAA).

Or tactics which call for maximum dispersion and which thus approximate the tactics of strong partisan units.