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NATO INTERIM REPORT: EMPLOYMENT
CONCEPTS FOR LIGHT INFANTRY IN EUROPE

by
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EMPLOYMENT CONCEPTS FOR LIGHT INFANTRY IN EUROPE

I. INTRODUCTION

The basic purpose of this study is to examine how light infantry divisions could be employed in a European high intensity environment. The study is not constrained to current war plans, but also examines very early deployment of light infantry divisions. The study has value for two reasons:

° First, it takes a top down look. The utility of light infantry is examined from the perspective of strategy first, then operations, and finally tactics. This approach yields new findings about what battalions should be trained and equipped to do. Not surprisingly, they are not the same as those derived from a bottom up look.

° Second, experienced light infantry commanders looked at real corps sectors with real corps and echelons above corps planners to gain valuable insights about light infantry utilization.

II. SCOPE

This study addresses a wide range of issues involving the employment of light infantry divisions in Europe and surfaces new recommendations and concerns derived from the unique perspective of the author and the method of approach. The method of approach was to begin by looking at strategic questions first. Then Gen Galvin and Gen Otis provided support by offering 13 CENTAG scenarios for employing light infantry divisions. The original 13 scenarios were examined for feasibility and supportability, revised once, and subjected to review by war planners at CENTAG and the four CENTAG corps (see trip report at Annex B). Their comments and additions were incorporated in the final product. The attached Annex A provides 16 scenarios. During the investigation, many other issues surfaced which broadened the scope of the investigation. Annex C provides a guide to employing light infantry in Europe geared to corps and division planners. The first part of the annex addresses how to employ the division, and the second part is an extensive discussion of two types of tactics for employing brigades and battalions. It also addresses division level tactics. It reflects the need to add to the literature in this area. Annex D provides an article by Brigadier Richard Simpkin, the well known authority on both armored warfare and Soviet operations which captures the essence of effective use of light infantry in Europe from a strategic, as well as an operational and tactical perspective. It is well worth reading at least the extract of the article at Annex D before any other part of this study. Annex E is a detailed discussion of augmentation issues. It discusses normal corps support, special corps support requirements, and required attachments. It also makes force structure and combat development recommendations.

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III. THE AUTHORS' PERSPECTIVE

This study was occasioned by the availability of COL Wass de Czege between brigade command and assignment to SHAPE. It was an effort to capture a perspective shaped by the authors previous four years experience which included involvement in the study of operational art and tactics at the School of Advanced Military Studies, and participation in the light infantry division design process at Ft. Leavenworth. He had just completed 27 months of brigade command in the 7th ID(L) which included command experience during the brigade and division certification exercises, and with battalion rotations to the National Training Center and the Joint Readiness Training Center. Advice and input was received from MG Edwin L. Burba, the division commander, and CPT(P) Jim Moon, both of whom were deeply involved personally in the development of light infantry doctrine at battalion level and below at Ft. Benning. The authors were also able to draw on the experiences of others at Ft. Ord. This included two other NTC rotations, and numerous other exercises. The considerable literature on light infantry operations in mid to high intensity warfare was also examined. The credit for what is good in this study should go to the many at Ft. Ord who read, discussed, and contributed to the study (especially CPT(P) Moon). But for the many controversial conclusions and ideas which run counter to main stream thought, the principal author bears full responsibility. The premium on MC Burba's time toward the closing weeks of the study at Ft. Ord made it impossible for him to monitor and assume responsibility for the final product, especially modifications to positions since the principal author's departure which were an outcome of staffing comments and further examination.

IV. STAFFING

A draft of this study was completed on 12 May. It was staffed through I Corps and FORSCOM HQs. Coordinating drafts were also informally staffed with Ft. Leavenworth doctrine writers. Mostly positive comments and no substantive challenges were received. This version of the study has not been coordinated in Europe since my visit in April 1988.

V. STRATEGIC IMPLICATIONS

The idea of early deployment of light infantry divisions to reinforce NATO has strong strategic appeal.

1. The rapid deployment of one or two light infantry divisions to Europe during a state of military vigilance can have an effect on deterrence beyond the cost involved. For one, it can solidify the allies as a signal of our resolve. And second, it can do this all the more effectively in the present international political climate because it portrays a purely defensive capability.

2. From the Soviet perspective, it can act as a deterrent not only from the resolve that is demonstrated, but from the lack of aggressive intent it conveys. The Soviets cannot easily use such a deployment to propagandize aggressive intent by the US or NATO.

3. Light infantry division deployments can enhance conventional deterrence. Since conventional deterrence is important, and none of the allies are likely to be able to increase their conventional force structures, the light divisions can be a visible counter.

4. Adding modern light infantry to the combined arms force mix in the central region can prevent escalation to nuclear war under certain circumstances.

a. This assumes that the Soviets would initiate nuclear operations under one of two conditions. Either at the outset of operations, which appears less likely, or after a sudden frustration of their attempts to seize important operational objectives leading to strategic goals.

b. It can be argued that employing light infantry forward in screening and covering operations can slow the tempo of operations so that Warsaw Pact operations fail (or succeed) "gracefully" rather than calamitously, giving more time for deliberation on both sides. (See Richard Simpkin argument in "Hammer, Anvil, and Net" article provided in Annex D).

VI. OPERATIONAL AND TACTICAL IMPLICATIONS

The deployment of light infantry makes sound operational and tactical sense in each of the CENTAG corps.

1. Some light infantry could be the next force increment of choice in all four CENTAG sectors. If that increment has to come from CONUS with most of its equipment, then the earlier closure time of light infantry adds to its desirability. The corollary to this conclusion is that there is a limit to the amount of light infantry which can be usefully absorbed. In most corps sectors, after two or three light infantry brigades are added, the next force increment of choice rapidly becomes more mobile/protected forces.

2. We would be best served by having a force structure based on divisions with interchangeable brigades (close to the German army model). During the detailed examination of nearly 100 candidate options of which the sixteen in Annex A survived, it became clear that homogeneous divisions (with three nearly similar brigades) do not make sense. Division sectors encompass various terrain types and it was useful to cross attach brigades. For instance, it simply does not make as much sense to defend Bad Hersfeld and environs with M-1's and M-2's when there are alternatives. There are other reasons as well, which become clear only when you look at the conduct of warfare from the top down (strategy to operations to tactics), which happens to be the way wars are fought. The current division structure hampers flexibility from the corps perspective because if any part of a division is engaged, the entire division is engaged. It is impossible to form a new reserve quickly even if several divisions have uncommitted brigades. The division today should fill the functional niche of the corps of WWII. During the Battle of the Bulge, Gen Collins, commanding the VII corps under First Army, had his forward divisions engaged. He was ordered to chop those divisions to adjacent corps and attack into the flank of the Bulge with his reserve division and three others chopped



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to him from elsewhere. Within 48 hours of the order he was engaged along a 90 degree change of axis. The corps of today cover about the same area and fill the functional niche of the WWII field armies, but without the flexibility of their WWII counter-parts because of the fixed division structure.

3. There is a vast difference between the value of light infantry which arrives prior to hostilities and accomplishes pre-planned tasks and that which is chopped to the corps in the heat of battle. In fact, the comparison of the relative value of late or early arrival is very much more lopsided than it would be for any other type of maneuver force. Current plans call for late arrival of light divisions and for their employment as reserves at various echelons above corps. The additional combat power utility to be derived from assigning these divisions directly to a forward deployed corps is significant. Light infantry is very terrain sensitive and leaders need to know and plan for the few options assigned to the division. Close pre-coordination for support with the corps support structure can eliminate many currently perceived support problems. Late arrival and holding light infantry in reserve severely limits the usefulness of light infantry divisions. The relative immobility of the force, the special support requirements, and the time (up to 72 hours) required to prepare for combat once in sector cause special problems for corps staffs at a time when they are already stressed. The range of missions they can accomplish, if introduced after hostilities have begun, is extremely limited.

4. Not much useful has been written in doctrinal publications about light infantry employment in mid to high intensity warfare above the battalion level. And battalion level doctrinal manuals suffer from focus because how battalions will be used within the schemes of corps and divisions has not been given much thought. This study is a beginning point for doctrinal development. The scenarios in Annex A show how light infantry divisions should be employed by corps and generally how divisions should deploy and accomplish assigned tasks. Annex C gets into more detail. If one examines the tasks which will devolve to battalions and looks for doctrinal literature on how to do those tasks, one will find many gaps. The work of studying heavy/light tactics and problems at the NTC is very useful but it must be better focused and put into perspectives above the brigade level. I have avoided the term "heavy/light" because it leads to much faulty reasoning. The term leads to thinking about how to make heavy and light forces compatible and thus focuses on making light infantry better at doing "heavy" tasks. One should instead think of how functional compatibility can be achieved within a common tactical framework. Much like how a mechanized infantry or armored task force is compatible with an artillery battalion. The key point is that light infantry should not be viewed as a substitute for mechanized and armored forces but as a complement. It makes a very different contribution, almost as different as artillery and cavalry. The sooner we realize this the sooner we will have sound doctrine, force structure, force design, and combat developments initiatives for the future force.

5. The mix of tactical forces we have for the corps to work with can be much improved. Assuming that we organize divisions with independent brigades as is suggested in a preceding paragraph, what would be the types of brigades we would want to enable us to best defend these four corps sectors? We would

definitely need a certain number of brigades organized around the Abrams tank and Bradley Infantry Fighting vehicle combination. These would be optimized for the counterattack and delay missions. We would also need brigades with a significant vehicle mobile infantry content, backed up by tanks and other long range anti-tank systems with an organic M-1/M-2 battalion for local counterattack. These would be maximized for the defense of the most prevalent terrain, to follow and support the previous type of brigade in the attack or to break it free when required. We would also need a certain number of brigades which can deny large areas of difficult terrain with a relatively small expense in resources and manpower. They would also be optimized for infiltration and air assault in the offense. These classic light infantry intensive brigades have a complimentary (not competing) role with the other types of brigades in the schemes of divisions and corps. And we don't need many. To this mix of brigades we would add armored cavalry regiments, attack helicopter battalions and brigades, and adequate combat and combat service support. Whatever mix of forces we would arrive at after much careful thought and scrutiny, it would be much different than the mix of tactical forces we will have if current plans and trends run their course. We will end up with a homogeneous force of very similar brigades with nearly identical strengths and weaknesses in capability. That is not what a good tactician or operational artist needs to meet the threat we face.

VII. DOCTRINAL FINDINGS

1. Current doctrinal guidance for the training of our light infantry formations does not cover the type of missions which this study finds most useful in Europe. Current doctrine was developed from the bottom up. In other words, we put our best thought to what squads, platoons, companies, and battalions would be able to do and only fleshed out in general terms what divisions and brigades would do. We also "certified" the division from the bottom up. This study begins by asking what would be the best way to use light infantry divisions in a number of corps settings. It then proceeds to work out the tactics at division level to fulfill the various tasks assigned by the corps. After this, brigade tasks are examined, and then battalions, companies and on down to platoon level in some cases. This top down approach did produce two recurring patterns of operations.

2. This study finds that light infantry can be employed in one of two modes. In heavily compartmented and forested terrain "classical light infantry" tactics are most appropriate. In more open, hilly, and partially forested or urbanized terrain, more traditional archipelago and reverse slope defenses are most appropriate. In the latter situations, light infantry must fight as a combined arms force with mech and armor and must be augmented with longer range antitank weapons. Doctrine for light infantry divisions must address both types of operations. The two modes of employment (described more fully in Annex C) must be better differentiated, developed, and taught in our service schools.

3. The classical light infantry mode is most appropriate to denying large tracts of forested compartmented terrain to the enemy either in the MRA of a corps defense, or as part of a covering or screening force operation. "Classical light infantry" tactics also include attacks by infiltration or air assault to support attacks by larger heavy formations. (The utility of these

operations and the tactics employed are also explained in Annex C). The light infantry we have today is best suited for classical light infantry operations by organization and equipment, but not necessarily by doctrine or training.

4. A modified "regular infantry" mode of operations is most appropriate for much of the terrain in Germany which is hilly but has scattered forests, towns and urban sprawl with open areas between.

a. The current light infantry organization is not well suited for these tactics, yet our light infantry organizations must often fight in this way to accomplish sector defense missions and survive.

b. To be successful, light infantry and mech/armor forces will need to work in close harmony. For instance, one of the most effective defensive techniques for "regular infantry" is the archipelago defense or its variants (urban web). The four factors which determine the success of this technique are:

° first, the ability to develop strong points and obstacles between strong points;

° second, the ability to dominate the ground between the strong points with adequate long range, lethal anti-tank fire power;

° third, the availability of armor/mech counterattack and intervention forces to complete the destruction of forces attempting to pass between the strong points and prevent the enemy from isolating and systematically destroying strong points one by one; and

° fourth, the ability to conduct counter-reconnaissance and to defend the anti-tank strong points from infantry assault.

c. Light infantry organizations are weak in the first three factors. They will not only require engineer augmentation to develop strong points and obstacles but they are not equipped to dig in rapidly. Their few and relatively short range missile systems are easily suppressed and cannot dominate the ground between strong points without mech/armor augmentation. And they will need to be augmented with armor heavy counterattack forces. It only has one required ingredient, the infantry strength to conduct the necessary counter reconnaissance and to prevent the enemy infantry from defeating the anti-tank systems in the strong points. (An elaboration of these tactics is also in Annex C in this study).

VIII. FORCE DESIGN FINDINGS

Some short range and long range force design changes should be made to make the light force more appropriate for European employment.

1. In the short run, the greatest need is to add some small increments to the division's combat and combat support structures to permit splitting off one light infantry brigade with its slice to a heavy division without requiring additional augmentation from corps. This will be a frequent occurrence in the European theater, and may well be a requirement in other theaters as well. In

the numerous scenarios examined, the greatest overall economy of force was achieved in this way. Attempts to keep the division whole invariably resulted in being able to free only a heavy division minus one brigade because a heavy force augmentation was still needed.

2. Another shortrun requirement is the resolution of the artillery issues.

a. The recommendation here is to retain the 105mm battalions and augment the DIVARTY upon deployment with a POMCUS'd CONUS towed 155mm battalion. One reason for this is that early employment of the light division makes it impractical to change guns in Europe. The other is that the extent of change, which changing guns requires, impacts not only the gun batteries but the entire support structure throughout the DISCOM, particularly in the maintenance and transportation areas.

b. The lack of TACFIRE will also be a handicap and will mean interface problems with corps artillery and the other DIVARTYs.

3. Shortage of effective, lethal anti-tank fire is both a force design and combat development problem.

a. The concept of augmentation by corps TLAT battalions is not practical. In any early deployment scenario, these battalions will not be available. When they do become available, they will not be as effective as organic TOWs. The light infantry division augmented with a TLAT battalion still has roughly only two-thirds the number of TOWs of our previous H-series infantry division.

b. The solution of adding TOWs to the TOE comes at an unattractive price in spaces considering the effectiveness of the weapon.

c. The near term solution is to augment with heavy forces in Europe whenever "regular infantry" type tasks are assigned. As unattractive as tying heavy forces down to fire support roles is, there is no short term alternative.

d. The combination of AAWS-M and a responsive hand held laser guided system increase the effectiveness of the light infantry formations in the CENTAG scenarios examined many fold over. They would also diminish the requirement for heavy force augmentation in many instances, freeing up combat potential to be used elsewhere.

(1) The advent of AAWS-M will greatly alleviate the problem since its range will be adequate to replace both the Dragon and the TOW in most places light infantry battalions will be employed.

(2) If the AAWS-M were to be complemented with a ground launched Hellfire or laser guided 120mm mortar projectile system, then the TOW system spaces in the light infantry battalions could be used for a brigade level organization to handle them. The laser designator required could not be the G/VLLD but could be the LTD. The laser designator for light infantry must be more than portable, it must be "infiltrateable" through difficult terrain.

4. A close examination of the CENTAG scenarios led to the conclusion that our future infantry force needs to be redesigned along three lines. Some infantry is required to work closely with tanks, to secure them and insure their rapid advance. Some infantry is required to fight from strong points and to assault strong points, supported by tanks. Finally, some infantry must be good at screening, covering, or defending highly compartmented forested terrain, as well as for infiltration and air assault tactics. What is obvious is that the Bradley infantry has been optimized for the first, and the new light infantry force for the last. The problem is that the middle requirement is very important in Europe, and neither do it well. The big question is how to close the gap.

a. The Bradley represents a big investment in mobility and mobile firepower, and it carries few soldiers for dismounted combat. It is not a good strong point force, and wasn't designed for that. It would be difficult to not only add more soldiers, but the gear that would be required to support that kind of tactics.

b. The light infantry, on the other hand, has a high investment in soldiers and leaders with specialized skills in infiltration and independent small unit tactics. Being optimized for foot mobility, it cannot carry the heavy equipment required for the more traditional infantry type of fighting. The heavy investments in training time required to keep light infantry skills sharp make it difficult to also be proficient in the skills required of modern regular infantry. Because the utility of light infantry tactics and operations are not well understood, there is a great temptation to shift their orientation toward the more traditional regular infantry mold. Modern light infantry tactics against heavy forces are proving effective at the NTC and JREC. Gaming and simulations cannot verify the value of classic light infantry tactics because the attrition models available are not designed to play the fine grained dynamics of light infantry combat. Recent and current studies are examining how to correct the seeming "deficiencies" in AT firepower and "tactical mobility." But in filling the gap, we may lose an important new capability and gain a useless hybrid.

c. What is needed is an organization which can rapidly move to a place and quickly establish an AT strong point which can withstand Warsaw Pact artillery and infantry assault, and dominate the ground between strong points. In the offense it would have the firepower and durability to assault fortified positions to break the armor/mech forces free, and have the tactical mobility to follow and support. It requires transport for its squads and their heavier equipment (also heavier firepower, mines, and modern pioneer tools). In a European scheme of defense designed to defeat the Soviet style of offense, it provides the heavy anvil for the armor/mech hammer.

VIII. COMBAT DEVELOPMENTS FINDINGS

Of all of our combat arms of the combined arms team, it appears that the infantry is the least well developed in all of its facets. Only two facets of this many faceted and flexible branch, represented by the Bradley and the Blackhawk, have been well developed. Much more needs to be done. Those who are familiar

with light infantry consider it a "growth industry" as technology is applied to solving problems to the same extent as it has been in other branches of the combat arms (chiefly through weight reductions of mission items, improved light commo gear, and lethal "infiltrateable" weapons systems). The improvement of the light infantry's combat potential vis a vis the Warsaw Pact and its style of offense should also be pursued under the umbrella of "competitive strategies."

1. Improving the combat potential of light infantry through imaginative technological solutions is one additional and complementary way to attack a potential weakness of the Soviet style of war. The Warsaw Pact formations expect to fight almost symmetrical mechanized and armor formations which, when pierced by advanced detachments, will fight a mobile battle and fall back to protect their rear areas. They expect a quick victory through high tempo operations. If they were to contend with a force which made their reconnaissance more difficult, threatened their rear areas, repeatedly blocked their advance, and attacked their artillery and air defenses, it would cause a considerable diversion of forces and slow and weaken their attack.

2. Providing small light infantry units the ability to set anti-armor ambushes, block roads, and call in and direct lethal systems they need not carry, all without requiring direct confrontations with the forces being attacked, would undoubtedly be an asymmetrical approach to dealing with the Warsaw Pact strength. The capability to get in and among the enemy's highly mechanized formations is there today and being proven at the NTC. What is lacking is the ability to do damage without becoming vulnerable by giving ones position away as is necessary with current weapons. Some current and near term systems are portable, but they are not easily "infiltrateable." They will still require considerable energy to transport across the distances and terrain required of classic light infantry. These capabilities are all worth pursuing.

X. CONCLUSION

Not only do light infantry divisions represent a useful potential addition to the NATO arsenal now, but more so if future force structure, doctrine developments, combat developments, and force design initiatives are pursued along the lines indicated above. The most significant conclusions follow:

1. Light infantry should not be viewed as a substitute for heavy forces. It is an addition to the combined arms array with a combat power potential contribution depending upon employment. It is misleading to use a common denominator, like Anti-tank firepower, to compare Light Infantry units to tank or mechanized infantry units. The measure of worth is what adding a light infantry formation does for the overall combat potential of the larger force.

2. Proper early employment of a light infantry division in any of the Corps examined can free a heavy division to be used as a reserve.

3. Far more utility can be gained from having the light divisions in place before hostilities than from late arrival. While this is generally true of any

force, light divisions are far less flexible as late arriving reinforcements or reserves than are mechanized or armored divisions.

4. The operational effect of light divisions is not attrition of enemy units so much as it is to:

- (1) Keep mobile formations from being fixed forward by secondary attacks.
- (2) Shape and restrict the flow of Warsaw Pact forces.
- (3) Slow the tempo of operations sufficiently to throw off time tables and set up better deep interdiction targets.
- (4) Force Warsaw Pact to dismount infantry and fight through.
- (5) Force Warsaw Pact to use some or all air assault and airborne forces in forward sectors to pass armor through rather than in depth as they would prefer.

5. Light infantry division elements will function either as classical light infantry, or as regular infantry. Regular infantry roles require the greatest augmentation. We need to seriously address the lack of an infantry force which is optimized for the regular infantry mission.

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- ANNEX A: CENTAG Scenarios for Employing Light Infantry Divisions (SECRET, Releasable to NATO)
- ANNEX B: Trip Report
- ANNEX C: Planner's Guide for Employing Light Infantry in Europe
- ANNEX D: "Hammer, Anvil, and Net." by Richard Simpkin
- ANNEX E: Augmentation Issues

ANNEX C: Employing Light Infantry Divisions in Europe

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SECTION I: How to Use the Light Infantry Division

SECTION II: Light Infantry Tactics at Division and Below

A PLANNERS GUIDE FOR THE EMPLOYMENT OF LIGHT INFANTRY DIVISIONS IN EUROPE

INTRODUCTION: This planner's guide was developed during the course of studying and developing actual employment options for light infantry in Europe. This guide and the classified Annex A on employment options are mutually supporting.

The author was involved in the original design of the light division and served in the division as a brigade commander for 27 months. During that time he participated in both the brigade and division certification exercises and rotations to the NTC and JRTC. He was assisted by CPT Jim Moon, who was involved with developing light infantry doctrine at Ft. Benning and heavy-light tactics at Ft. Ord. The following represents the best judgements of the authors and not official Army doctrine, or 7th ID(L) official positions.

SECTION I: How to Use the Light Infantry Division

The guiding principle should be to use the light infantry to complement other maneuver forces within the system of combined arms, rather than as a substitute. There are generally two types of missions for the light infantry division. One seeks to use the light infantry division to replace all or portions of a heavy division in its defensive sector in order to free a heavy division to provide a greater counterattack capability for the corps. The other seeks to employ the light infantry division in other complementary roles. These include use of light infantry as screening and covering forces, in a RACO role, or in various offensive missions.

REPLACING HEAVY DIVISION WITH LIGHT

Any light infantry mission to replace mechanized or armor forces should aim at generating a one for one swap of light for heavy forces. If this is not achievable, then more than likely the concept of employment, the terrain or both need to be adjusted.

LIGHT FORCES TO SHAPE AND BUY TIME

It may be desirable for the corps to deny certain areas to the enemy which are difficult for Mech/Armor forces to defend, but are easily denied by light infantry forces fighting in depth. In performing such a mission, combat power is not measured in echelons defeated, but in the enhancement to the ability of the corps as a whole to defeat the enemy by setting him up for counterattack, and by securing the back door or flanks of other corps forces.

The light infantry division can buy time, or shape the flow of PACT forces, by denying easy access through forested compartmented terrain. Mission statements to the light division should reflect any or all of these requirements rather than defeat of 1st OPECH forces. Any 1st OPECH forces that are defeated in the process should be considered a bonus.

Since time or tempo is a very valuable commodity for the PACT, any time he is forced to take a detour or fight through an area dismounted, he loses. Time accrues many obvious benefits to the NATO defense, and loss of optempo works against his plan and defeat mechanisms.

LIGHT FORCES AS SCREENING/COVERING FORCES

A very valuable use of light infantry is as a screening or covering force. This mission is not new to light infantry historically speaking. It was the most common use of light infantry in the 19th century and in mountainous terrain by other armies in this century. Experience at the NTC and JRTC has shown that light infantry operating dispersed and in rugged terrain can be highly survivable and lethal if properly trained, equipped, and employed. Light infantry battalions have proven to have an excellent ability to defeat the enemy's mounted and dismounted reconnaissance efforts at the NTC and JRTC.

In the many areas of close terrain near the border, light infantry screening or covering (depending on density and augmentation) forces can operate over wide areas from a framework of temporary road blocks, ambushes, tank killer teams, and observation posts. They could rely on 155mm artillery munitions, attack helicopters, land mines, and augmenting direct fire weapons to exact casualties, time delays, and blindness on the enemy's successive tactical echelons while fighting a protracted hit and run battle. This use of light infantry can shape and delay the enemy to set up tactical counterattacks by heavy forces. Forcing the enemy to dismount early can possibly divert enemy specialized infantry meant for parachute or heliborne assault in depth, or to move forward formations with greater dismounted strength. Creating a loss in tempo early can also set up better Deep Battle (or FOFA) targets as the accordion effect makes itself felt behind the enemy's forward echelons at various choke points. If the light infantry screening/covering forces are instructed to place a high priority on the destruction of air defense and artillery as well, then the enemy's combat power is attacked through his combined arms synergy, as combat echelons passing through the screen are stripped of their vital combat support. A final function of light infantry screening/covering forces, and by no means the least important, is to augment the intelligence picture of what is behind the leading echelons. Such detailed and timely information can greatly enhance the overall combat power of the corps. (See Section II Light Infantry Tactics at Division and Below, and Annex A for a further elaboration of tactics, support concepts, and redeployment techniques).

LIGHT DIVISION AS RACO FORCE

Often planners do not consider the light division as a corps RACO force, except as an on order mission out of a static blocking position in depth. Planners ought to consider reversing this. The RACO mission is normally important sooner, and planning can proceed on the other mission.

The light division could provide the C3 and the structure through which the corps could protect its rear area. With one or two of its brigades, the CAB, DIVARTY, and other division troops, it could provide control, surveillance, and immediate reaction to any heliborne, airborne, or advance detachment threat in

the corps rear area. Active patrolling by light infantry units, surveillance by military police and territorial force outposts can be coordinated into an effective screen between installations and base clusters. "Eagle flight" type quick reaction heliborne forces and more deliberate search and attack operations in potential PACT special operating forces hide areas can combine to neutralize the rear area threat.

The division would be ready to accept combat and combat support force augmentation if the defeat of threat forces was beyond its capability. It could be given OPCON of a heavy brigade for a particular emergency for a limited time. Artillery and attack helicopter augmentation could also be provided as the situation dictates.

Initial augmentation for RACO missions would be relatively light. If one or more brigades are detached forward, then augmentation would be required to make up for some of the pieces of the support structure detached (some are not divisible by three).

The light infantry division could also assume a "backstop" role relatively quickly. It could orient on a geographic feature in the corps rear which is easily defended. Using the brigades under its control it organizes the backbone of the defense and integrates more mobile units from other formations into the defense as they become available. Planning, reconnaissance, and preparation could be happening concurrently with the RACO mission.

The division in this role could also coordinate the activities of territorial units in its area to achieve unity of effort. In their third world contingency roles, light division staffs are geared to cooperating with host nation forces, civil authorities and paramilitary organizations.

PASSAGE OF LINES/RELIEF IN PLACE

Planners may want the light infantry division to make a forward passage of lines and relief to defend in sector along the border.

The light infantry division requires at least 72 hours to be prepared for combat, not counting the time needed to conduct the passage and relief. This is especially true because light infantry would occupy and use the terrain differently. Normally battalions need at least 48 hours in sector to allow 24 hours for recon, planning, organization, and to begin obstacle construction, and another 24 hours for companies and platoons to finish preparing primary, alternate and supplementary fighting positions. Recon, planning, and organization can begin during the passage and relief by bringing light infantry leaders forward. More time can be saved by working from preconceived plans. Corps planners must recognize that the relief must begin 4 to 5 days before likely combat. This makes it impractical to employ the light infantry division forward in corps sectors if they do not arrive early.

OFFENSIVE MISSIONS

Offensive missions should also be considered for the light infantry division even though initial missions in NATO may be defensive in nature. One mission

might be the retaking of a critical urban area as part of a corps counterattack, or as part of a counterattacking corps. Another mission might be the retaking of a forested compartmented region in preparation for a corps or larger counterattack. The purpose of this mission may be to clear an area to pass an armored or mechanized division through. The light infantry division also might attack to seize bridgeheads across a river to pass a force with greater combat power through. This may be in conjunction with Bradley infantry. The light infantry may be necessary to control the forested compartment approaches to the crossing sites, or to seize crossings where mechanized forces cannot make crossings unassisted by light infantry. A third type of offensive mission would be to precede the counterattack of a heavy force with night infiltration attacks to conduct reconnaissance and disruption for the heavy force. Such tactics have worked on smaller scale at the NTC in heavy/light rotations. Light infantry battalions can penetrate PACT heavy units up to 15 km in one night, confirming enemy dispositions, clearing choke points, destroying artillery, air defense and other soft targets, and disrupting his command and control. A light infantry brigade can do this for a heavy division, while a light infantry division can do this for a corps.

SECTION II: LIGHT INFANTRY TACTICS AT DIVISION AND BELOW

DOCTRINAL ADJUSTMENTS REQUIRED

Current doctrinal guidance for the training of our light infantry formations does not cover the type of missions which this study finds most useful in Europe. Current doctrine was developed from the bottom up. This study begins by asking what would be the best way to use light infantry divisions in a number of corps settings. It then proceeds to work out the tactics at division level to fulfill the various tasks assigned by the corps. After this, brigade tasks are examined and then on down to platoon level in some cases. This top down approach did produce recurring patterns of operations.

This study finds that light infantry can be employed in one of two modes. In heavily compartmented and forested terrain "classical light infantry" tactics are most appropriate. In more open, hilly, and partially forested or urbanized terrain, more traditional archipelago and reverse slope defenses are most appropriate. In the latter situations, light infantry must fight as a combined arms force with mech and armor and must be augmented with longer range antitank weapons. Doctrine for light infantry divisions must address both types of operations. Future force structure changes should recognize that both types of operations will be necessary taskings, but the same organization may not be able to accomplish both types of missions equally well. For instance, the latter type missions are much more easily accomplished by M-113 equipped battalions with 11-man rifle squads than either J-series Bradley or light infantry battalions.

The doctrine for employment of light infantry in high intensity warfare is not fully developed at all echelons, and concepts for employing light infantry formations within the framework of corps and divisions of all types are not well understood. The two modes of employment must be better differentiated, developed, and taught in our service schools. Both modes of employment are valid requirements and differ greatly from the traditional linear tactics employed by our M-series infantry divisions.

The classical light infantry mode is most appropriate to denying large tracts of forested compartmented terrain to the enemy either in the MBA of a corps defense, or as part of a covering or screening force operation. "Classical light infantry" tactics also include attacks by infiltration or air assault to support attacks by larger heavy formations. The light infantry we have today is best suited for classical light infantry operations by organization and equipment, but not necessarily by doctrine or training.

A modified "regular infantry" mode of operations is most appropriate for much of the terrain in Germany which is hilly, but has scattered forests, towns, and urban sprawl with open areas between.

a. The current light infantry organization is not well suited for these tactics, yet our light infantry organizations must often fight in this way to accomplish sector defense missions and survive.

b. To be successful, light infantry and mech/armor forces will need to work in close harmony. For instance, one of the most effective defensive techniques for "regular infantry" is the archipelago defense or its variants (urban web). The factors which determine the success of this technique are:

° first, the ability to develop strong points and obstacles between strong points;

° second, the ability to dominate the ground between the strong points with adequate long range, lethal anti-tank fire power;

° third, the availability of armor/mech counterattack and intervention forces to complete the destruction of forces attempting to pass between the strong points and prevent the enemy from isolating and systematically destroying strong points one by one; and

° fourth, the ability to protect the AT systems in the strong points from infantry assault.

Light infantry organizations are weak in the first three factors. They will not only require engineer augmentation to develop strong points and obstacles but they are not equipped to dig in rapidly. Their few and relatively short range missile systems are easily suppressed and cannot dominate the ground between strong points without mech/armor augmentation. They will need to be augmented with armor heavy counterattack forces. Light infantry does possess the infantry strength to conduct the necessary counter reconnaissance and to prevent the enemy infantry from defeating the anti-tank systems in the strong points.

TWO BASIC MODES OF OPERATIONS

While traditional or "regular infantry" approach is to seize and hold terrain, the classical light infantry approach is to orient on the enemy using the terrain to achieve greater relative mobility and protection, but never actually holding any one piece. Our current light infantry can do the traditional infantry chores (and indeed must because there is no line infantry), but is not as robust in antitank systems, and transportation. Employment along classical lines will require no augmentation at battalion level, and far less at brigade and division. All infantry defenses depend upon effective integration of combined arms and the synergy thus produced; however, the weight, type and methods of integration will differ.

TRADITIONAL INFANTRY DEFENSIVE TECHNIQUES AND CONTROL MEASURES

Traditional infantry engagements may be sustained actions seeking a decision on a particular piece of ground before the engagement ends. In the traditional light infantry defense, we may give a unit a sector, strong point, or battle position to hold. When we give a unit a sector, we expect the unit to allow no penetration of its rear boundary and maybe even to retain a particularly important piece of terrain. When we assign strong points or battle positions,

we expect the unit to fend off attacks and kill the enemy in killzones generally outside those positions.

It is best to give the infantry a sector, it is next best to assign a strong point mission with augmentation and to cover the strong point with a mobile ground counterattack force. Placing dismounted infantry into battle positions should be avoided.

This technique of control is unduly restrictive and forces the infantry to defend a piece of ground without the means to control the approaches to that ground unless it is heavily augmented. Battle positions also imply that the position is to be held temporarily and then the force is to withdraw to another position. Dismounted infantry is moved from position to position at great risk during contact. It can displace after pressure has been relieved by a counter-attack in front of their position and an unobserved withdrawal route is available.

Light infantry, in a strong point which is properly augmented, can be a valuable asset to the defense of a heavy unit to which the light infantry is attached. It can be used to deflect the enemy into a counterattack trap or break up his formations, but without a dynamic counterpart it can also be a death trap for infantry soldiers.

Light infantry is less suited for strong point and battle position missions than previous H-series infantry formations because of its relative lack of long range direct fire weapons and relative lack of transport to bring up the materials needed to prepare a strong point. Light infantry employment in these type missions require augmentation of anti-tank killing power, ample CL IV and transportation augmentation to deliver it.

LIGHT INFANTRY IN TRADITIONAL SECTOR DEFENSE (DIV AND BDE)

Whenever possible, light infantry battalions in traditional defensive roles should be given sectors in close terrain with opportunities for rear slope defenses in depth. (This has always been desirable for any infantry force and is not a new requirement). Rolling terrain with small forests and villages or towns can also accommodate successful infantry defenses.

The light infantry battalion sector should accommodate no more than one PACT battalion at a time. Likewise, a brigade sector should accommodate no more than one mounted regiment at a time, and that preferable on separate battalion axes.

As stated earlier, the battalion should be given at least 48 hours to prepare. (The light infantry battalion TOE does not include entrenching equipment beyond the individual entrenching tool, which is totally inadequate for this task). Experience has shown that to achieve the 48 hour standard, the battalion needs two picks and two shovels per squad, and at least two SEEs or backhoes. It will also need chainsaws for overhead cover. The battalion itself can emplace up to 7500 AT mines and an equal number of AP mines, as well as build a total of 1000m of triple concertina. Since there are only two sapper

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platoons in each sapper company, additional augmentation will normally be necessary if the sector requires more engineer effort. Barrier material should be delivered to stockage points in the battalion rear and to work sites whenever possible to compensate for the limited transport within the battalion. UH60's from the divisions CAB can slingload to work sites, and they can be used to stockpile class V as well.

Anti-tank killing systems in the light infantry battalion consist of four TOW2s and 36 Dragons (if both day and night sights are used separately). This can be supplemented with AT4s at every position. This meager means is usually supplemented at the NTC and JRTC with attack helicopters and 155mm munitions such as DPICM and FASCAM. Experience has shown that on well compartmented terrain, a well trained battalion, well supported in a synchronized combined arms fight, can hold off a motorized rifle regiment. If any one of these factors are degraded, the ability of the battalion to defeat a motorized rifle regiment declines rapidly. One means for increasing the number of available AT systems is to augment with TOW Light Anti-tank (TLAT) units. These units are in the reserve components, and rarely work with the units they are likely to support. Their state of training is questionable, and their value must be appropriately discounted by planners. They can help, however, increase the density of AT systems in the light division, and should be provided to support light divisions employed in Europe. One TLAT battalion per light division would be normally broken down to one TLAT company per brigade.

One glaring weakness in dismounted infantry in traditional sector defenses is the slim prospect of having a counterattack force capable of finishing off the enemy stalled either in front of or inside the sector. A dismounted counterattack is not likely to be able to carry the necessary AT punch and the force itself becomes more vulnerable to enemy direct and indirect fires as it becomes exposed. Even at night, dismounted counterattacks along traditional lines may not succeed. The old H-series infantry division normally had a battalion of tanks available to hold in reserve or attach out to its brigades in company force. If the light division is augmented with a heavy brigade, it should theoretically be able to hold back a two battalion counterattack force and attach out company teams to each brigade. Practically this could create support problems that may not make the effort worthwhile. A better solution would probably be to rely on heavier artillery and attack helicopter counterattacks by fire within the brigade sectors, and employ the heavy brigade as a division counterattack force. To compensate for the lack of a counterattack force forward, brigades would position their third battalions in depth postured to back up the most dangerous avenue, but able to reposition by Blackhawk to other avenues into prereconnoitered and prepared positions. These rear battalions could also serve to provide the anvil for the hammer of the division counterattack force.

ARCHIPELAGO AND URBAN WEB DEFENSES

A very effective style or type of sector defense for traditional line infantry has been alternately called the archipelago defense (82nd Abn Divs Anti-Armor Defense), "Goodwood Defense" (for technique encountered by the British in Operation Goodwood), and Urban Web Defense (a term used recently in

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light infantry battalion and brigade field circulars taken from a book written by Mikshe describing German WWII tactics. The Germans themselves referred to this as a "hedge hog" defense). In this technique, infantry holds an irregular checkerboard pattern of strong points based on easily defensible terrain (towns, villages, or densely wooded heights) surrounded by normally trafficable terrain. The strong points protect anti-armor systems which in turn cover the terrain between the strong points. Engineer work between the strong points enhances the effectiveness of the anti-tank systems. The attacker is faced with the dilemma of running the gauntlet of protected AT fire and being attrited, or taking the time to defeat the mutually supporting strong points one by one.

The combination of infantry strong points, obstacles covered by AT fires between them, and sharp counterattacks proved to be a successful WWII technique. The successful WWII versions of this defensive system were also provided with armored counterattacking forces which could either defeat attacks on strong points or finish off formations caught in the "web". These counterattacking forces varied in size from company through brigade and were positioned to the flank off the lines of drift in covering terrain or behind the strong points.

The Soviets in WWII countered these defenses with massive suppressive artillery fires on the strong points as the concentrated locus of the AT systems and followed up with massed infantry assaults. This is a time-consuming process. Today they are likely to combine suppressive artillery and smoke in great quantity, and attempt to run the gauntlet initially, hoping for a narrow belt of strong points, and weak or non-existent counterattack forces. Having AT systems which can fire through smoke will be an advantage in such a defense today, as will having airborne AT systems which can supplement such a defense. The H-series infantry and mechanized infantry with their 18 TOWs and numerous 50 cal machineguns would have been ideally suited for the strong point role in this defense. (Even the "leg" infantry battalions could dismount two 50 cal in each company and several more out of the support platoon). Today, Bradley battalions with their 20mms, and Bradley and ITV mounted TOWs can also use this technique.

The four factors which are absolutely essential for any archipelago defense to succeed are:

- a. The ability to dominate the ground between strong points with long range fires which are difficult to suppress.
- b. The construction of a system of obstacles between strong points to slow and channelize the enemy.
- c. The presence of sufficient infantry in the strong points to protect the AT systems from dismounted assault.
- d. The presence of sufficient armored/mechanized counterattack or intervention forces to finish off the enemy caught in the "web" or to relieve the pressure on strong points.

While the light infantry battalions have the infantry strength to defend strong points and the AT systems they contain from infantry assault, they are

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sparse in the tank killing power often needed to make such a system of defense effective. Reinforcing the light infantry division with a TLAT battalion is one partial answer. Another is to reinforce it with a Bradley battalion and its ITVs. Still another is to pull the ITVs out of a heavy brigade augmenting the division to reinforce the strong points.

Survivability of AT systems can be enhanced if they are placed toward the rear and flanks of a town or forested heights firing into the flank and rear of the PACT formation with infantry defending the forward approaches of the town from dismounted forces.

While a mounted counterattack force is usually desirable, and the division could be reinforced with a heavy brigade to provide it, compensation can be made with a reinforcing attack helicopter battalion and a reinforcing brigade of 155mm artillery. If the light infantry installs such a defense among the suburban sprawl approaches to a major city, the maneuver room needed for a mounted counterattack force may not be available. In such a case a corps level counterattack in front of the urban web defense may be more effective and the dynamic element needs of the internal defense may be adequately supplied by a combination of 155mm artillery, attack helicopters, and infantry night attacks.

URBAN WEB VARIANT OF ARCHIPELAGO DEFENSE

The time and engineer effort required to emplace an urban web defense is also to be considered. Depending upon the extent of the system of strong points, at least one additional engineer battalion will be required. The additional work required to rubble buildings and prepare positions which can withstand the PACT artillery will require additional time beyond the 48 hr norm for a battalion. There is no recent experience factor, but an additional 24 hrs would be a good guess.

The urban web techniques may well be the best choice for the light infantry division to use to defend a large urban area. This would provide more depth to the defense and better contest the approaches to the city. The gaps between towns get smaller as the city is approached allowing light infantry AT systems to become more effective and strong point forces are provided more covered withdrawal routes as the pressure increases. As strong point forces withdraw into the city they occupy prearranged sectors to continue a more mobile style of defense within the city.

Consideration should be given to integrating territorial forces into an urban web defense of major cities. Within the city they can occupy the strong points around which the light infantry fights its hit and run battles.

CLASSICAL LIGHT INFANTRY DEFENSES

At the beginning of WWII one Finnish light infantry brigade composed mostly of reservists destroyed two Soviet motorized divisions along the forest trails in the region of the Finnish/Russian border. Modern light infantry in the era of the helicopter (attack and lift), precision guided munitions (Copperhead now, maybe ground launched Hellfire, and a mortar launched variant in the

future), tank defeating artillery (DPICM and FASCAM), modern AT mines (and maybe a scatterable hand emplaceable suitcase mine system coming), night observation devices, remote sensors and an effective portable tank killer with a 2000m range not far away (AAWS-M), can do as well and maybe even better in the future. Classic light infantry is a "growth industry."

Light infantry in classical light infantry roles is not augmented with heavy forces, and can displace heavy forces in a more than one for one ratio. While classical light infantry employment may be more difficult to find in the CENTAG sector than traditional infantry uses, the potential payoff makes it imperative that all such employment opportunities be examined first.

In classical light infantry defenses we give the light infantry relatively larger sectors or areas of operations in terrain where the foot soldier has a relative mobility edge except on trails and roads, which he can block. Using the proper tactics, light infantry can deny large areas which cannot be defended by heavy forces. It can delay the passage of PACT mechanized forces through close terrain choke points, at the same time filtering out his reconnaissance forces. Light infantry can stay behind PACT mechanized forces diverting strength, stripping him of air defenses and artillery, and buying time for NATO defenses. It can also shape the battle for heavy forces and provide covered counterattack routes between sectors, allowing the speedy and secure concentration of heavy forces.

DIVISION OR BRIGADE SECTOR DEFENSE WITHOUT AUGMENTING HEAVY FORCE

It is impossible for the light infantry division to defend in sector in compartmented terrain even without a heavy brigade attached as a counterattack force. To the extent that division sized defensive areas employing these tactics are not available, these techniques can be scaled down to brigade sized missions. Brigade sized areas for employing these tactics are numerous.

For such a defense to succeed easily, the frontage of the division should accommodate no more than 4 or 5 deployed battalion avenues of approach separated by tankproof terrain (or terrain which can be tank proofed laterally). Even one regimental avenue of approach which is not severely restricted at some point can defeat such a defense. The division would posture itself with two brigades forward (each with a battalion in depth) and the third in depth.

The division should be reinforced with one 155mm capable artillery brigade, and an additional attack helicopter battalion. It will need at least one additional engineer battalion and two if the terrain is less well suited.

Forward battalions concentrate on counterreconnaissance and destroy the lead battalions, then sidestep into tank proof terrain with the main part of their force leaving OPs in place to continue bringing observed fire on the enemy. They then re-emerge in alternate positions to take out artillery and air defense covering the leading regiment. They also prepare to take on dismounted infantry forces.

The battalions in depth behind them are reinforced with attack helicopters and destroy the second echelon battalions with the help of minefields and artillery.

The brigade in the rear is prepared to catch whatever PACT forces push through, again reinforced with attack helicopters and artillery. It repositions its companies and battalions with the organic UH60 lift companies as necessary.

Under cover of darkness the forward battalions repair barriers and reposition forces while continuing the counterreconnaissance effort and the effort against dismounted infantry. Their priority will be to prevent the enemy dismounted infantry from penetrating the defense or out-flanking its anti-tank defenses in depth. Secondary to this they continue to bring artillery fires to bear on follow-on forces and destroy any air defense and artillery being brought forward.

Such a defense is strengthened to the degree that tank proof or hindering terrain lies between the avenues of approach to protect and conceal battery positions, FARPs, trains areas, and MSRs. It is vital that the areas between avenues of approach are kept free of enemy air defenses to allow multiple approaches to the avenues of approach for attack helicopters. This technique of defense relies both on the static framework of engineer obstacles and infantry positions and the dynamic numerous counterattacks by fire provided by attack helicopters and 155mm artillery.

PLATOON: THE BASIC FIGHTING ELEMENT OF CLASSIC LIGHT INFANTRY DEFENSES

The reinforced rifle platoon is the basic fighting element in classic light infantry tactics. Each platoon may be reinforced with an FC party, a sapper team, two of the six dragons available to the company (if day and night sights are used separately), and caches of AT4s, mines, explosives, and rations. With its eight machineguns it constitutes a potent and nimble force.

The platoon may operate in an AO of two or three grid squares adjacent to a highway and laced with one or two forest tracks. There may be a one kilometer gap between his sector and the sectors of adjacent platoons to the front, rear and flank.

The platoon may be organized into one reinforced squad sized ambush, an obstacle team, three tank killer teams, and an OP. The platoon becomes intimately acquainted with its terrain and the routes to rally points behind covering platoons to its rear. It establishes covered hide positions, and fighting positions throughout its area to protect against artillery and infantry attack in areas tanks cannot follow. The platoon minimizes its exposure by relying heavily on mines, artillery, CAS and attack helicopters to do most of the tank killing. They ambush mounted infantry and other softer targets, further clogging the roads, and draw the dismounted infantry into machine gun cross fire, and mortar and artillery barrages. They break contact before being decisively engaged.

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The wounded are moved to casualty collection points in clearings off the line of drift, and are evacuated by helicopter or by HMMWV down forest trails. Supplies are cached in the platoon area and on evacuation routes to the rear.

If the platoon is driven out of its area, it may move to a new AO in depth or return to counterattack with a reinforcing platoon.

COMBINED ARMS SYNERGY IN LIGHT INFANTRY DIVISION AND BRIGADE TACTICS

The enemy is under constant surveillance either by platoon OP's or battalion scouts in the battalion area. The area between battalions may be covered by LRSD, ground cavalry troop, or GSR OPs. The air cavalry troops overwatch the movements of major enemy formations. Unattended ground sensors cover dead space and provide backup in critical areas. This information is used to concentrate artillery, attack helicopters and CAS as required.

The effect of stripping his reconnaissance causes the enemy to advance blindly into obstacle after obstacle. The obstacle creates stationary targets for artillery, attack helicopters and CAS.

Attack helicopters of the division's attack battalion operate out of hidden widely distributed FARPs off the lines of drift. They fly along corridors clear of enemy air defense into battle positions previously reconnoitered to deliver massed fires, guide A-10s into their targets, under the protective cover of SEAD fires by artillery.

Artillery is positioned in depth, off the lines of drift, and moved frequently to avoid counter battery fires. FASCAM is fired just behind enemy columns which have converged on an obstacle and to reseal obstacles if necessary. DPICM is fired to destroy halted vehicles. When fog and smoke make attack helicopters and CAS less effective, then artillery will have to carry the burden of the tank killing. The division will need to be augmented with 155mm artillery to the extent the corps can afford. It will be possible to add and delete reinforcing battalions as the battle progresses.

The enemy can be offered up to CAS in neat linear arrangements with reduced air defense umbrella. A-10s may be less vulnerable and most productive when employed to support this type of defense.

Since the division will be deployed over a wide area, and in dense terrain, it will not require air defense augmentation. The division should be able to concentrate most of its assets around its most vulnerable assets. Stingers placed forward in brigade sectors should be oriented to Hind hunting. Because of the paucity of TOW sectors of fire in most areas, one or two TOWs per battalion can also be posted on high ground to kill enemy helicopters within range. The Hind can be a significant threat to the attack helicopters and artillery in this defense.

Since the bulk of the light engineer battalion will be employed forward in the brigade sectors, augmentation of one engineer battalion will be highly desirable. Depending on trafficability conditions, it may be employed as much to make forest tracks into MSRs as in countermobility.

If the division was able to move adequate supplies forward during the preparation phase, there should be little resupply activity forward to the brigades. The artillery will have high usage factors if the division is pressed. The division may have a requirement for truck augmentation of one or two companies in the first two days of the preparation. Likewise, there will be a maintenance surge before and after the battle. During the several days of the battle there is likely to be very little maintenance activity. It is also most probable that damaged equipment up forward in the battalions will be abandoned. Maintenance augmentation is most likely to be needed in the artillery and aviation areas since their systems will be vital and available to be repaired.

FOLLOW-UP TACTICS

The purpose of these tactics is to force the enemy to slow down and systematically clear the terrain of infantry before he can pass forces through. It is likely that this defense will be tested by one division and then abandoned. This may make it possible to launch battalion or brigade sized night spoiling attacks forward or into flanking corridors in search of his artillery, air defense, and other soft targets. Such infiltration attacks may also be used to precede counterattacks by heavy forces. They would develop intelligence and disrupt the enemy, leading to more effective counterattacks.

URBAN TACTICS

In a large urban area, the above tactics are modified to some degree. The area is compressed, and a platoon may be confined to one or two city blocks. The platoon remains the basic fighting element, and the object remains the same - to cause the enemy to dismount and clear the city systematically. Using light infantry tactics, a relatively small force can deny a city to a large force for a considerable time. The city of Stalingrad, considerably smaller than Frankfurt, swallowed up the bulk of two contending field armies in WWII. Traditional tactics which tie up large defensive formations are not a viable option in NATO today.

The light infantry division could begin with a more traditional "urban web" defense in the suburbs and then melt into a classical light infantry fight within the city.

While artillery, attack helicopters, and CAS will be less effective in this environment, there will be better opportunities for infantry weapons to get flank, rear, and top shots on tanks. There will also be opportunities to use Copperhead if batteries can be aligned with the street grids. For this purpose, as in the close terrain of the operations described above, the 1500m LTC is a better laser designator than the 3000m, but bulky, G/VLLD. In the urban light infantry battle there will also be ample opportunity to use laser guided Air Force munitions as well.

LIGHT INFANTRY DIVISION SCREENING AND COVERING FORCE OPERATIONS

Classical light infantry defensive tactics can be used very effectively to conduct covering force operations in the many areas of difficult terrain near the border.

One approach would be to reinforce the light infantry division with the armored cavalry regiment and one or two 155mm artillery brigades and one or two attack helicopter battalions. The division thus reinforced could occupy all or a large portion of the corps frontage forward. The three infantry brigades on line occupy sectors in the more difficult terrain. The armored cavalry operates on the high speed avenues, fights a more concentrated and tougher delay, and eventually withdraws through the forward brigades of the heavy divisions in the corps main battle area.

The light infantry battalions of the brigades initially shut off the more constricted border exits, backed by ample artillery and attack helicopter support, fighting much as they did in the previous forest example. In addition they also use the TLAT battalion companies and platoons to establish blocking positions to cover the anti-armor obstacles in sectors which are to be sealed initially.

Initially fighting more strongly in some areas than others, the division opens selective gates to control the flow of PACT forces. This better sets up the MBA battle for the heavy divisions.

As the battle progresses the division is forced to sidestep its artillery behind the portions of the covering force still holding. As artillery and attack helicopter support is degraded for the forward brigades, their battalions loosen their grip on the choke points, and move into a more dispersed mode of operations. Even if most of the division's previous combat and combat service support structure has withdrawn behind the forward elements of the heavy divisions, long range artillery and CAS should still be able to support the light infantry screens.

Continuing to harass the lines of communications, a wide screen of OPs reporting on everything passing through the screen, calling in CAS and rocket artillery on high priority targets, and attacking air defense and artillery units in their area, would continue to contribute significantly to the combat power of the corps.

As caches are exhausted, and as ordered, light infantry battalions begin to exfiltrate rearward at night, falling back on preestablished cache sites.

The division base by this time would be establishing itself in the corps rear area to take up the RACO effort as elements of the division's battalions filter back and are reconstituted. Even though it may take some time to reconstitute the full division, the likely casualties are no more than expected after a traditional infantry employment. The contribution they would have made in the meantime make this concept of employment worth considering.

LIGHT INFANTRY BRIGADE COVERING/SCREENING OPERATIONS

Brigade size forward and flank light infantry screens or covering forces in the schemes of heavy division operations are also viable options for classical light infantry employments.

A forward screen would operate much as the division level one described above. It could start initially as a reinforced covering force and then degrade into a screening role as the augmentation is withdrawn into the division's MBA. Initially the light infantry brigade could be augmented with the division's cavalry squadron, one or two heavy battalions, attack helicopters, and additional artillery. The screen can be left forward as long as the division defense remains viable and the cache of supplies lasts. Support requirements for the screen will be minimal. As the light infantry reverts to tactics which require less direct exposure of its soldiers to direct fires, and in its dispersed operations becomes less vulnerable to PACT artillery, even casualty evacuation becomes less of a challenge.

A flank screen could make good use of difficult terrain in the division sector. It could be used to deny access from the flank and to guarantee counterattack routes for an armored brigade. One effective technique would be to establish it behind a forward deployed brigade which withdraws through the screen to become a counterattack force. The flank screen may eventually be on terrain which is forward of the main effort of the defense. Rather than withdrawing the screen, the forward position of the screen may be used several ways. It could provide an access route forward for a counterattack force. It could provide a means for launching night infiltration attacks into the PACT combat support structure within 8-10 kilometers of the screen. Or it could be used to do both. The forward elements of the screen can always be exfiltrated to the rear to take up positions in depth.

OFFENSIVE CONCEPTS

Offensive concepts also fit into the two categories of traditional or regular infantry and classical light infantry. Traditional infantry attacks seize terrain while classical light infantry attacks assist the attacks of other forces by providing information, clearing choke points and creating disruption. Traditional techniques require more firepower and therefore a more detailed integration of heavy and light units at lower levels.

TRADITIONAL TECHNIQUES

Attacks to retake large urban complexes after the enemy has established a foothold follow traditional lines. Light infantry division units are relatively light in firepower and prefer to use stealth and surprise to insure success and cut losses. If neither is possible, then much augmentation is required to achieve success with acceptable losses.

Attacks to retake forested compartmented terrain also follow traditional lines. These areas may not require the massive augmentation required for urban fighting and may not be as heavily held. If they are held in strength, then fighting may be reminiscent of that in the Heurtgen forest of WWII which decimated a large number of our infantry divisions. Stealth, surprise, and more indirect approaches to the enemy may be easier to achieve in such terrain. If the area is not heavily held, and is used primarily as a staging area, then the task will be more easily accomplished.

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Attacks to seize bridgeheads also follow traditional lines. Light infantry battalions are crossed either by stealth using rubber boats, or by helicopter. These crossings should be made at night, relying on the cover of darkness, stealth and surprise to the extent possible. These crossings may be supported by mechanized forces when terrain dictates. The bridgeheads must be quickly expanded and reinforced with anti-tank capability. The greatest threat to light infantry initially will be artillery fire, and counter battery fire will be key to success. As the enemy reacts to the seizure of the crossings, the greatest threat will be armor. Bridgeheads will need to be reinforced quickly with Bradley infantry and then tanks.

LIGHT INFANTRY ATTACKS TO ASSIST HEAVY FORCES

Light infantry attacks to facilitate the attack of a heavy force can produce a great combat power multiplying effect with a relatively small force. They allow the heavy force to generate greater momentum and concentration of effort from the start, thus producing results otherwise requiring a much larger force. The light infantry attacks precede the heavy force attack during the hours of darkness to confirm the IPB, facilitate passage through choke points (out to 10 to 15 km from the LD), find gaps and seams in the defense, block avenues of approach for enemy reserves, fix portions of the enemy maneuver force, destroy artillery, air defense, and command posts, and otherwise disrupt the enemy defenses in sector. Units training at the NTC have for some time now recognized the effectiveness of OPFOR dismounted reconnaissance and disruption. Our light infantry battalions training there have also demonstrated their effectiveness against OPFOR defenses using similar tactics and techniques.

The depth of these attacks is limited to about 10-15 km depending on the difficulty of the terrain, the amount of illumination and the density of enemy dispositions. Light infantry infiltration has been successful to these distances at the NTC through very rugged approaches, into organized defenses, in relatively open desert terrain, under maximum illumination, and against an alert enemy expecting such an attack. By daylight, the light infantry loses its effectiveness and becomes vulnerable, unless extensive smoke cover is provided.

The objective of the light infantry attack is the enemy force, and not terrain. Clear mission statements, commander's intent, control measures and liaison arrangements are required for success. "Goose egg" objectives are not required and may confuse.

The mission statement should read: "_____ attacks in sector to facilitate the attack of the _____ division, beyond phase line gold." If necessary, the mission statement can add specific instructions pertaining to critical choke points such as, "assure passage of _____ through choke points at _____, and _____."

Required control measures consist of sectors and limits of advance, delimiting the area through which the attack is to be facilitated. The heavy force may still have to fight through this area; so measures are required to prevent fratricide. One solution is to have light infantry clear certain avenues of approach by certain times, allowing the heavy force free reign. In addition,

the light infantry can be JPCONed to the heavy force as of a certain time or when a specific event occurs. The heavy force can either be given the entire light infantry sector, a narrower sector through it, or a restricted axis of advance. After the heavy unit has passed through the light infantry sector, the parent light infantry unit can reassume control to consolidate, reposition and resupply light infantry units. The light infantry may need to secure the heavy unit's lines of supply through its sector.

The timing for the launching of the heavy force will usually be at daybreak, but can be earlier if the heavy force is coiled and ready in attack positions, and if the light infantry attacks are successful in creating the desired conditions. As a general rule, one light infantry battalion can cover the frontage of an attacking heavy brigade.

The opportunity to use this technique could arise when the light infantry division is holding a secure shoulder for a counterattack by a heavy division. If the light infantry division is not being pressed, it might be able to use the light brigade it has positioned in depth to launch such an attack in support of the heavy force counterattack. In the same way, if a light brigade is defending forward in a forested, compartmented sector of a heavy division, it might be able to provide a battalion to precede the division's counterattack by the reserve heavy brigade. This type of attack may also be made by a light infantry battalion or brigade stay behind force.

This technique could also be used when the light infantry division is in reserve. The light infantry brigades could be moved forward by helicopter to the vicinity of the LD with their DS artillery without impeding the forward deployment of the heavy forces on the ground. The light infantry logistical support can be left behind to be brought forward after the heavy forces have passed through the light infantry AO's.

LIGHT INFANTRY BATTALION AND BRIGADE LEVEL ATTACK TACTICS AND TECHNIQUES

The light infantry attack can take many forms depending upon the enemy in sector as determined by the IPB. The shoulders of an enemy penetration may be lightly held by a security screen, or it may be held by motor rifle elements in hasty positions. At any event, there will be gaps between elements which can be exploited by light infantry.

One approach in a particular battalion sector would be to lead with a dispersed screen composed of the scout platoon and an infantry company moving in squad sized formations along parallel axes. This screen combs the sector confirming and updating the IPB. It avoids direct fire engagements but calls in artillery fire on targets of opportunity. Its principle mission is to move dispersed, adjusting their routes based on information provided by the many elements of the screen. One company may have the mission of securing a particular choke point, or fixing or destroying a maneuver unit in sector. The other company may be tasked to destroy artillery batteries or air defense sites. An additional rifle company may have been provided by brigade from the reserve battalion to provide a reserve or to attack other targets in sector. Light infantry can also guide heavy forces around enemy positions to facilitate attacks against deeper and more lucrative targets.

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The brigade may follow up with a trailing battalion to attack located, fixed, and by-passed enemy elements which were too large to engage by the smaller units of the leading battalion, and would have been too time consuming to concentrate against in the time allowed. The brigade may also task the leading battalion to only recon and infiltrate through the rear part of the sector and engage the enemy in the far portion of the sector, leaving the nearer targets to the follow-on battalion. Or it may insert elements of the trailing battalion by Blackhawks flying with NVGs along avenues cleared by infiltrating forces and into LZs under observation by infiltrated elements.

An important function of the light infantry would also be to locate and clear obstacles, and to defeat elements covering them. Elements of the sapper company infiltrate with the infantry to accomplish this task and to remain in place to guide heavy elements through or around the obstacles.

Another important function of the light infantry would be to move forward and position stinger teams throughout the sector to protect the heavy force as it moves through at daybreak. In most cases light infantrymen will have to assist by carrying stinger missiles and by securing the ADA teams.

The light infantry will depend heavily upon artillery to destroy, neutralize, and suppress the enemy. By relying on indirect weapons, they will be more difficult to locate and engage with artillery and the numerous direct fire weapons available to the enemy. To be effective each DS artillery battalion supporting a light brigade should be reinforced with one 155mm battalion.

The light infantry will infiltrate with only portable AT weapons. Currently the night infiltration capability of the light infantry battalion is limited by 18 Dragon night sights, or roughly two per platoon, and the number of rounds the platoon can carry. The platoon can also carry the AT-4 to use against lighter vehicles and bunkers. There is a practical limit to the number of Dragon missiles and AT4s the platoon can carry.

One solution not far off is the acquisition of light weight laser designators. Currently, the AV/TSQ-2 (G/VLLD) requires a vehicle to move, and is certainly not able to infiltrate. The AN PAQ-1 (LTD) is a lightweight, 1500m range system which has been in the hands of 7th ID(L) soldiers. Its weight and range would be ideal for these missions. It could designate for Copperhead and Hellfire systems currently available. A ground launched version of the Hellfire has been evaluated with 9th ID. Systems such as these would markedly improve the lethality of the light infantry in all its missions, but particularly in its classic light infantry missions.

Another system which would markedly improve the AT lethality of the light infantry is an AAWS-M. Although a 48 lb weight would make it a difficult weapon to use during infiltration, it would provide far greater payoff for the effort than the Dragon with its limited lethality. It would be an excellent weapon for classic light infantry defensive missions because of its lethality, range, and portability.

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Annex D: Extracts of "Hammer, Anvil and Net"
by Brigadier Richard Simpkin

Hammer, Anvil and Net

• Brigadier Simpkin was a retired tanker, fluent linguist, Soviet expert, author of Tank Warfare, Mechanized Warfare, Air Mechanized, Race to the Swift, etc.

• Came to the proposals in this article because:

-careful study of Soviet style of warfare

-Recognition of power of light forces worldwide against heavy forces. Exploitation of asymmetrics.

-"aim of defense policy must now be to avoid war, but above all to avoid nuclear war."

--"the successful conduct of the defense lies in using the available space not so much to swing the relative strengths in the defender's favor as to gain time for diplomacy."

--"Strategic success for the Western defence may thus come to lie not simply in gaining time but in doing so without placing the attacker in an unduly precarious position."

• He states four objections to the air-mechanized mobile defenses he previously advocated

-affordability out of picture, out of scale for smaller nations.

-concepts contribute to expansion of battlefield, "depth between Elbe and Rhine become only tactically significant."

-"Weakens the classical power of defense."

"defender needs a relative strength so high that, in purely Military terms, he should not be on the defense at all.

-"Mobile defensive concept tends to accelerate the tempo of

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operations rather than slow it down."

° Three approaches to slowing the tempo of PACT forces

1. use mobility denial (strengthen tactical value of defense and increase the "time value" of an area of given depth.

2. "Make some use of all the ground within the available depth."
-both of above "need to be reconsidered in terms of gaining time for its own sake; but they will produce only differences in degree.

3. "The way to achieve the difference in kind-a reduction of the attacker's rate of advance by an order of magnitude and a corresponding increase in his response times-is evidently to force him to bring up massed infantry, dismount them and deploy them on their feet.

--face enemy "with the choice of forcing a passage with armour or clearing through with a substantial force of infantry. The first option presents the risk not only of disproportionate losses but of the few available routes becoming blocked with vehicle casualties. Thus if the level of the threat is high enough to make bouncing a bad bet and the area is too broad to bypass, the attacker has no real choice but to clear through it."

--Effect of ² the Soviet attacker's movement plans are drastic.

--If PACT deploys their airborne and/or heliborne forces for clearance of close and urban terrain they will not be available for planned and operational tasks

--And if the PACT uses their required lift to bring in normal infantry, its specialist troops will be grounded.

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- If PACT moves required normal infantry up by road, these troops can only pass the choke points at the expense of follow--up mechanized waves or logistic support.
- Arillery norms required to support a more deliberate infantry intensive concept imply an enormous ammunition lift.
- Suggest Four elements in the defense:
 - "a Frontier obstacle belt,"
 - "a net drawn across close and urban terrain,"
 - "an anvil of positional defense"
 - "and a hammer-plus tactical and rotary-wing air and, increasingly in its own right, artillery fire."

ANALYSIS OF NORTHAG AREA

- North German Plain
 - neither positional defenses on delaying action will gain enough time.
 - One option use only net/keep him from cutting South.
 - "The only way to keep enemy out may be powerful "air-mechanized mobile defense"/economy of force elsewhere may make this possible.
- Goslar Gap
 - Good defensive ground forward
 - Also good areas back to Paderborn
 - Could use concept for strong defense forward and back to Paderborn
- Kassel Gap (Key to NATO center) (shortest route from frontier to Rhine) (faces Bonn)
 - flexibility (divides in Munden to Frankfurt, another west
 - Much of terrain on all routes has considerable defensive value, but it is superb tank country under all weather conditions.

- ° All three require different defensive postures
 - calls for a concept which permits selection from a wide range of spectrum of postures.
- ° Concept requires all-around or "wide-area" defense
 - tactical reason: guarding against envelopment
 - operational reason: inhibiting lateral and diagonal movements aimed at linking or switching thrust lines (still as strongly favored by Soviets as ever).

DEFENSIVE CONCEPT

- ° Outline Concept (for defense aimed at gaining time)
 - first element is checking enemy on frontier
 - No free play across ground favorable to attacker
 - No easy passage through close country and built-up areas. (Forests, bog, conurbation used to slow, thin and hamper reinforcement before he encounters main defense.)
 - Main defense or "framework battle" must be broad enough to block thrust lines, strong enough to hold at least one deliberate attack, and if possible, deep enough to force the attacker to commit his third wave well before he reaches "operational depth."
 - Counter stroke or hammer.
 - "Within broad concept of slowing tempo and lowering intensity or at least confining high intensity operations geographically-the role of the counter stroke is tactical rather than operational. An operational counter stroke which fails will result in the destruction of the forces used as the "hammer"; one which succeeds may well push the opposition over the chemical or even the nuclear threshold. On the other hand

the classical counter-attack aimed at restoring a defensive position is not enough. The aim should be to reinforce defensive success by a counter thrust in part of the anvil after an attack has been repulsed, catching the enemy off balance between the anvil and the "net"; or better still, if the level of risk and the ground permit, by a hook on to his axis beyond the net area.

- positioned in depth behind anvil astride a good route (preferably a communications node).
- poised for counter-penetration role if anvil is pierced or turned.
- could possibly be reinforced by infantry initially in net

CRITIQUE OF US AND FRG DOCTRINES

° Describes AirLand Battle as an anvil with a double hammer (claims similarity to one he developed in Antitank.)

- One air-mechanized
- One fixed-wing tactical as the other
- "The philosophy on which it is based reflects the ideological aggressiveness and readiness to fight a nuclear war in Europe which characterize current United States policy. It patently aims at obtaining a Military decision rather than re-opening the door to diplomacy.
- "On operational level the concept seems to be geared to the creation of interdiction and attrition targets for tactical air, a bias which has three drawbacks."
 - "May force main ground defence into position which do not make fullest use of ground;

--"it leans heavily on USAF assessments of the air situation, which lie well on the optimistic side of the mass centre of NATO and independent opinion;

--it ignores the view widely held among aviators that not even WARSAW PACT pilots will care to overfly the Soviet tactical air defense."

• Views on Bundeswehr

- "Preaches pre-emptive armoured thrusts to the Oder and the holding of a good deal of armour and the bulk of rotary-wing capability in army operational reserve "...but

- is increasingly constrained to practice a linear positional defence, dangerously far forward, with most of its reserves in counter-penetration and/or counter-attack roles at tactical level.

- FRG authorities and electorate are increasingly aware of the intensity of modern conflict and their potential sacrifices as the battle ground.

"The convergence of operational and tactical concepts so painfully achieved in the seventies has been reversed by the turbulence of the eighties."

SIMPKIN'S RECOMMENDATION

• Frontier Obstacle Zone ("a thorough-going permanent obstacle zone")

- "there seems little advantage in creating manual fortifications, or even in covering the zone with direct fire."

- Meticulous electronic surveillance backed by visual observation to call down indirect fire, fixed and rotary wing air support.

- Case against rests on German political considerations.

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-the use of sophisticated attack mechanisms and anti-clearance devices would be feasible and cost effective.

-might achieve 12 hours delay

-"it would impede debouchment from bridgehead, across the Elbe and from the relatively narrow "gaps" to the South, thus creating targets; produce a concertina effect reaching back down the advance routes to the known choke points, creating more targets; and, over a rather longer period, impose a more enduring constraint on logistic movement. These advantages hold for any defensive concept; they would be enhanced by a concept of which they formed a coherent part."

• The Anvil

"If one is serious about gaining time while ceding a minimum of depth, one is forced to think in terms of a positional infantry defence from prepared positions on the strongest possible ground, with traditional artillery support and anti-tank support from artillery, tank destroyers armed with guns and guided weapons, and a substantial anti-tank helicopter force."

-requires high troop density on favorable terrain.

-accept nuclear attack as calculated risk (in this scheme acceptable because he believes Soviets will either go nuclear initially or in extremis.)

-Chemical threat easier to deal with in positional warfare than mobile

-Although infantry anvil can hold less frontage than air-mech force of similar strength in men, it would offer greater endurance and requires less back-up in depth.

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- ° Nub of Argument. "Given a purely defensive role, a piece of territory of a fixed size and shape, a certain number of men and a ceiling on equipment cost, which approach can gain more time?"
- ° Anvil, hammer, and net are complimentary and their relation merits depend on the ground.

ANVIL

- ° Requirements of infantry anvil
 - good defensive ground in classical sense.
 - Close-in fields of fire to accommodate short range inf weapons (reverse slopes, etc.)
 - Combined with order of magnitude greater fields of observation and fire forward for surveillance systems and long range primary anti-armor systems.
 - Beyond these longer fields, but close enough to influence the main defence should be "a stretch of bad tank country in which the "net" can operate.
 - "Even more important than deep frontal protection is the need to avoid being by-passed or enveloped." Must block a tactical defile.
 - could be topographical defile
 - or"converse-high, open ground between two steep-sided wooded valleys such as one finds in the Sauerland in the Black Forest."
 - "Net" should be able to seal the flanks of the main position as well as cover its front.
 - Provides the "net" with a means of withdrawal and redeployment.
 - contains armor to conduct CATKs to restore defensive positions.

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HAMMER

° The Hammer requirements

- Classical counter attack force
- passes through or around the main position and attacks the enemy
 - in the gap between "anvil" and "net"
 - or for greater risk but higher return, beyond this area.
- Not to be frittered by bn sized attacks to restore defensive positions, "minimum composition is the classical armoured brigade with the addition of a rotary-wing element and mobile air defense, both permanently assigned."
- It's role is tactical, not operational.
- "For reasons I have flogged to death elsewhere, I remain absolutely convinced that, in general terms, a balanced armor-infantry force is theoretically more powerful than any other combination; but I am equally convinced that such a force in turn requires to be balanced by an equal and separate force of dismounted infantry."
- Ability to launch hammer depends on anvil holding. (Secondary role of hammer force will be counter-penetration if anvil battle goes badly.

NET

° The Net ("a means of getting the best out of terrain which is unfavorable either to the defence, or to attacker and defender alike.")

- Light infantry platoon with FO is key unit, reinforced with sappers as mobility denial party.

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- Do not hold ground.
 - inflict delay and casualties
 - force enemy to clear through area with dismounted infantry.
 - Calls an artillery and fixed and rotary wing aircraft air attack
 - Uses engineer techniques to block, mine, and booby-trap minor defiles and forest trails.
 - Ambushes at communication nodes or critical defiles (With Arty, ATK Hel, CAS) support.
 - Tank hunting by small mobile tank Killer Tms.
 - Reinforced platoon would field
 - One Ambush force (plt Hq, and reinf squad)
 - Six-three man tank-hunting parties
 - One three-man OP
(all have commo/we would have problem here)
 - Must receive warnings of fires and air strikes in their area
 - All would hit and run
 - Density of one platoon per two 1 Km grid squares (2 Km wide and 1 deep)
 - If each ambush accounts for one motor rifle platoon, and each tank killer team 1 tank, effect on battle would be dramatic.
 - "The clue to this whole business lies in attitude of mind and training."
 - Junior officers must have the character, skill, and knowledge to make sound decisions;"
 - "Specialist NCO's must perform tasks traditionally reserved for officers;"

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--"And above all men must be trained to operate clandestinely in small groups with complete confidence, and if needs be to survive, evade, and escape on their own."

-Redeployment of the Net(Tactical and Operational)

--"No point in deploying a net not likely to encounter enemy and in turn if it does not form a part of a coherent defence."

--"detailed coverage of unlikely and potentially unfruitful approaches, as of urban areas, is essentially job for the locals in the shape of some kind of militia.

--"Given this restriction, a net force is likely to 'fulfill its norm' in its initial area. Most of the men may well escape, but the immediate availability of the force for re-deployment is a bonus.

--author looked at providing light APC as an escape but remains convinced this is a pit fall.

--helicopter extraction off lines of drift is possible.

--"Provided that enough troops are allocated to the net and deployed at suitably low density, the net can become a "network." Each platoon would be within a minimum of an hour or two march of another.

--"For this reason as well as the need for a special modus operandi; I do not see these net forces as a kind of fighting patrol or raiding party sent out by forward units of the main positional force. I see them as separate units, or indeed formations, linked to the anvil and the hammer at whatever level coordinates the defence--probably division."

--Suppose for instance that one has two layers of an anvil position, and a net on the shoulders of the defile to either side of it. Then the foremost layer extricates itself into the second forward layer and thence to one on both flanks of the anvil, while the second layer, which may stay in position rather longer after contact, breaks sideways clear of the thrust line and thence to the flank units. From there it can be extricated and redeployed by vehicle or helicopter.

ANNEX E, Augmentation Issues

DISTINGUISHING BETWEEN AUGMENTATION AND SUPPORT

It is important to distinguish between augmentation and support. Often the two are confused when discussing the needs of the light infantry division. Augmentation is attached and therefore not available to other units for a considerable time. Support is provided on a need basis and remains under the control of the headquarters providing the support. This report distinguishes among:

- ° Support which is provided to any division.
- ° Additional support which may be required by the light division from time to time.
- ° Augmentation which is peculiar to the light infantry division and necessary in a particular mode of employment.

CORPS SUPPORT PROVIDED TO ANY DIVISION

The easiest to deal with is the support normally provided to any division. This will be provided by Corps no matter what type division is provided to the corps. Planners will find that the demands of the light infantry will be relatively less than heavy divisions in these areas because of the divisions smaller strength, lighter and fewer equipment, and because often it will be in a supporting role.

ADDITIONAL OR SPECIAL CORPS SUPPORT

The light infantry division requires additional or special support in some areas under certain circumstances. It will generally require more support in traditional infantry roles, than in classic light infantry roles.

Fire support. Because the light infantry division is short on long range high caliber artillery it will need one or two more battalions of reinforcing artillery of 155mm caliber than other divisions and similar circumstances. If the 105mm battalions are converted to 155mm during POMCUS drawing, then one additional battalion will suffice, however, there is a cost. The time required to transition 105mm gunners to 155mm must be considered if time is important in getting the division into sector. The additional logistics requirements within the division (PLL, maintenance, transport for weapons and ammunition will require more 5-ton trucks and Chinooks rather than Blackhawk) would cause severe changes in the division's mode of operations.

Engineer support. The divisional engineer battalion is small and lightly equipped. On the other hand the workload is also lighter. Mobility tasks are

lighter because fewer lighter vehicles are required to move far less tonnage over shorter distances, and enemy obstacles are less of a hindrance to operations. Counter mobility tasks are important to the division's operations, but two factors compensate. The terrain the division should be committed in will require less alteration. The soldiers in the light infantry battalions are capable of laying mines and stringing wire obstacles with sapper advice. Survivability tasks are also important to the division, but there is less to dig in. The division has no bridging and needs such support when the situation requires. Most employment of the division will require the support of one reinforcing engineer battalion which should be no more than if the same mission were given to a mechanized battalion. If time is critical in getting the light infantry division prepared to fight in a defense, additional engineer support will be necessary beyond this.

Air Defense support. The division air defense battalion is also small and lightly equipped but adequate to the task in most instances when employed within the theater air defense system. The division is smaller and has less to protect. While the priorities in a heavy division tend to be maneuver, command and control, and then logistics, the priorities in the light division tend to be reversed. The light infantry battalions make difficult air targets whether stationary or moving; command posts tend to be small; and logistics areas are the most vulnerable. Protection for artillery batteries is also a high priority. Since the highest priority targets are toward the rear, the air defense problem is diminished compared to a heavy division. To the extent that the light infantry division is employed in traditional infantry roles, the problem of air defense is increased and more support will be required. As more light infantry is concentrated in strong points and fixed positions recognizable from the air, the more air defense is required forward. When a heavy brigade is attached, a slice of air defense should come with it. This will also be necessary for supporting aviation and artillery.

Intelligence Electronic Warfare support. Employed in traditional infantry roles, the division requires no less and no more intelligence than the heavy divisions. In classic light infantry employments, it requires no less than other divisions, and it can be a net provider of intelligence. The division may be able to benefit from additional ELINT and Jamming support.

NBC. The division has no organic chemical company and will require chemical support from corps units if no augmentation is provided. On the other hand the division has far less equipment which would need to be decontaminated, and most of that would be located in the division rear area. If a heavy brigade is attached, a chemical company slice should accompany it.

Aviation support. The light infantry division has an air cavalry squadron, an attack helicopter battalion, and 2 light companies of 15 Blackhawks each.

Lift support. The division has 30 Blackhawks. The second combat aviation company was added to augment the sparse ground transportation of the division. Additional lift support will be required from time to time if a battalion or more needs to be air assaulted at one time or if elements of the division are to be moved rapidly.

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Attack helicopters. Attack helicopters can be especially effective when employed with light infantry. The division has one attack helicopter battalion which represents a large part of its tank killing power. There will be occasions when the division will need to be supported with an additional battalion of attack helicopters if it is hard pressed especially when it is not augmented with a heavy brigade.

Combat Service Support. While the combat service support structure of the division is austere, there are important compensating factors. Total tonnages required to support the division and end items requiring repair are greater in a heavy division by a factor of two or three. The other factor needing consideration is that the tempo of support in the light infantry division tends to be cyclical and more so in classical light infantry employments. Prior to combat, activity peaks sharply; during combat, it drops off greatly and increases again during a recovery period. While this cycle is typical of all units, it is far more pronounced in the light infantry division. During preparation for defense, classes of supply are moved forward and cached in unit areas. End items are repaired and exchanged during the prep phase. During combat, very little moves up into battalion areas and very little gets evacuated because of the nature of light infantry combat. Much damaged equipment will be difficult to evacuate from forward areas and will need to be replaced. Therefore, corps support requirements will be heavier during the preparation and recovery phases. Except for some special needs of the light infantry division, total support requirements may not be more than regularly required by a heavy division.

Transportation. Depending on the location of the arrival airfield, more or less truck or aviation support will be required to move the division. Depending on the availability of its organic Blackhawks, 200-300 truck sorties will be required to move the division. During the preparation of the defense, the division will require support equivalent to 3-4 additional truck companies and will need to have supplies delivered as far forward as possible. As mentioned earlier, the two combat aviation companies can relieve the stress on the ground transportation assets of the division. The transportation demands of the division will always fluctuate in a cyclic pattern. Host nation support, shuttling, and some foot marching should also be considered in planning moves.

Maintenance. Less equipment to maintain and fewer types of line items compensate for the austere maintenance structure. The light infantry design calls for stringent repair time limits beyond which items are passed back to corps units and like items issued to the user in exchange. It is not clear that this will result in a greater work load on corps units than the back-up support required for a heavy division in sustained modern combat. Several small additional maintenance detachments are required to support this division in mission, aviation, and end item preparation.

Medical. There is no doubt that the medical system is austere in the light infantry division and that infantry casualties will be heavy, especially in the more traditional infantry employments. The extent to which additional corps support can help is not clear. The principle problem in the light division will be the dispersed nature of operations and the difficulty of evacuating casualties to the BSA. From the BSA rearward evacuation support may be helpful,

but the crunch in medical support will be forward of the BSA. Here modular reinforcement forward of the BSA from the medical battalion and reinforcement of the medical battalion from corps may help. Thus, here again it is unclear that the light division will place greater demands on the corps system than a heavy division.

Classes of supply. An additional supply detachment will be required to support the division.

CL I. The division is geared to feeding MRE and T-rations. In the preparation phase the feeding of T-rations will be possible for all units; however, during combat operations, forward units will only be able to eat MREs because of the mode of operations. Furthermore, during that phase, the forward battalions will have to stockpile up to 5 or 6 days of MREs and possibly more for classical light infantry operations. Therefore, the system of drawing rations from corps on a daily basis will not work. The rations draw will need to be periodic and frontloaded. Another weakness of the system is that the design eliminated the normal ability to prepare A or B rations. However, A and B rations can be prepared for units on a rotating basis for morale purposes as a break from MREs and T-rations. Planners need to take this into account.

CL II. Clothing exchange and bath support will be required when opportunity permits since there is none organic. The tempo of operations in Europe will make this an infrequent luxury during lulls between operations. Since this type of support will be so infrequent, it would also not place a burden on corps resources. The division will need support in moving forward stocks of NBC protective clothing. Since light infantrymen will likely place more wear and tear on their protective clothing, greater usage factors are likely to occur.

CL III. Storage capacity is designed to give the division a 48 hour supply of fuels, and the division has no 5,000-gallon tankers; therefore, additional support will be required from corps. The quantity of fuel required to keep the division fueled is a small fraction of that required to fuel a heavy division, therefore, it is not likely to make a large impact on corps capacities.

CL IV. of CL IV required of many employment concepts. This support will be required during surge periods and during preparation of defenses. Corps support will be required to move CL IV in preconfigured loads at least as far forward as CL IV stockage points in brigade areas. Ideally, it should be moved to battalion worksites to minimize handling and to speed preparation time.

CL V. Ammunition will be issued by through-put as much as possible and at least to BSA ATPs. Once again the quantities of ammunition which the light infantry division can expend is much less than a heavy division. A significant difference, however, is that small arms ammunition such as 5.56mm and 7.62mm are high usage items in the light division and need to be through-put to the brigade ATPs as well. This class of supply will also be required to be front-loaded during the defensive prep phase and will be stockpiled in unit caches to the extent possible. For the combat maneuver units, only emergency resupply will be possible during active combat.

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CLVII. Corps support will be required for preparation of end items so the division receives the equipment ready to use. More equipment will be passed back for repair in exchange for float items, but the number of types of items will be limited to those that are combat essential. This support will also be required in surges rather than at a steady rate. The first surge will come after the first lull in the battle and will depend upon the extent to which the division has been pressed. After the first surge of demand on Cl VII, there will be a pause in demand until the next opportunity to exchange items.

CLVIII. Stockage levels for medical supplies are reduced in the light division compared to heavy divisions, and provisions need to be made to move supplies forward on an emergency basis during peak periods.

CL IX. Because of the division's limited maintenance capability, the demand for CL IX support should be far less than a heavy division. Problems may occur in division unique items of equipment such as 60mm mortars and motorcycles.

Water. There should not be a requirement for water support from corps.

Field services. Corps will need to provide field services such as graves registration, clothing and bath, salvage, laundry, and airdrop support as required. These should not be greater than required for a heavy division.

AUGMENTATION

Augmentation requirements depend upon employment options to some extent, but there are some requirements which are dependent strictly on the theater of operations. Augmentation will be defined here as necessary long term attachment.

Maneuver and anti-tank firepower. Employment options will greatly condition the requirement for augmentation in this area. Classical light infantry employments will require far less.

Maneuver. Almost any traditional or "regular" infantry employments will require some form of heavy counterattack force. The ideal solution would be one of the separate brigades which provides a self contained and balanced combined arms package with adequate combat service support capable of tapping into corps. This is what the light division designers had in mind. In lieu of this a cross attachment of brigades within a corps would also work. Although it is important to realize that the light division cannot be fragmented and provide enough resources to allow its brigades to be semi-independent, some cross attachment is possible and advantageous.

In several instances a brigade of the light division can be detached to another division. While the division is not divisible by three, one brigade can be detached without great loss of effectiveness of the support structure.

The detachment of separate battalions from the detached light brigade support structure can be a problem if done in haste, because several logistics functions are consolidated at brigade level (e.g. mess and maintenance). While battalions should not normally be detached from the parent light infantry brigade, OPCON

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arrangements of about 24 hours have worked well. When time is available and a longer term attachment is desired, it is possible to augment a light battalion with maintenance, mess, PLL, and preconfigured ammunition.

In some employment concepts it may be useful to employ a heavy battalion in support of a detached light brigade as a counterattack force. There are several support concepts which will work especially if there is time to coordinate and make arrangements. The best solution is probably an OPCON relationship in which support is still provided by the adjacent heavy brigade. The detached heavy battalion will require CL III, CL V, maintenance, and recovery assistance.

Anti-tank Firepower. All traditional infantry employments will require increased anti-tank firepower which can be achieved several ways.

The division can be augmented with a TLAT battalion. Less than a full battalion is not advisable because the attachment would be permanent and splitting a battalion would not be wise. Also, the need is great enough to justify the full battalion. There are, however, several problems with this concept. First, these units are in the reserve components and would not be available if we are contemplating early deployment of the light divisions. Second, the state of training of these units makes them of questionable value immediately after mobilization. Third, add to this the value of TOW against modern armor. If the TLAT option is to be made more attractive, then they should be aligned with the light divisions, and at least habitual training relationships should be established. They should also be POMCUSed.

An interim solution is to plan to attach an additional heavy battalion to be used to reinforce the anti-tank firepower of the light infantry when employed in archipelago style of defense.

The arrival of the AAWS-M would greatly reduce the need for both options above in much of the terrain the division would be employed in. The 2000m range of that weapon distributed on the same basis as Dragon would probably provide at least equal capability, if not more, than the augmentation of the division with a TLAT battalion. A greater number of AAWS-M could be absorbed in the light infantry battalions without an increase in manpower just as battalions can now expand their Dragon capability from 18 to 36 by using both day and night sights. The engagement ranges in the terrain the light infantry divisions are likely to be employed make a 2000m weapon as effective as a 3000m weapon given equal lethalties.

Another way to give the light infantry divisions a big plus up in tank killing power fairly quickly is to provide the AN PAO-1 (LTD) light laser target designator for every FO party and add a ground mounted Hellfire company to every brigade. It would be worth giving up the four TOWs per battalion to get them if a 2000m AT weapon was in the hands of the company AT sections. This combination would multiply the potency of the light division several times over in both traditional infantry and classical light infantry roles, but the effectiveness of the classical light infantry role may be multiplied even more because the light infantryman could be more potent with a very minimal signature with the laser guided weapons.

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Artillery firepower. The requirement of artillery support from corps has already been addressed, but the issue of augmentation remains. There appears to be no possible employment of the light infantry division in which it would not need at least one more 155mm battalion. In several of the CENTAG employment scenarios, the light infantry division may not be able to draw on Corps artillery assets to meet its minimum needs.

If the light infantry division is to be deployed early and moved into sector quickly then the issue of the conversion of the 105mm battalions to 155mm (towed) battalions should be examined. One concern is the availability of 105mm ammunition. The other is the flexibility and usefulness of 155mm ammunition versus the 105mm crews of the same proficiency. A fourth is the great change required in the division support structure from the battalions back up to the DISCOM to support the reconfigured battalions. In a rapid reinforcement scenario, it might be better to leave the battalions as 105mm battalions and augment the DIVARTY some other way. This issue should be reexamined in depth.

One way to augment the DIVARTY is to attach a 155mm battalion from one of the corps brigades. This is undesirable because of the support arrangement which will be required.

Another way is to deploy one of the corps towed 155mm battalions from CONUS and have it fall in on POMCUSed weapons. In the case of the 7th ID(L), one such battalion shares the same post. A habitual working relationship is already established. Support arrangements would be manageable with limited augmentation.

Air defense. This topic was already addressed under the subject of additional support. Under normal circumstances air defense augmentation should not be required in Europe provided that attached heavy brigades come with an ADA Slice.

NBC. Augmentation with a chemical company should be normal, and a chemical company stationed at Ft. Ord should be deployed with the 7th ID(L).

Mobility, Countermobility, and Survivability. Engineer augmentation should not be necessary if normal corps support is available. Consideration should be given, however, to increasing the size of the direct support sapper companies to three platoons to provide each infantry battalion with a DS platoon. Both traditional infantry and classic light infantry employments in Europe will depend heavily upon the use of sapper expertise. Planners should also know that the infantry battalions have no pioneer tools on their TOEs. Experience at the NTC and JRTC indicates that each squad should have at least two picks and two shovels to dig in quickly and effectively. These must either be provided in Europe or the light infantry divisions must be told to deploy with them.

Combat service support. Augmentation in the sense of attachment should not normally be required in the CSS area. The possible exception would be the requirement of an attached truck company if the division is assigned a RACO mission and the trucks are required to provide transportation on a no notice basis. Some augmentation may be necessary if the light infantry divisions are employed in German corps areas and cannot be supported from an adjacent US Corps.

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