THE BRIGADE

Our former armored infantry brigades commanded four maneuver battalions. The brigades of our new army organization will have four battalions in wartime. Thus, a light infantry brigade should be able to command four infantry battalions. It then has 2,560 soldiers for dismounted combat. This is far more than a Motorized Rifle Division can commit, many times more than a Russian tank division or a German armored brigade and several times more than a German armored infantry brigade can commit for dismounted combat.

A difficult question to answer is whether the firepower of the brigade is sufficient. It has a total of 64 motors which are exclusively light and not mounted on armored personnel carriers. On the other hand, the armored infantry brigade of our present organization can operate 12 heavy mortars loaded on armored personnel carriers as well as the 18 self-propelled howitzers of the artillery battalion. If an availability of 80% can be assumed for tracked vehicles, the 64 light mortars of the light infantry can be contrasted against the 25 self-propelled howitzers and mortars of our armored infantry brigades. In addition, it is important that the armored infantry brigade required fire support for three maneuver battalions, whereas an infantry brigade would require fire support for four battalions. Finally, the armored infantry brigade has excellent fire control systems and thereby the capability to concentrate its fire and to control the fire of the division artillery.

On the other hand, today's armored infantry brigade is specified for combat in open areas whereas the light infantry should be optimized for terrain which clearly obstructs the employment of heavy weapons. The most difficult thing is to adequately assess the effect of differing combat doctrines. Still less than the armored infantry is a light infantry supposed to shatter the enemy by shock and fire.

Therefore, further study is necessary to find out if, as assumed in this study, mortars are sufficient for the light infantry brigade and fire support by the division artillery will not normally be needed. If this assumption is justified, organizational changes in the division artillery regiment will be required. It must send liaison teams and observers into the infantry battle area. Only in this way can those data be obtained that were formerly received from the artillery battalions of the brigades and which the division artillery needs to adequately support the fighting battalions.

It is similarly difficult to explore in a theoretical study if the antitank defense, as it has been outlined, will be sufficient. In its proposed organization, the brigade has 64 antitank weapons, ATGW or rocket launchers. The MILAN would certainly be unsuitable. What is needed are weapons which have only a minimal minimum combat range. A maximum range of 1000 m or at most 1500 m is required in order to provide the ability of dominating individual open areas and valley plains.

The brigade is to fight under conditions which make employment of large tank formations difficult. Therefore, long-range antitank weapons should normally not be required. Despite this, the brigade probably will rightly request its own antitank company. It needs the capability to engage the enemy already when he approaches forested areas or villages. Most important is the capability to dominate large open spaces which may be found within the brigade's operating area. In addition, the brigade needs the capability to form an antitank main point of effort (Schwerpunkt) and to reinforce the antitank defense of the battalions.

There are important reasons to equip this company with tank destroyers. Above all, they allow shifting the main point of antitank effort even under enemy fire. This advantage must, however, be weighed against the disadvantages which probably are larger. Again, we would hitch two different horses to the same wagon: a brigade which fights exclusively dismounted would have one mechanized unit. The brigade would no longer be airtransportable and would no longer be completely independent of the terrain. The strength of units which fight on foot are where the weaknesses of the mechanized unit are, and vice versa. When operating together on the battlefield, much friction will be caused, since mechanized and dismounted units look for different types of terrain and fight according to different doctrines. Finally, if a mechanized company belongs to the brigade, an adequate supply apparatus would have to be organized.

There are only two solutions. Either the brigade receives an antitank company, equipped with portable ATGW, or our present mechanized tank destroyer companies are concentrated at division level and will be attached to brigades whenever needed. The second solution, however, only glossed over the problem of joint action of mechanized and foot units. The problem would immediately be surfaced again when a mechanized tank destroyer unit is attached to the brigade or to one of its battalions. Presumably, it will be more advantageous to organize the brigade with a non-mechanized antitank company. As regards its organization and equipment, again the principle must be observed that a few detachments, strong enough to carry along their ammunition, are better than many small detachments which shoot up all their ammunition in a short while and then lie idle.

When the birgade has no mechanized units and when portable weapons are the heaviest equipment, an engineer company would be superfluous. It is sufficient to have a squad in the brigade's HQ company which takes along rubber rafts for the battalions.

The NBC defense company will also be unnecessary. There is hardly any heavy equipment which must be decontaminated. Wide dispersion in the operating area, moreover, would make it impossible for most soldiers, to reach the operating point of the NBC defense company in time.

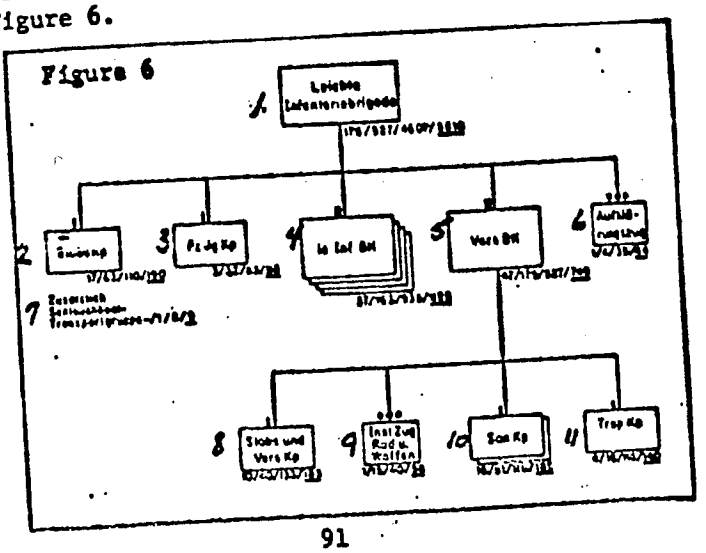
The place of the old brigade's armored reconnaissance platoon should be taken by an infantry platoon with long range radios. Its task is not to fight on foot like the other infantry platoons do, but rather long range reconnaissance deep into enemy territory. This is possible and necessary since the primarily covered terrain of the operating area greatly obstructs conventional reconnaissance resources such as drones and aircraft. The missions of this platoon must contribute to closing or at least narrowing the gap between our special long range reconnaissance teams and normal battlefield reconnaissance.

From our present day supply and support company we require all its transportation capability. On the other hand, those elements of the company which deal with resupply of spare parts and exchange parts can be drastically reduced in size. The same holds true for those elements which organize resupply of ammunition, rations and POL. Possibly, the transportation capability of the company must even be expanded since it must move the greatest part of the battalion's basic load.

The maintenance and repair company can be reduced to a platoon which reapirs the weapons and the few wheeled vehicles. Instead of one medical company, two will be needed. When many more soldiers participate in battles, losses will also be higher. Probably all these support units must not be commanded by their own support battalion HQ. Disbandment of our former support battalion staffs was hardly an error. On the other hand, it will not be easy to supply a fighting force which always is widely dispersed. In addition, the brigade must fetch supply items from the corps depots and must also deliver them to the battalions which don't have organic transportation resources. This study, therefore, assumes that all service support companies should not be tasked directly by the brigade's G4, but by a support battalion HQ organized for these purposes.

This results in the organization of a light infantry brigade as shown in Figure 6.

Figure 6



Key to Figure 6:

1. Lgt inf bde
2. HQ co
3. Tk dest co
4. Lgt inf bn
5. Supply bn
6. Recon pn
7. Additional rubber raft transp sq
8. HQ and supply co
9. Rep pn, wheel & wpn
10. Med co
11. Transp co

THE DIVISION

The light infantry has tactical, financial and logistic problems to thank for its origin. We find in the foreground the need to defend again that half of the German terrain which is unfavorable to armor with a field force which is adapted to this terrain and, in addition, is also cost-effective. The extension of the areas unfavorable for armor could suggest on closer investigation not to be satisfied with light infantry brigades. It could be appropriate to also establish or organize even larger formations. This far-reaching decision would be exceedingly important, hence difficult to make and would, therefore, presuppose detailed and extensive studies.

The congested areas around and east of Hanover, the hugh forested areas of the so-called Heath as well as the hedgerow landscape of Schleswig-Holstein allow and call for the employment of individual infantry formations. However, only in the Heath and in the south of Kassel could it be reasonable to employ infantry divisions. Just as now, mechanized formations must be held behind them as command reserves as well as for exploitation of local successes. In the above mentioned areas, there would then result a similar division of missions as in the past war between major formations of the infantry and of the mechanized forces. This division of responsibilities spares the valuable and expensive mechanized formations. It is a procedure which worked well in the last war. At least, as long as there was a bearable force ratio and especially as long as our infantry division had sufficient antitank capability.

Should infantry divisions prove suitable, the division troops, i.e., the battalions and companies directly responsible to the division must be adapted to the new organization and task of the division. The antiaircraft battalion could possibly be reduced in size since the brigade has hardly any units which could be attacked from the air. The bridge-constructing capability of the engineer battalion is much too large. On the other hand, its capability to emplace barriers (both conventional and nuclear barriers) should be drastically enlarged. The artillery regiment must be retained. As regards the division's supply battalion, a reorganization will be necessary which follows similar principles as in the case of the logistic troops of the brigades.

In the event of a large-scale attack of the enemy, it will always be possible that the enemy breaks through the defense areas of the brigades. This is not different from today's situation. The division, however, must have its own resources to employ against such enemy formations. If not, whenever enemy formations break through, the division would have to ask for corps reserves, and these possibly would have to be committed piecemeal at separate locations. Accordingly, the division needs a mechanized formation to contain and block enemy penetrations. If possible, to be used offensively to destroy, by counterattack, weaker enemy penetrating forces. The armored reconnaissance battalions at present are the strongest battalions we have. It is obvious to earmark them for the tasks outlined.

Which capability and deficiencies does such an infantry force have? It has numerous deficiencies. For redeployment over large distances it needs helicopters - although, if these can be made available, it can be moved rapidly and without loss of combat capability. Accordingly, like our mechanized formations, it can only move over larger distances when the air situation is favorable. It is also unsuited for battle in open areas - just as our mechanized forces are unsuited for battle in covered terrain. It lacks striking power so that it can neither carry out large offensives nor counterattacks. Additional factors appear: amateurs and laymen, who consider rattling of tracks and whining of engines indispensible signs of modernity and progress, will never understand a force which quietly moves on foot, loaded with small packs of weapons and ammunition. Those who are only able to see soldiers as the scientifically trained operators of technical apparatuses will never understand such a force at all.

Such a force could not even hold a position till the last round has been fired because enemy fire would presumably annihilate them before they pushed the last round into the barrel. But such a force would be able to "efford-effectively" defend the extensive covered areas which constitute about half of the battlefield in Central Europe. This would be favored, last not least, by the definite weakness of the enemy infantry. Taking in extreme example: A tank division of the Warsaw Pack must carry out an attack through resolutely defended covered terrain with less than 1000 dismounted motorized riflemen. When these are gone, hundreds of tanks can only continue the attack if the division would risk an attack with empty MICV, restrained to highways and roads, and if the division were ready to risk their tasks without infantry protection in infantry terrain.

In short, a light infantry has many great deficiencies. It cannot do more than defend covered terrain (half of Germany) more "effort-effectively" than our mechanized units. Is this much or is this little? Are we allowed to make little of such a capability?

FORMATION

The question must be raised as to where the light infantry is to come from. The personnel level of our armed forces and of the army is limited. And, as everyone knows, the Army's personnel level is completely exhausted. Additional personnel are not available. First it will be necessary to inquire if it is possible to raise light infantry units only in a time of tension and to dispense with active peacetime units. The important question, whether a timely mobilization of forces to be used near the border in forward defense is possible at all is out of consideration for the time being.

It is widely accepted today that units which have a low level of technology can be mobilized in time of tension, whereas high-technology forces must be active already in peacetime. The basis for this view is the belief that the training time required increases with the technological complexity of weapons and equipment. The more complex technology, the longer training is required. This makes it possible to mobilize infantry units just before a war starts, whereas a LEOPARD battalion must be active.

The conviction, that training time increases with the level of technological sophistication is as widespread as it is one-sided. Does not technology often intend to relieve the soldier from certain activities and to thereby make his job easier? Have not the technicians indeed achieved successes which we can even observe in the everyday life of the units? It is simpler to build a bridge by a bridge-laying tank than to construct in day-long toil those complicated wooded bridges which must have plagued the Wehrmacht. Rightly, construction of such bridges has almost completely disappeared from the training program of our engineer companies. The technicians have also kept their promise to make the new radio sets more easy to operate. Is not the SEM 25 much easier to operate than the GRC sets which many times were our despair? And who remembers how difficult it was to maintain and repair the MICV HS 30? Also, we can drive a LEOPARD tank after a few minutes of instruction. This was impossible with the predecessors of the LEOPARD, owing to the different design of gearing, tracks, clutch and suspension. During maintenance, many soldiers only check major parts or boxes and, if necessary, exchange them. Is this not simpler than it was hitherto when we had to locate those individual parts which had broken down, had to take them out and had to repair them? Granted, that several new items of equipment do require much training time, e.g., the range finder of our LEOPARDS. However, would not firing without range finder be even more difficult and would it not require even more training time?

At the same time, we must not overlook that technology and new equipment have enabled us to raise the requirements. The range finder makes the job of our gunners easier. But, therefore, they are now required to hit with the first round. Thus a possible reduction in training time was absorbed by an increase in the performance required. Similar examples can easily be found throughout the army.

Thus, the common statement that technology makes "everything" more complicated, and therefore requires more training time, is based on a very complex factual situation. It can be proven that the claim is false in a number of cases. In other cases, it is certainly correct. Finally, there are cases in which we could not reduce training time because technology allowed us to increase the requirements. Perhaps the claim is also based on a more accurate view: it is questionable, e.g., to procure a LEOPARD 2 for 3.8 million Duetschmark apiece and then to send it into battle with a crew that has just been mobilized. Armor battle results in tank duels. And in such a duel a well-trained cohesive crew of active peacetime units has a far better chance than a crew which has just been organized and whose active service time has ended many months before. We can see this during any live firing exercise when we compare the results of coheisve tank crews with those crews which we had hastily to organize from a few soldiers left over somewhere else. However, is this argument not also true for the crewof a machine gun, a Panzerfaust, an ATGW and certainly for an infantry squad? We want to send the expensive tank into battle only with a topfit crew. However, is the life of our infantrymen less expensive than the tank?

There is one further consideration. The training time required increases not only with the degree of technology; certainly it increases also with the degree of tactical independence with which we must leave to a soldier. Further prusuit of this thought wouldemonstrate a reciprocal relationship:

> If the level of technology is high, little room is left for the free decision of the operator
>
> On the other hand, the lower the degree of technology, the greater is the area where an independent decision is possible.

The soldier in high technology functions (the radio man, the radar operator or a soldier in a tank repair shop) may perhaps need much training time due to the high level of technological sophistication of his job. However, his activity is almost completely restrained to serving his machine. He does not need his long training time because he has to make many free decisions. In addition, whenever he has to decide anything, a soldier in a high technology job normally is in closest contact with his boss who supervises his actions and decisions. This can be illustrated by the examples of a SP howitzer gunner as well as by the example of a soldier in tank repair. Naturally, it is the goal of all our training that our soldiers do the right thing by themselves. However, if the gunner or the driver of a tank make an error, the tank commander has the technical means to intervene and correct them immediately.

The situation is completely different with soldiers of an infantry unit. They must indeed be trained on many weapons. Nevertheless, it may be granted that overall the infantryman needs less training time than a soldier in a high technology function to master the technical

part of his job. Nevertheless, the infantryman needs very much training time because he has to act much more independently and supervision by his bosses is much looser.. At night, during combat in woods or towns, no infantry NCO or officer can control his soldiers as tightly as the commander of a tank can control his crew if this is necessary. The gap must be filled by the infantryman himself and his training must enable him to do so. Therefore, he must be able even more than other soldiers to understand the meaning of the squad's mission, to contribute his own ideas, to independently make his own decisions which must be appropriate tactically for the battle of his squad. Of all things, it was one of the great advocates of mechanized warfare who clearly recognized this fact and stated (113): "It is a fallacy that infantry is the most easily trained arm. None needs more thought, more skill, if it is adequately to play its part . . . because it is less concerned with material elements than other arms. The infantry soldier's use of his weapon is but complementary to the use he makes of tactics and ground in the approach to his objective and his opponent. To train infantry, which is essentially the tactical arm, is to exercise an art whereas to train the technical arms is to apply a science. The infantryman is less of a technician, but he is a field-craftsman - this is the title of honour to which he may aspire in the profession of arms."

Accordingly, the length of training time required is determined by two factors: frequently by the technological sophistication of a function, and also by the degree of independence with which a soldier must act in a tactically sound manner. Our age is determined by technology, therefore we usually see only the first factor. This has clear origins: If a soldier makes a mistake while serving on a high-technology piece of equipment, the machine will not work and even the amateur can see that training was insufficient. On the other hand, the poorly trained infantryman by his lack of skill "only" betrays his reconnaissance patrol, he "only" moves right into enemy fire, he "only" selects a poor firing position and therefore "only" risks to be recognized and to be killed, he "only" misses when he fires and, at best, he is "only" soon taken prisoner. In war, these are everyday events. They are not conspicuous. Only the high losses of poorly trained troops show the expert that death on the battlefield often enough is the direct result of lack of skill, i.e., of poor training and that, therefore, ultimately the command is responsible.

This conclusion is confirmed by the widely made experience that in infantry battles young replacements run the highest risk of becoming a casualty whereas the old hands have much better chances to survive. This indicates that infantry requires the longest training time of all arms and at least a training time which does not lag behind that of mechanized forces.

This conclusion is confirmed by the fact that an infantry unit consists even much less than other army units of the simple sum of personnel and material. Only the inner cohesion, the certainty of knowing each other and of being able to rely upon each other gives an infantry unit its combat effectiveness (114). Without this cohesion, it is only an armed and perhaps obliging assortment of men. Whoever believes that infantry units, earmarked for high-intensity operations and for forward defense, can be produced from mobilized units, will at best be provided units which are hardly different from the unfortunate alert units of WW II.

They were assembled from men returning from leave, which means there were at least experienced old hands among them. However, unless they had time to build up cohesion, the enemy destroyed these units quickly or shattered them inflicting high losses.

The light infantry must accordingly consist of active peacetime units.

This study has attempted to demonstrate that mechanized units cannot be employed effectively in considerable parts of the Federal Republic. Infantry units would be less impressive for the lay public but more appropriate and effective. They would, in addition, release a potential for the reinforcement of mechanized units. Accordingly, light infantry units are not required as additional but instead of existing units. The question, however, arises as to how the high personnel strength of an infantry brigade can be equated to that of our present armored and armored infantry brigades.

The simplest solution would consist in mobilizing entire units, companies or battalions only in time of tension. This solution is discarded for the reasons given although the Bundeswehr had to accept this solution in the case of a number of brigades, for example with the airborne brigades. For considerable time, only a pennon on the situation map would be gained, not however a unit which could with good conscious be used in forward defense against active units of the enemy. Thus, nothing more remains than applying the lever at the opposite end and putting the triangular organization of the infantry squads to use. One of the teams could be established in time of tension only. The units are then still ready for operations in peacetime. At mobilization the augmentation takes place at the lowest level. When the third team arrives, the squad leader may mix his now three teams with old and new soldiers. The reservists are thus integrated into an estimated squad. The inclusion of reservists has a similar effect as replacement of personnel after heavy losses.

Every infantry company could in this way reduce 44 soldiers from its infantry platoons as well as from both combat support squads. Together with a few soldiers from the company sergeant major's detachment and the heavy weapon platoon, this number could be increased to 50 without causing too large an adverse effect on the training of the company. The battalion could therefore save 200 men from its four infantry companies and further 50 men from the medical squad, the transport platoon and the battalion commander's independent infantry platoon. The difference of slightly more than 2000 soldiers between the peacetime strength of an armored infantry brigade and the wartime strength of a light infantry brigade thus could be narrowed down by about 1000 soldiers. A further 250 soldiers might be saved by reducing the logistical troops, mainly from the HQ company of the support battalion which may not be urgently required, from the second medical company and the other companies which are responsible directly to the brigade. Then, however, the limit is reached, unless further reduction of personnel would adversely affect the combat capability required already in peacetime and would be detrimental to training and to the ability to integrate mobilized personnel.

Accordingly, there remains a difference between the strength of a light infantry brigade and an armored infantry brigade of about 750 men. In addition, it should not be concealed that the proposed solution is adequate to the pitiful standards of our Army but is, nevertheless, highly questionable. It is not in accordance with the requirements and experiences of peacetime training.

Already the Prussian Army of King Frederic the Great assigned excess personnel ("supernumeraries", as they were called) to companies in peacetime. The reason for this can easily be seen. In peacetime, every unit lacks soldiers who would be present in wartime because then there will be almost no leave, courses, etc. However, from its very beginning our Army has gone in the opposite direction. Peacetime manning levels are generally below, and sometimes even considerably below wartime strength. This would be bearable if in peacetime only those positions were cancelled which really must be manned in wartime only. Furtheron, it would only be bearable if there were not a continuous increase in those factors which keep our soldiers away from their daily training. This, however, is not true. The consequence is a personnel shortage in our units which easily escapes the attention of our high superiors. The depressing effect which this situation has on our squad leaders and platoon leaders can at best be felt by our company commanders and battalion commanders. Continuous training of cohesive squads and platoons has become rare because company commanders must continuously put together new crews and squads. For daily training, it is rare that our companies have available 75% of their soldiers, and more often than not, it is hardly two thirds (115). According to all findings of military sociology, cohesion of primary groups is the key to the effectiveness of units (116). However, the low manning level prevents our army from establishing this cohesion to the extent desired. This situation has in no way improved when our army decided to establish though on the basis of a few available units, three more brigades without receiving a single additional soldier for these brigades.

For this reason, only with much hesitation can proposals be made how the wartime strength of a unit can be reduced to the wrteched standards of an army which is unable to relaxedly and continuously train cohesive crews, squads and platoons with its available personnel - and which has even become accustomed to this situation. At least another way should be considered, oriented on the fact that the present manpower ceiling of 340,000 men does not represent a major figure. The number can change. Certainly, if we enlarged our army by mechanized formations, we would have considerable difficulties both in domestic politics and, especially, in foreign policy. The situation, however, would be different if mechanized brigades would be reorganized as infantry brigades and would require additional personnel for this reorganization only. As regards home politics, it would be helpful that this reorganization save large sums of money. As regards foreign policy, it would be important that the new light infantry brigades would have more personnel but would also have no offensive capability whatsoever. Reorganization and increase of personnel could be misinterpreted only by the most malicious minds. Accordingly we should at least try to equip the infantry brigades with sufficient personnel. This is despite the fact that the strength of an infantry brigade then will be considerably greater than that of an armored brigade.

Of special significance is the requirement to give all financial economies to those who have made them. This obvious principle had to be ignored with severe consequences when the motorized infantry brigades ("Jager" - brigades) were organized years ago. Most of the personnel and material saved was used outside of the divisions for augmentation of existing units and even for organizing new ones. In result, the divisions which were restructured as a Jager-division found their combat capability markedly weakened. Naturally, the divisions and brigades concerned considered themselves cheated, all the more so since the Jager-divsions were of questionable composition anyhow.

The principle that savings must remain with the saver must be valid also between services. At present, the proportion of the defense budget available for investment is not distributed to the services and other defense agencies in fixed percentages. Rather, distribution is the result of a struggle with all competitors participating. Whosoever cannot present projects which excite national and international sensation finds his starting position already weakened. Whosoever economizes too much finds his chances drastically reduced. Finally, if the sums economized only fall back into the large pot which feeds all the others also, he is clearly cheated. Because of our present procedures, those who normally receive; e.g., 30% or 50% from the large defense pot, only harvest 30% or 50% of the fruits of their efforts to economize. Who among us would not seek under such circumstances to act as if resources were unlimited? Restructuring armored infantry brigades into light infantry brigades would certainly permit very large savings (117). However, our Army can only consider such steps if can be sure that it saves for its own benefit and not for the benefit of, e.g., the MRCA Tornado of our Air Force or the new frigates of our Navy.

EXCURSION: MBFR

About 12 years ago, NATO signalled the Warsaw Pact that it was ready to serve the Western nations not only as an instrument of common defense but also to take over a leading role in detente. After long and tedious preliminaries, this has led to negotiations which since 1973 take place in Vienna and which have become know as MBFR. Already the controversy about the name gives evidence of the difficulties: the term MBFR - Mutual and Balanced Force Reductions - was considered unacceptable by the East. On the insistence of Pact nations, the word "balanced" had to be deleted; negotiations thus started with a concession from NATO.

Every service structure today must conform to MBFR - requirements. Indeed, the result of negotiations is in no way certain. There is no doubt, however, that the organization of armed forces is less important than a possible MBFR agreement which would have overriding importance. For this reason, it is advisable to study the proposed light infantry from this viewpoint as well.