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THE ARMY FIELD MANUAL

VOLUME II

GENERIC ENEMY (BASIC FORCES)

PART 2

TACTICAL DOCTRINE

1995

Prepared under the direction of the Chief of the General Staff

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GENERIC ENEMY BASIC FORCES

GENFORCE

1. The purpose of the Generic Enemy Force (GENFORCE) is to provide a basis for the generation of enemy forces for all except the most specialised training needs. It is designed to be used flexibly, in a modular fashion, to craft enemy requirements for training.

2. GENFORCE offers three types of artificial, yet challenging and realistic, opposing force options. It will be issued in a series of three packages:

   Basic Forces: This enemy has heavy and light armoured forces, predominantly equipped along Former Soviet Union (FSU) lines. Its Tactical Doctrine and Operational Art are modelled on a revision of Army Field Manual Volume II.

   Mobile Forces: This enemy is futuristic, more advanced in terms of equipment and Tactical Doctrine, with an Operational Art geared towards less dense battlefield scenarios.

   Rest of the World Enemy (ROWEN): This composite enemy has a broad range of equipments of mixed origin. Its Tactical Doctrine and Operational Art are designed to support specific operational environments: normal, desert, mountain, FIBUA and jungle.

GENSCEN

3. The Training Support Team at the Combined Arms Training Centre has developed an evolutionary scenario generator (GENSCEN) to be used with GENFORCE. GENSCEN will provide a range of country/infrastructure options to supplement and bring to life the GENFORCE selected for a particular exercise. Background information is provided in a format similar to real-life intelligence documents, including a selection of country briefs, with options for political and military personalities and supporting data in a variety of forms.

BASIC FORCES

4. The first of the three GENFORCE packages, **Basic Forces**, is issued in three separate folders as follows:

   Part 1 - Operational Art
   Part 2 - Tactical Doctrine
   Part 3 - ORBATs and Tables of Organisations & Equipment

5. GENFORCE Basic Forces supersedes Army Code 71357 for training. However, the latter publication should be retained and will remain available on demand.

CHAPTER 1

GENERAL PRINCIPLES

SECTION 1 - THE GENFORCE ARMED FORCES

1001. ***General.*** As a major land power, with extensive borders, GENFORCE has always possessed a large and formidable army. GENFORCE military doctrine has been largely written by ground forces' officers and the other armed forces have generally been held in lesser esteem. The land commander has traditionally held overall command in joint operations.

1002. ***Equipment.*** GENFORCE is a major industrial power and has been able to supply its armed forces with well-designed, rugged and reasonably up-to-date weaponry.

1003. ***Manpower.*** Because of the size of the country and its army GENFORCE has always relied on conscription to fill the ranks of its armed services. Its officer corps however is a professional and well-educated body, trained in excellent military colleges and academies. As military technology becomes more complex, the proportion of long-service soldiers in the ranks is growing.

1004. ***History.*** GENFORCE has a long and distinguished military history which remains a source of pride to the country and its army and is the main data base on which its military doctrine has been developed.

1005. ***Terrain.*** Most of GENFORCE's wars have been fought on a very large scale over comparatively featureless open terrain. As a result GENFORCE military doctrine emphasizes mass and manoeuvre. Its armed forces have relatively little experience of operations on other sorts of terrain.

SECTION 2 - TACTICAL PRINCIPLES

1006. ***Tactics and Operational Art.*** As explained in Part 2 - GENFORCE Operational Art, Chapter 1, in GENFORCE doctrine tactics are subordinate to operational art. Success at the operational level is considered the key to victory. It is therefore not surprising that GENFORCE principles of operational art and tactics are, in outline, identical. These principles are discussed in detail in Part 2 but, for convenience, are briefly described below.

1007. ***GENFORCE Tactical Principles.***

a. *Selection & Maintenance of the Aim.* The mission set by the senior commander will determine the aim to be achieved. Once that has been identified, every effort must be concentrated on its achievement within the time allocated.

b. *Surprise.* Surprise is crucial in winning the initiative and throwing the enemy off balance. The basic planning of concealment and deception takes

place at the operational level; tactical commanders must conform to that plan. At the tactical level there is usually neither the time nor the resources for complicated schemes and the enemy may be surprised by simple techniques, such as speed of movement and reaction, feints, the use of smoke or an unexpected axis.

c. *Activeness and Speed.* Tactical commanders operate under constant pressure of time; delay permits the enemy to recover his balance. The use of tactical drills permits the commander to use his initiative to achieve the operational objective.

d. *Concentration.* The application of superior force at the decisive time and place brings success and can be achieved by manoeuvre of forces and fire, deception and skilful tactical grouping. The need to identify the decisive axis and concentrate force on it is deeply ingrained in GENFORCE tactical commanders. Economy of force is vital to this end and to share assets equally among sub-units is alien to such commanders' thinking.

e. *Action Throughout the Enemy's Depth.* GENFORCE commanders are expected to use the firepower and mobility of their resources to the full to strike their immediate enemy in depth. They equally expect their senior commanders to use them in deep operations, for example, as raiding or forward detachments or as air mobile forces. Thus they are accustomed to the idea of fighting out of direct contact with friendly flanking or follow-on forces.

f. *Realism.* The very detailed tactical and logistic norms developed by GENFORCE help commanders to avoid the twin errors of over-tasking their troops or wasting resources.

g. *Coordination.* Modern combat is a combined arms battle in which it is the commander's responsibility to ensure that his own, attached and supporting forces work effectively and efficiently to achieve the aim.

h. *Preservation of the Combat Effectiveness of Own Troops.* This heading covers a wide range of activity, from active and passive measures to protect one's forces from enemy attacks, through logistic support and the maintenance of morale, to action to restore combat capability after enemy strikes.

SECTION 3 - COMMAND STYLE

1008. ***Image of the Battlefield.*** Part 2 - GENFORCE Operational Art has described the image of the modern battlefield which dominates GENFORCE thinking. It is an increasingly open scene, with no clearly defined front line, no secure flanks and no safe rear areas. The forces of both sides will inevitably be intermingled over wide fronts and in depth. GENFORCE believes that its doctrine and command style are well suited to this sort of battlefield and it is attempting

to exploit modern information technology to support commanders fighting fast-moving and rapidly-changing battles.

1009. ***The Role of the Commander.*** At every level, GENFORCE commanders have sole responsibility for the fulfilment of the mission. Although this focuses decision-making it can also discourage subordinates from acting independently. Because of the stress on the operational level of command, tactical commanders are often quite junior and may lack the experience of their counterparts in the British and other western armies. Initiative is not discouraged in junior commanders but it should be exercised strictly in accordance with the senior commander's plan. At the most junior levels of command, officers cannot easily delegate to their mostly conscript junior NCOs and can be overwhelmed by the weight of routine administration.

1010. ***Use of Drills.*** Tactical drills are widely used by GENFORCE in order to alleviate some of these problems. The advantages of drills are:

a. *Training.* Drills can be most easily taught to conscript soldiers, saving training time.

b. *Planning.* The overload on junior commanders is reduced by simplifying the planning and organization process.

c. *Flexibility.* By using standard drills throughout the ground forces, GENFORCE makes it easier for sub-units to cooperate with each other and for higher levels of command to re-group their forces as the battlefield requirement changes.

d. *Speed.* The times required for battle preparation, deployment and changing plans are all reduced by the use of tactical drills.

1011. ***The Commander's Decision.*** Everything in the GENFORCE system stems from the commander's decision. The decision-making process begins when the commander receives a combat order or warning order from his senior commander. His first steps are to clarify the mission and assess the situation:

a. *Clarification of the Mission.* The commander must understand the senior commander's concept of battle and his own unit's role in it. At this point he also makes a time appreciation and, through his chief of staff, sets in train any measures which are immediately required and issues warning orders to sub-units.

b. *Assessment of the Situation.* The assessment is conducted in the sequence: enemy forces; own forces; flanking forces; terrain; chemical situation; weather and time of day.

1012. ***Components of the Decision.*** Having clarified his mission and assessed the situation the commander makes his decision and marks it on his map. The components of the decision are:

a. *Concept of Battle.* The commander specifies which enemy groupings are to be destroyed, with what resources and in what order; the sector of main effort; the organization of combat groupings and the general plan for manoeuvre, concealment and deception.

b. *Tactical Missions.* These are laid down for organic and subordinated sub-units.

c. *Coordination.* The commander indicates objectives, phase lines, targets and timings.

d. *Organization of Service Support and Command and Control.* Often these questions are left to the chief of staff. Indeed, when time is limited, the commander confines himself to defining the most important objectives and everything else is left to the staff, who then produce their plans for the commander's approval.

1013. ***Putting the Decision into Practice.*** The decision must first be reported to the senior commander for his approval. The decision is then passed to subordinates and the chief of staff translates it into fuller plans and orders. Detailed instructions for cooperation and coordination are produced. Up to this point the commander will be working primarily from his map. If time permits the decision will now be refined on the ground. The commander may attend the senior commander's ground reconnaissance and then study the ground with his own sub-unit commanders. In the GENFORCE view to conduct ground reconnaissance before making a decision would be to waste valuable time. The decision may be modified as a result of the ground reconnaissance and then verbal orders will be given. The commander supervises the preparations of his subordinates, either personally or through his deputy or chief of staff. At the appointed time he reports the readiness of his unit to the senior commander.

1014. ***Tactical Norms.*** GENFORCE has devoted a great deal of effort to analysing past wars, modelling future ones and thus developing mathematical norms expressed in calculations, charts and nomograms and, increasingly, programs for computers and electronic calculators. Although these may seem over-formal to outsiders, the use of these tools speeds the commander's decision-making process and the work of his staff in developing his plans. It is also an approach which lends itself to the use of automated command systems.

1015. ***Command Posts.*** It is in keeping with the GENFORCE view of the personal significance of the commander that the term "command post" is used, rather than "headquarters". From divisional level downwards GENFORCE command posts are generally smaller than the equivalent British headquarters. In part this is because the logistic responsibilities of GENFORCE command posts are rather less than the British counterparts. It is also a consequence of the command style outlined above and a requirement of the GENFORCE image of a fast-moving battlefield.

TABLE 1-1: DEPLOYMENT OF DIVISIONAL AND REGIMENTAL COMMAND POSTS IN THE ADVANCE

Command Post	Distance from FLUT (km)	Number of Vehicles	Deployment Area (sq km)	Remarks
Divisional FCP	2-5	About 10	Approx 0.2	Moves constantly with first echelon unit on the main axis.
Divisional CP	10-20	About 70	Up to 10	Usually deploys between first and second echelons and moves up to 2-3 times daily.
Divisional ACP	10-20	About 3	Up to 8	As for main. Often not formed in the advance.
Divisional RCP	30-40	About 16	Up to 5	Deploys with logistic elements and moves up to 2-3 times daily.
Regimental FCP	2-5	About 4	Approx 0.1	Moves constantly with first echelon sub-unit on the main axis.
Regimental CP	5-8	About 17	0.4	Usually deploys between first and second echelons. Moves by bounds behind first echelon.
Regimental RCP	10-15	About 10	0.2	Deploys with logistic elements.

Notes:

1. Figures are yardsticks only. The distance of a CP from the FLOT and the frequency of its moves will depend on the tempo of combat.

2. Within CPs, dispersion is practised to reduce vulnerability. Communications centres are remoted several kilometres away to lessen the chance of enemy DF activity leading to location of CP itself. CPs are sited so that no single tactical nuclear weapon will eliminate more than one.

3. The protection of CPs by air defence troops is a high priority, and engineer support is usually available to dig in and help camouflage key elements. Ideally they are sited near second echelon/reserves to gain protection from ground or heliborne attack.

1016. **Command Post Deployments.** The deployment of CPs at divisional and regimental levels is summarised in Table 1-1.

a. *Command and Observation Post (COP).* Formed at battalion, company and platoon levels only and it is the only headquarters element at those levels of command. In the attack from the march COPs are generally vehicle-borne, but in defence and in an attack from close contact COPs may be dug-in positions. The battalion COP consists of the commander's and chief of staff's vehicles and may include the signals platoon vehicle. The commanders of attached sub-units (especially artillery) are expected to be co-located with the COP of the battalion or company they are supporting.

b. *Command Post (CP).* At regiment and division, this is the focus of control. The CP is run by the chief of staff, who directs the formation/unit staff in translating the commander's decision into plans and orders. It also coordinates the movement and deployment of all subordinate groupings and monitors their progress and combat fitness including supply states. Selected staff officers, thoroughly briefed in the commander's concept, are frequently sent to subordinate units and sub-units to ensure that they understand and implement its spirit. The CP usually deploys between the first and second echelons, but it is not constantly on the move like the Forward CP. No Step-Up is formed. When the CP moves, it either retains control while on the march, or the Forward CP temporarily assumes the full burden.

c. *Forward Command Post (FCP).* Commanders are most concerned that their decisions are based on the most up to date and accurate evaluation of the situation. To this end, they form a small armoured FCP comprised of their most important advisors (chiefs of the operations, intelligence and signals staffs, the chief of artillery and an air force representative) and communications means. The FCP moves with the first echelon on the main axis. The commander is thus able to acquaint himself with the situation on the key sector, including the nuances that are filtered out in second-hand reports and to react immediately to developments. He can issue orders in person, ensure that they are understood, personally supervise their execution and monitor progress. Regiments do not always form a FCP, probably because of limited manpower and equipment. However, a regimental commander will use a FCP whenever he feels that his personal presence is crucial to tactical success.

d. *Alternate Command Post (ACP).* Not found below divisional level and only sometimes created by divisions, most commonly in defence. It is a reserve CP, established at reduced manning levels, to assume control if the CP is destroyed. It deploys laterally from the main CP. ACPs are also formed when operating in exceptionally difficult terrain, if the division is dispersed over a wider area than usual and lateral communications are difficult.

e. *Airborne.* In very fluid situations, or to maintain control when the CP moves, an airborne CP in a helicopter such as the HIP-G may be used at divisional level.

f. *Rear Control Post (RCP).* From this CP, which is located in the area of the rear services (ie logistics) elements, the chief of the rear organizes logistic support for a concept of battle he receives from the CP. The CP keeps the RCP fully and continuously informed of operational requirements and RCP, in turn, keeps the CP abreast of supply states.

1017. ***Observation Posts (OP).*** Observation posts are normally reconnaissance elements deployed within the battalion. However, divisions and higher formations and higher formations may create OPs as command and control elements. They will be deployed primarily away from the main axis to provide the staff with up-to-date information on the progress of operations. They are manned by a small number of officers from the main staff, with communications means. In static operations the commander may visit the OP to reconnoitre the ground himself.

SECTION 4 - COMMUNICATIONS

1018. ***General.*** GENFORCE communications reflect the concern of commanders to maintain uninterrupted troop control, flexibility and security.

1019. ***Division and Regiment.*** GENFORCE signals troops use radio relay with HF back-up and encryption facilities from regiment rearwards. Several nets are created to cope with the expected volume of traffic and still provide a degree of flexibility and redundancy in case of interference through physical or electronic attack.

a. *Command Net.* This net, which is duplicated when a forward CP is formed, links the commander, chief of staff and alternate CP to all major headquarters and supporting units. Use is made of skip-echelon working, ie enabling the commander to talk "two-down". This allows the commander to exercise direct control over key subordinate groupings, eg a divisional commander may establish such a link with a forward or heliborne or outflanking detachment of battalion size. Such links may also be used to maintain control if an intermediate headquarters is put out of action, though the necessary re-configuration of the net would be accompanied by some delay.

b. *Staff Nets.* Certain principal staff officers, notably the chiefs of artillery, engineers, reconnaissance, air defence, aviation, chemical defence, and the rear, have dedicated nets to ensure the uninterrupted flow of information and orders. They also provide back up nets if the command net is interrupted or overloaded.

c. *Coordination Nets.* These are established with flanking and second ech-

elon or reserve formations and with any groupings performing special missions in the division or regiments's area of responsibility, such as air assault units, or forward detachments.

d. *Warning Net.* A net devoted purely to air and NBC warning and the passage of meteorological data is established down to battalion level.

1020. ***Battalion.*** The organization of battalion radio nets will depend on the type of operations. In the advance and when attacking a weak enemy, all battalion vehicles will probably be on the same VHF net. Against a well-organized defence, and generally when operating on foot, company nets are often used.

1021. ***Organization of Battalion Radio Communications.*** Diagram 1-1 shows a typical example of the organisation of radio communications in a reinforced motor rifle battalion in the attack. The following points should be noted:

a. *Communication With Regiment.* The battalion's commander and chief of staff are allocated extra radios by the regimental signals company, through which they join the regimental command net (battalion commander and chief of staff) and the regimental staff net (battalion chief of staff only). The second echelon company commander who is nominated to take over command if the battalion commander is put out of action would be given only the frequencies of the regimental net. The regimental headquarters is also able to monitor battalion nets and communicate directly with companies.

b. *Battalion Nets.* The main battalion net uses R-123 vehicle VHF radios. It is controlled by the battalion commander and includes the chief of staff, company commanders, commanders of the mortar battery, the grenade-launcher, air defence and the anti-tank platoon commanders, the supply platoon and the combat reconnaissance patrol commanders, the commanders of subordinated or supporting sub-units (such as an artillery battalion or chemical reconnaissance patrol). In addition all section APCs are tuned to this frequency making a total of 40 stations or more on the net. Strict discipline is required to avoid chaos. The only stations with authority to transmit are the battalion commander himself, company commanders and commanders of reconnaissance and chemical reconnaissance patrols when making reports to the battalion commander. In addition, in mounted attacks, company commanders, with the battalion commander's permission, use this net to control their platoons. A duplicate battalion net is maintained for dismounted operations using R-159 VHF vehicle/man-pack sets. This net consists of the battalion and company commanders, the chief of staff and the mortar battery commander. Battalion fire support assets, eg the air defence platoon, may be ordered to tune their vehicle radios to the net.

c. *Company Nets.* If company nets are formed VHF man-pack sets (R-148) are issued to the company commander, 3 motor rifle platoon commanders and the commander of the anti-tank section (in BTR units). The battalion commander may join a company net using an R-123 set.

d. *Platoon Nets.* In exceptional circumstances motor rifle platoons may be issued with R-147 or R-157 manpack sets to form their own nets. In this case sections will receive the R-147P radio receiver only. A platoon net will only be established when the platoon is operating independently of the main body. Battalion support weapons normally maintain their own sub-unit nets, for example, between the mortar battery commander and firing positions, or between the grenade-launcher platoon commander and his three sections. The battalion deputy for technical affairs maintains a technical support net to link damaged vehicles with the repair and evacuation group.

e. *Supporting Elements.* Sub-units supporting the battalion generally maintain their own nets and often have their own links with equivalent headquarters at higher levels. Artillery battery commanders are expected to be co-located with the company commander they are supporting. This means that the artillery net can be used for communications between battalion and company commanders if the battalion command net is not working properly.

f. *Tank-Infantry Communications.* A tank company supporting a motor rifle battalion retains considerable independence in communications. The company commander may join the main battalion net or alternatively the battalion commander may pass his orders to the tank company by temporarily tuning to its wavelength. Tank platoon commanders and line tanks do not monitor the motor rifle battalion net. Intimate cooperation between a motor rifle platoon and a supporting tank depends largely on visual signals, especially the use of tracer, flares and coloured smoke.

1022. ***Non-Radio Communications.*** While radio must, inevitably, be the principal means of communication in a fluid, mobile battle, GENFORCE is well aware of the threat posed by enemy DF, intercept and communications jamming. The use of alternative means when possible is stressed. Line is used extensively in defence, in waiting areas and along march routes. Much use is made of liaison officers in helicopters and light vehicles, and of personal contact between commanders or their representatives and subordinates. Visual and sound signals, eg flares, flags and vehicle horns, are used with sub-units when out of contact to pass simple messages and instructions. As a general rule radio communications are kept to the minimum until contact with the enemy is made. Thus a battalion in the attack will be forbidden to use radios until their supporting artillery begins its bombardment. In defence line communications are the norm until the enemy begins his artillery preparation of the attack.

SECTION 5 - COMBAT ORGANIZATIONS

1023. ***General.*** The standard organizations shown in the GENFORCE ORBATS in Part 1 are not combat groupings. They are the basis on which GENFORCE commanders create tactical groupings. These groupings will be determined by a formation's or unit's mission and the degree of reinforcement it has received, on the terrain over which it is fighting and by the strength and deployment of the enemy it is facing. This section outlines some basic principles of GENFORCE combat organizations but it must be emphasized that these are not hard and fast rules, but general guidelines. In particular, they apply primarily to standard types of terrain and, as indicated in the appropriate sections of the text, require modification when applied to special conditions and terrain.

1024. ***The Division.*** Divisions are the basic building blocks of operational commanders. A division's organic assets are sufficient for it to attack or defend on a secondary sector but when fighting on the axis of main effort it will require additional combat and service support. Army commanders may also reinforce some divisions at the expense of others, for example elements may be detached from second echelon divisions to reinforce a first echelon formation. Second echelon divisions may also find that the army commander takes direct control of a unit for a specific mission, eg as an anti-air landing reserve. In such cases the army commander will try to make good these losses before the division is committed into battle.

1025. ***Divisional Combat Organizations.*** A GENFORCE division consists of three or four regiments, organic combat and service support units and any reinforcements attached by higher levels of command. Most divisions are either motor rifle or tank divisions, depending on the balance of mechanized infantry and armour within them, but there are a small number of rifle divisions for use in certain types of terrain, mostly very mountainous areas. Rifle divisions have three rifle regiments, which are not equipped with section APCs, and have only a tank battalion instead of a tank regiment. Rifle division combat organizations and tactics are very similar to those of motor rifle formations and major variations will be described at appropriate points in the text. The main elements of a division's combat organization are:

a. Echelonning of Regiments. The deployment of regiments is determined by the echelon structure of the division, usually in either one or two echelons. Two echelon structures are appropriate when attacking or defending in the main sector of effort, particularly against an enemy deployed in depth. Grouping three regiments in the first echelon and one in the second is the most commonly adopted variant. A two-and-two deployment is sometimes found in the defence, on an army's most threatened sector, but is more rarely seen in the attack.

b. *Reinforcements.* The exact composition of any reinforcements received by a division will depend on its mission, the terrain &c. They may be retained under divisional control, allowing the divisional commander to push some of his own assets down to regiments or may even be allocated to

regiments themselves. The most common reinforcement is artillery, allowing a division to create a divisional artillery group (DAG) while reinforcing regiments, particularly on its main sector, to allow them to create regimental artillery groups (RAGs).

c. *Organic Combat and Service Support.* Although divisions will reinforce regiments from their combat and service support assets, the commander will always strive to keep a proportion of these assets under his own control. He will usually employ them to support the regiments on the main axis but they are his personal means of influencing the battle and can be switched elsewhere as the situation develops. Some of these elements may be nominated as reserves (eg an anti-tank, engineer or chemical defence reserve) but it is rare to find field artillery in a reserve.

1026. ***Motor Rifle Divisional Combat Organizations.*** A GENFORCE motor rifle division consists of three motor rifle regiments and a tank regiment, with its combat and service support. The division may have either two BMP-equipped regiments and one BTR-equipped regiment or vice versa. The roles of the different types of regiment in the division's combat structure may be assessed by the following rules of thumb:

a. *BMP Regiments.* Because of the BMP's firepower and mobility, regiments equipped with it are most likely to be found on the division's main axis in the attack and its most threatened sector in the defence. They are also likely to be in the first echelon, although in the attack a BMP regiment may be considered for an exploitation role in the second echelon. Battalions of a BMP regiment are also most likely to be chosen for special missions by the divisional headquarters, for example, to act as forward or raiding detachments.

b. *BTR Regiments.* BTR-equipped regiments are more suited to secondary sectors. Infantry from BTR units may be more often chosen for heliborne operations because of their man-portable anti-tank weapons.

c. *Tank Regiments.* Because of their lack of infantry tank regiments are not suitable for use in the first echelon of motor rifle divisions when attacking reasonably strong defences. They are more likely to be used in the second echelon, where they can rapidly exploit success. A tank regiment might be used in the first echelon against a weak defence, when the aim is to strike as deeply as possible before the enemy strengthens his position. In defence the tank regiment is also most likely to be in the second echelon because its equipment and organization fit it for a counter-attack or counter-penetration role, rather than for holding ground.

1027. ***Tank Divisional Combat Organizations.*** Tank divisions are most suited to exploitation roles in the offensive and may be configured for use as an army's operational manoeuvre group. In defence a tank division is almost certain to be deployed in the second echelon of the army to provide a counter-attack force.

If a tank division has to attack prepared defences the BMP regiment will probably be in the first echelon. BMP-equipped elements are also often considered for vanguard and forward detachment missions.

1028. ***The Regiment.*** The regiment is the basic tactical and administrative unit in the GENFORCE army. Battalions and companies are sub-units and are numbered as elements of their parent regiment - 1st Motor Rifle Battalion, 10th Motor Rifle Regiment or 9th Tank Company, 3rd Tank Battalion, 100th Tank Regiment. They are not expected to operate independently of their parent regiment without reinforcement, and then only for a limited time. A motor rifle regiment has three motor rifle battalions and a tank battalion. A rifle regiment has three rifle battalions and a tank battalion. A tank regiment in a tank division has three tank battalions and a motor rifle battalion but the tank regiment of a motor rifle division has no motor rifle battalion.

1029. ***Motor Rifle Regimental Combat Organizations.*** It is rare for GENFORCE motor rifle regiments to be fought as four separate battalions. The most common options are:

a. In a one echelon formation, to allocate a tank company to each motor rifle battalion. Sometimes one tank company, with the battalion headquarters, is initially retained under regimental command.

b. In a two echelon formation, to allocate one or two tank companies to the two first echelon motor rifle battalions, while retaining the rest of the battalion under regimental headquarters. Tanks are not usually subordinated to second echelon battalions until they are about to be committed into battle.

c. In defence, particularly in BMP regiments, four battalions may be deployed (2 up, 2 back). Even in this case the tank battalion may lose a company to the first echelon motor rifle battalions (see Chapter 5, Diagram 5-4 for an illustration of this option).

1030. Of course, the regimental commander may choose to fight his tank battalion as a single entity if he feels the tactical situation requires it. This might happen in a meeting battle when a powerful armoured fist is most necessary.

1031. ***Tank Regimental Combat Organizations.*** Tank regiments of tank divisions are most often organized with the BMP battalion split by companies among the tank battalions. In some circumstances the BMP battalion may remain intact and even be reinforced with a tank company and other assets. This may happen if the BMP battalion is acting as the regiment's vanguard or if it is tasked as a forward detachment, especially when chosen, because of its amphibious capability, to secure a river crossing. It is rare for the tank regiment of a motor rifle division to be reinforced with motor rifle troops from another regiment.

1032. ***Battalion Combat Organizations.*** Tactical grouping of GENFORCE battalions never involves the exchange of sub-units with other battalions, eg a motor rifle battalion will not exchange a motor rifle company for a tank company with

a tank battalion. Battalions are either reinforced with regimental assets or are themselves used as reinforcements. Within the battalion the commander organizes his force in one or two echelons and uses his own and any attached supporting assets either to reinforce sub-units (especially on his main axis) or to remain under his own hand.

1033. ***Restoration of Combat Effectiveness.*** If a formation or unit suffers heavy losses, compromising its combat effectiveness, measures must be taken to reorganize it as rapidly as possible. Where losses are not catastrophic, this is most effectively achieved by reducing the number of sub-units under command, while retaining the outline of its structure. Thus a regiment might be reorganized with fewer battalions than usual or a company with fewer platoons. If a unit completely loses its combat effectiveness (when losses of men and equipment reach 70% or more) it is better to create composite sub-units from the available men and materiel. The composite battalion is the most typical size for such an element and it may contain almost any mix of motor rifle and tank troops and available combat support, such as artillery.

CHAPTER 2

THE MARCH

SECTION 1 - GENERAL PRINCIPLES

2001. ***Significance***. With its doctrinal stress on the importance of manoeuvre and its experience of land operations conducted on a continental scale, GENFORCE naturally emphasises the importance of conducting marches efficiently and rapidly. Marches are exercised over considerable distances and SOPs well developed.

2002. ***Types of march.*** GENFORCE considers two main types of march, dependent on whether contact with enemy ground forces is expected or not. In the first case, when contact with the enemy is not likely, administrative problems predominate, although tactical considerations can never be totally excluded. The risks of air or missile attacks and the possibility of enemy airborne or diversionary forces operating in the GENFORCE rear area are always present. Even administrative marches must be organized so as to allow a smooth and rapid transition to tactical march formations. Tactical marches, when contact with enemy ground forces is likely, are organized to ensure that the marching formation is ready to enter battle at the shortest notice.

SECTION 2 - ADMINISTRATIVE MARCHES

2003. ***Strategic Movement.*** Out of contact GENFORCE makes considerable use of rail, sea and air links to preserve the 'marching capabilities' of formations, by minimizing fuel consumption and maintenance requirements. Heavy equipment transporters may also be used when road movement is essential. The aim is to ensure that vehicles begin an operation with at least 3,600 km of operable range before major maintenance work becomes necessary.

2004. ***Road Marches.*** By minimizing wear and tear on vehicles before an operation begins and by carefully planning routine maintenance during road marches, GENFORCE hopes to limit the fall-out rate on the march to no more than 1-2% of vehicles per day. Tables 2-1 and 2-2 show the average rates of march and daily march performance which GENFORCE expects to achieve.

2005. ***March Planning.*** Marches are planned on the map, using standard norms and staff tables. Routes will be chosen to provide the best possible protection from enemy reconnaissance means and marches will be conducted at night or in periods of bad visibility whenever possible. The route is divided into sectors according to the type of terrain and report lines are pre-planned. Regular periods of rest allow routine maintenance, re-fuelling, feeding and sleep. (See Chapter 2 of Basic Force Operational Art for details of march organization).

TABLE 2-1: AVERAGE SPEEDS OF MARCH COLUMNS (KM PER HOUR)

Column Types	Paved Roads		Dry Dirt Roads		Muddy, Hilly, Urban Roads	
	Day	Night	Day	Night	Day	Night
Motorised Colm	30-40	25-30	20-25	18-20	10-15	8-10
Mixed Colm	20-30	14-20	15-20	12-15	10-12	8-1

Notes: (1) During fog, reduce by 25-30% of day speed.

(2) Performance is sharply reduced in mountains, desert, arctic, marshy areas and during winter.

Rest halts: * Short halt of 20-30 minutes every 2-3 hours (first one after 1-2 hours).

** Long halt of 2-4 hours necessary if a forced march of 12-14 hours is being conducted.

TABLE 2-2: DAILY MARCH PERFORMANCE OF MARCH COLUMNS (KM)

Column Types	Paved Roads	Dry Dirt Roads	Muddy, Hilly, Urban Roads
Motorised Colm	250-350	180-300	80-180
Mixed Colm	200-350	120-240	80-140

Note: (1) The route is measured on the map and 5-10% of distance is added on average terrain and 20% in mountainous terrain.

(2) Calculation is for march of 10-12 hours. Remaining 12-14 hours spent:

(1) Technical maintenance 3-4 hours.
(2) Serving hot meal 1-1 1/2 hours
(3) Deployment and camouflage 1-1 1/2 hours
(4) Movement to start line 1-1 1/2 hours.
(5) Rest 4-8 hours.

(3) On a march of over 1,000 km, and possibly even in a shorter one, there will be a rest day, probably in the rest area before the final assembly area for essential repair and maintenance work.

2006 ***March Routes.*** Two routes are normally considered sufficient for a division on an administrative march and a regiment moves on one route. However an alternative is planned for each route, in case the primary route becomes unusable. Lateral routes are chosen to permit manoeuvre from one road to another. The GENFORCE understanding of a road is not limited to those with hard surfaces. Country dirt tracks will suffice and will, indeed, be preferred if they offer a tactical advantage.

2007. ***March Formations.*** In a march when enemy contact is not expected columns are organized primarily for administrative convenience. Vehicles of similar type, speed and cross-country capability may be kept in packets rather than being tactically grouped. Tracked and wheeled vehicles may use different routes. However the deployment of certain sub-units is determined primarily by tactical considerations, even on an administrative march.

a. *Security elements.* Some form of march security will always be deployed, because of diversionary and airborne threats. In the deep rear these elements may be quite weak patrols but they will increase in number and strength as the formation approaches its line of commitment. Security patrols and outposts will be deployed around rest and assembly areas.

b. *Air Defence.* During an administrative march primary responsibility for air defence lies with the higher formation through whose rear area the tactical formation is marching. The higher formation's air defence assets provide early warning and will engage enemy aircraft at long range. Air defence sub-units will, however, be deployed throughout the tactical formation's march columns, operating on electronic silence until their formation is directly threatened. Priority in deployment of air defence sub-units will be given to headquarters, missile and artillery units and the first echelon. The higher formation will also concentrate resources to cover obstacle crossings and other choke points.

c. *Combat & Service Support.* Engineer reconnaissance, route clearance and obstacle crossing units will be deployed throughout the marching columns but the primary responsibility for maintaining routes lies with the higher formation's headquarters. Chemical reconnaissance and defence sub-units will also be tactically deployed within columns, in case of enemy strikes during the march. Higher formation headquarters are also responsible for maintaining, re-fuelling and feeding units marching in their rear areas, so that those units are, as far as possible, committed into battle at full strength and with their basic combat loads intact.

2008. ***Troop Control***. Firm and continuous control is essential, as is the maintenance of secrecy.

a. *Deployment of CPs.* Within units and sub-units command posts lead their columns (apart from any march security or movement support detachments). Within formations one CP must always be deployed. The preferred option is for the main CP to move simultaneously with the troops (usually in the first echelon) while control is exercised from the forward CP which is situated in the next daily rest area. When the formation moves into the rest area the forward CP moves on to the next one.

b. *Traffic Control.* The military police exercise traffic control. The march route is divided into 50-80 km sectors, each being the responsibility of a sub-unit. Posts are also established at all obstacle crossings, defiles, by-passes and population centres.

c. *Communications*. Communications security is very tight. Radios are normally allowed to operate in receive mode only. Radio silence is only broken for air and chemical warnings. Within sub-units the march is controlled by verbal orders and visual signals, such as flags or lights. Communication between headquarters is by mobile means, such as liaison vehicles and, at higher levels, helicopters. In addition unit and sub-unit commanders may use military police line communications or civil systems to notify their passage of report lines.

SECTION 3 - TACTICAL MARCHES

2009. ***Definition.*** Tactical marches are conducted when contact with enemy ground forces is possible. They usually begin in an assembly area where formations and units re-organize themselves from the order in which they completed the administrative march and carry out final maintenance and logistic checks. Their new march order will be determined by their mission, the terrain through which they must march and the nature of the enemy threat they face. The formation must permit a smooth and rapid deployment into battle in accordance with the commander's plan and must include security elements to prevent the enemy disrupting that deployment.

2010. ***Planning Factors.*** In normal terrain a division will require a zone of advance approximately 30 km wide. Within that zone it will normally advance on three routes, with an alternate route allocated for each one. In normal terrain regiments advance on one route until they begin their deployment into battle. A division's march columns will be 80-100 km deep from leading march security elements to the tail. A first echelon regiment will require over 40 km of road space; a second echelon regiment (with less march security deployed) needs 20-30 km. At the normal march speed of 20-25 kph a division will require 4-5 hours to pass a report line.

2011. ***Intervals.*** The standard interval between vehicles within columns is 25-50 m. This is also the standard interval between companies and platoons within a battalion's main body. Intervals of up to 5 km are maintained between battalion packets within a regiment's main body. At night and when weather or road conditions are bad greater intervals are maintained. When it is necessary to

cross open country under the threat of enemy PGMs, speeds are increased, vehicle intervals are opened to 100-150 m and gaps of 300-400 m maintained between platoons.

2012. ***March Security***. March security elements are sent out from the main body to prevent surprise attacks by the enemy, prevent the enemy's reconnaissance penetrating to the main body and to assist the main body's deployment into battle. The strength and composition of the march security elements will depend on the intensity of the enemy threat and the type of terrain. The greater the threat and the more difficult the terrain, the stronger the march security required. March security elements may be classified under the titles of vanguard, rearguard, flank detachment, mobile picquets (forward, flank and rear) and patrols. Diagram 2-1 shows these elements in relation to the main body. Their roles are explained below:

See Diagram 2-1

a. *Vanguard.* A vanguard is deployed by a division or a regiment to ensure the security of its main axis. In open, mobile operations a division may send an entire regiment forward as its vanguard. Alternatively, a vanguard consisting of a reinforced battalion may be sent out on each regimental route during an advance to contact. When exploiting a breakthrough or in pursuit each first echelon regiment is likely to employ a reinforced battalion as a vanguard. Motor rifle battalions are favoured in this role, though tank battalions may be used. Typical reinforcements are either a tank or a motor rifle company, an artillery battalion, an air defence platoon, with 2S6, at least a sapper platoon, possibly with specialist equipment and often a chemical reconnaissance section. When there is little chance of meeting the enemy divisions may use only a battalion as vanguard; regiments will use forward mobile picquets rather than vanguards.

b. *Rearguard.* A rearguard, in similar strength to the vanguards described above, is deployed by divisions and regiments conducting a withdrawal. When the enemy threat is weak a rear mobile picquet may be adequate.

c. *Flank Detachment.* A flank detachment is employed when marching parallel to the front line and is posted on the flank nearer the enemy. In addition, whenever a formation has to operate with open flanks, for example when exploiting into the enemy rear or in mountain areas, a flank detachment may be used. It often operates in conjunction with a Mobile Obstacle Detachment (MOD) and an anti-tank reserve and may move in bounds from one blocking position to another.

d. *Forward Mobile Picquet.* This is a reinforced company sent ahead of a first echelon battalion or a battalion operating away from the main body, eg a vanguard, a forward or raiding detachment. When the threat of enemy contact is low regiments may choose to employ a forward mobile picquet ahead on their axis, rather than a vanguard. Motor rifle companies are often used in this role, even in tank units. Typical reinforcements include a

tank platoon (or motor rifle platoon for tank companies), an artillery or mortar battery, an anti-tank platoon (with motor rifle companies). A sapper element, often including MT-55, may accompany a forward mobile picquet, or a Movement Support Detachment (MSD) may be marching in the immediate vicinity.

e. *Flank Picquet.* A flank mobile picquet, in company strength, is deployed on a threatened flank; it may be reinforced with anti-tank and mine-laying assets, or cooperate with an anti-tank reserve and an MOD. Flank mobile picquets usually march level with the head of the main body and about 5 km from the main route. Static flank picquets are often used, for example, to block the exit from a mountain pass while the main body passes by.

f. *Rear Mobile Picquet.* Again a reinforced company in strength which may be the rear element of a rearguard or the only rear security element of a division or regiment withdrawing when the enemy is not close. Rear mobile picquets are also posted in the advance during mobile operations in the enemy depth.

g. *Patrols.* The most common sort of march security patrol is the forward patrol, which may be found throughout a division's formation. Thus the forward mobile picquets of first echelon battalions, vanguards, forward detachments and so on will probably be led by forward patrols. Second echelon battalions may use a forward patrol. When the likelihood of contact with the enemy is low, forward patrols may be used instead of forward mobile picquets. Although forward patrols have a secondary reconnaissance function they should not be confused with the reconnaissance patrols described in Chapter 3. Forward patrols operate closer to the main body (generally about 3-5 kms ahead) and travel along the main body's actual route. They are less inclined to avoid contact with the enemy, but should not be expected to attack an enemy who is clearly stronger or in well-prepared defences. Flank and rear patrols are employed in appropriate tactical situations. Motor rifle or tank platoons are used as march security patrols and they may include engineer or NBC reconnaissance. The smallest form of patrol is the scout section or scout vehicle. These may be sent ahead of platoons or companies operating independently but even battalions deep in the main body of the division may use a scout section as a minimal march security element. Scout sections are also frequently deployed on the open flanks of sub-units.

2013. ***Reconnaissance & Movement Support Detachments.*** A unit or formation will also send out reconnaissance elements as described in Chapter 3 and Movement Support Detachments (see Paragraph 2019). When moving out of contact with the enemy the MSD moves ahead of the march security elements; when contact is possible the MSD follows immediately after the vanguard or forward mobile picquet.

2014. ***The Order of March: Division.*** This will be determined by the mission, the terrain, intelligence available on the enemy and thus the anticipated deployment into combat. A variant of a motor rifle division's tactical march formation is shown in Diagram 2-2. Some points to note are:

See Diagram 2-2

a. *Mission.* The division is advancing against a covering force screening a strong defensive position. It hopes to avoid deploying the main bodies of the first echelon regiments during the covering force battle so that they will be available for the breakthrough battle in the main defensive position. The division is not operating on the army's main axis; if it were the Army Artillery Group and other reinforcements would be included in its columns. The terrain is standard and there is no major water obstacle to cross until the main defensive position has been breached.

b. *Reconnaissance.* The reconnaissance screen is not shown in detail but is likely to include a reconnaissance detachment from the divisional reconnaissance battalion on the main axis and reconnaissance patrols from division and first echelon regiments to cover the rest of the sector of advance. See Chapter 3 for more detail.

c. *Forward Detachment.* The division's separate tank battalion, reinforced, is acting as a forward detachment. See Diagram 2-5a for details of its march formation. The forward detachment's mission may be to seize a reserve demolition before the covering force can withdraw through it or to take vital ground for the main body's breakthrough battle. Note that the forward detachment will try to avoid battle before it reaches its objective and that it moves off the main routes of the divisional columns.

d. *Vanguards.* These consist of reinforced motor rifle battalions from the first echelon regiments; see Diagram 2-5b for a typical march formation. Their mission is to clear the covering force from the path of the main body and they are therefore prepared to fight to achieve this. It is however unlikely that strong positions will be assaulted frontally if this can be avoided. The preferred option would be to turn the flank of the position, forcing the defender to pull back and to attempt to destroy the withdrawing force on the move. Vanguards try to move about 20-25 kms ahead of their main bodies, ie over an hour's march, but this may be reduced if resistance or obstacles are encountered.

e. *Movement Support Detachments.* These move immediately after the vanguards and will try to clear routes through or round any obstacles so that the main body is not delayed. See Paragraph 2019 for details.

f. *Main Body of the First Echelon.* See Diagram 2-4a for an example of a first echelon regiment's march formation. Although the regiments march prepared to deploy into battle as rapidly as possible, they will hope to avoid doing so. The decision to deploy or to by-pass an enemy too strong for the vanguard to dislodge will have to be approved by the divisional commander.

g. *Divisional Command Posts.* The divisional commander travels in the forward CP in the column of the main axis first echelon regiment, close to the regimental CP. This ensures a speedy command reaction at the most crucial point. The main CP accompanies the second echelon regiment on the main axis. The rear control post leads the divisional rear services.

h. *Divisional Artillery Group (DAG).* The DAG is composed of the organic and any attached artillery of a division. It moves on the main axis immediately behind the first echelon division so that it may support an attack from the march. The anti-tank battalion moves to cover an exposed flank.

i. *Divisional Air Defence.* If marching out of contact the divisional SAM regiment, and lower level assets, are likely to maintain electronic silence, relying on army and front assets for long-range cover and early warning. Electronic sensors would become active in the event of a direct threat to the division. In the present case the SAM regiment would be on full alert and possibly deployed with a battery accompanying each first echelon regiment and two others on the flanks of the second echelon.

j. *Second Echelon Regiment.* The second echelon regiment generally moves on the axis of main effort. See Diagram 2-4c for an example of its march formation. Part of the second echelon may be nominated as an anti-air landing reserve.

k. *Divisional Combat Support and Rear Services.* These will be distributed in accordance with the terrain and tactical circumstances. In this case the bulk of the engineer assets, less route clearance elements, are kept in an engineer reserve in the second echelon of the division. If a water obstacle had to be crossed assault crossing elements would accompany the first echelon and some might be with the forward detachment or vanguards; divisional bridging would follow the first echelon regiments. The chemical defence battalion will provide chemical reconnaissance patrols throughout the divisional formation, and if the NBC threat is high decontamination assets may also be split between first and second echelons. The bulk of the divisional rear services are shown in their traditional position at the end of the march formation. However maintenance and medical evacuation assets may be divided between the two echelons and in a long march in difficult terrain resupply facilities may also be split.

2015. ***Variations in the Divisional March Formation.*** It should not be imagined that the formation illustrated will be used in all circumstances. For example a second echelon division may advance on two routes. In very difficult terrain, with poor lateral communications, the division may advance in one echelon,

with a strong reserve. When exploiting a breakthrough a motor rifle division might employ its tank regiment in the first echelon. Other variations are possible and GENFORCE march formations should not follow limited stereotypes.

2016. ***The Order of March: Regiment.*** Diagram 2-3 shows examples of the march formations of first echelon motor rifle and tank regiments and a second echelon motor rifle regiment. The following comments may be made:

See Diagram 2-3

a. Reconnaissance. Even though divisional reconnaissance is moving ahead, the regimental commander will want his own separate reconnaissance patrols, reporting directly and immediately to his headquarters. A second echelon regiment will not deploy such patrols until its mission is confirmed. See Chapter 3 for more detail.

b. March Security. First echelon regiments will usually deploy reinforced battalions as vanguards when contact is possible. See diagram 2-5b for an example. Second echelon regiments will generally be content with a forward mobile picquet. Note that tank regiments are very likely to use their motor rifle battalion as the basis of the vanguard, particularly in broken terrain or if a water obstacle lies ahead.

c. *Routes.* Before commitment into battle a regiment will only move on more than one route in exceptional circumstances, such as very mountainous terrain. However regimental sub-units with independent roles, such as flank or by-passing detachments may march on a separate route.

d. *Main Body Battalions.* The combat grouping of first echelon battalions may differ between tank and motor rifle regiments. A tank regiment often allocates a company of its motor rifle battalion to each of its tank battalions from an early stage in the march. In motor rifle regiments, however, the tank battalion, less any company allocated to the vanguard, is more usually initially kept together on the march and placed at the head of the column, immediately after the CP. This gives the regimental commander a strong manoeuvre force in the event of a surprise contact with the enemy. Then as commitment to battle approaches the tank battalion may be allocated to first echelon motor rifle battalions. A tank company may be kept directly under regimental control. Second echelon battalions, in both tank and motor rifle regiments, receive little reinforcement before their commitment to battle.

e. *Artillery Elements.* A regiment's organic artillery battalion, or a regimental artillery group if it is formed, may be allocated various positions in the column of march. When contact with the enemy is imminent the artillery is likely to be well forward, perhaps close behind the command post at the head of the column. This arrangement is very likely if a meeting battle is in prospect. In second echelon regiments and on other occasions when contact is not expected the artillery may be farther to the rear. The air defence

battalion will be distributed along the column and some elements may be deployed in “air defence ambushes” on the flanks. A motor rifle regiment’s anti-tank battalion may cover an exposed flank or march well to the fore, depending on the tactical situation.

2017. ***The Order of March: Battalion.*** Battalions with independent missions, such as forward detachments and vanguards, and first echelon battalions all tend to receive similar reinforcements and it will be difficult to determine a battalion’s role from its combat grouping. However certain differences do occur and these are illustrated in Diagram 2-4.

See Diagram 2-4

a. Forward Detachment. Operating well forward and perhaps even ahead of the regimental reconnaissance a forward detachment requires at least one reconnaissance patrol to avoid surprise contact with the enemy. In a motor rifle battalion the organic reconnaissance platoon will be used. A tank battalion is likely to use a platoon of the attached motor rifle company. March security is provided by a forward mobile picquet, which may deploy a forward patrol from its own strength. Attached artillery is well forward, especially if a meeting battle is anticipated. Engineer attachments will depend on the mission and terrain, but gap-crossing equipment is likely to be included and divisional assault crossing assets may be attached.

b. *Vanguard.* A vanguard battalion has less need for advanced reconnaissance and may therefore not deploy a reconnaissance patrol, relying instead on a forward patrol. A motor rifle battalion may prefer to use an ordinary motor rifle platoon in this role and keep the reconnaissance platoon in reserve. It seems equally common to deploy any attached artillery at the front or rear of the main body. Engineer assets will emphasise route clearance capability, or an MSD may march immediately after the vanguard.

c. *First Echelon Battalion.* A first echelon battalion is unlikely to deploy a combat reconnaissance patrol before it has penetrated the enemy’s first echelon company positions, although a platoon will be nominated to act in this role when the time comes. March security will probably consist of a forward patrol. If artillery is attached directly to the battalion, rather than kept in support in the RAG, it is most often found at the rear of the main body.

d. *Second Echelon Battalion.* A second echelon battalion is not usually given reinforcements on the march, until immediately before committal into battle. In this example the battalion confines its reconnaissance and march security effort to a single scout vehicle. The air defence and grenade launcher platoons follow the battalion commander, the mortar battery follows the motor rifle companies.

e. *Attached Tank/Motor Rifle Companies.* The pattern of deployment follows that noted at regimental level. Tank battalions either use an attached motor rifle company, with a tank platoon and other reinforcements, as their forward mobile picquet, or, if this is not necessary, subordinate a motor rifle platoon to each tank company. Motor rifle battalion commanders are more likely to keep an attached tank company intact, less any platoon which reinforces the forward mobile picquet, and to place the tanks at the head of the battalion column. As contact becomes closer the tank company may be subordinated to the first echelon companies of the battalion. Tanks are not allocated to a second echelon company before it enters the battle.

2018. ***The Order of March: Company.*** If a tank platoon is allocated to a motor rifle company, the entire platoon marches at the head of the company column. A tank company allocated a motor rifle platoon may use it as a forward patrol, if one is required by the tactical situation. Otherwise the motor rifle platoon is split between the tank platoons, and individual vehicles follow the tanks of their assigned platoon.

2019. ***The Movement Support Detachment (MSD).*** Movement support detachments have already been mentioned above. The MSD is a specialist engineer grouping, responsible for route clearance which will be used in both administrative and tactical marches.

a. Role. The MSD moves either before or after the vanguard, up to two hours ahead of the main body, and improves the axis of advance. It fills in craters or constructs bypasses, lays bridges over minor gaps and improves the approaches to and exits from them, clears and marks lanes through minefields. The work of the MSD is vital both to a rapid advance and to security; if it is not completed in time the main body will be forced to halt, bunch up and create a target for air or missile attack. Once the first echelon is committed to battle the MSD moves behind it, in case its advance is checked, and to prepare a route for the committal of the second echelon.

b. Composition. MSDs include engineer plant such as tracked diggers, dozers, cranes, dump trucks, tank- and truck-launched bridges, mine detectors and clearers and trucks to carry explosives and metal trackway. They may have motor rifle and tank troops attached for their protection. Some of the tanks will often be fitted with dozer blades and the motor rifle troops may also provide extra labour. Chemical reconnaissance troops often form part of the MSD. With the resources organic to a division up to 5 or 6 MSDs of approximately company size can be formed.

c. Grouping. An MSD will be organized in two or three sub-groups. They are the reconnaissance and clearance group (or separate reconnaissance and clearance groups) and the road-bridge group. Some examples of the composition and grouping of typical MSDs are given in Table 2-3. Grouping depends on terrain and the tactical situation. It may be varied during the course of operations.

2020. ***Countering Remotely-Delivered Mines.*** GENFORCE takes the threat posed by remotely-delivered mines very seriously. An RDM strike may hit the middle of a unit in column or an assembly area, well behind its MSD, which cannot be expected to turn and clear routes. Units must therefore train their own mine-clearance groups (at least one section per company) in the use of basic equipment to clear routes. Individual vehicle crews are expected to able to clear as far as the next vehicle ahead in the column.

TABLE 2-3: MOVEMENT SUPPORT DETACHMENT COMPOSITION AND GROUPING

Reconnaissance and Clearance Group	**Road-Bridge Group**
a. Sapper Group (2 x BTR), MT-55, Tank with KMT-6	Sapper Section (2 x BTR), BAT-2, TMMx4
b. IMR, MTK, Sapper Section (BTR)	BAT-2, TMM x 4, Fire Engine x 3

Reconnaissance Group	**Clearance Group**	**Road-Bridge Group**
c. Sapper Section (BTR) MT-55	IMR, Sapper Section (BTR)	2 sub-groups, each Engr Section, BAT-2 x 2 & TMM x 2
d. Helicopter Sapper Section (Truck) MT-55, Tank with KMT-6	Sapper Section (Truck) Tank with BTU dozer blade	Engr Section, BAT-2 x 2 TMM x 4

Reconnaissance & Mine-Clearing Group	**Obstacle-Clearance Group**	**Road-Bridge Group**
e. Sapper Pl (-Section) (2 x BTR) Tank with KMT-6	Sapper Section (BTR) IMR, Tank with BTU dozer blade	MT-55, TMM x 2

CHAPTER 3

RECONNAISSANCE

SECTION 1 - GENERAL PRINCIPLES

3001. ***The Importance of Reconnaissance.*** In the GENFORCE view reconnaissance is the most important element of combat support. In their vision of future combat the battlefield will develop very unevenly and neither units nor formations will be able to rely on the security of their flanks or their rear. Friendly and enemy forces will become intermingled and situations develop and change very quickly. Reconnaissance elements must warn their commanders of rapidly developing threats and identify fleeting enemy vulnerabilities. GENFORCE commanders are taught that it is necessary to locate 75-80% of possible targets before launching an attack if it is to have a reasonable chance of success. 100% of the highest priority targets (eg PGMs, recce-strike complexes and command posts) must be located. This demands a very high level of skill from reconnaissance troops at all levels.

3002. ***Principles.*** GENFORCE reconnaissance troops are taught that, to be useful, reconnaissance data must have the following characteristics. It must be:

a. *Relevant.* Reconnaissance activity is strictly subordinated to the requirements of the commander and the fulfilment of his mission. Reconnaissance efforts will be concentrated on the main axis and key objectives.

b. *Continuous.* Commanders at all levels are responsible for organizing continuous reconnaissance. Reconnaissance is an all-arms mission and not solely the business of specialist reconnaissance troops.

c. *Aggressive.* Acquiring intelligence about the enemy will always be a struggle and the reconnaissance battle must be waged aggressively whether in attack or defence. Reconnaissance troops must display initiative, skill and resourcefulness to defeat the enemy's counter-measures.

d. *Timely.* The best intelligence is useless if it is not received in time. When setting a reconnaissance mission a commander will also set the time by which he requires the information to be provided.

e. *Secure.* GENFORCE commanders are aware that the enemy may learn a great deal about their intentions by discovering their reconnaissance plan. They accept that it is impossible to hide completely the fact that reconnaissance is being conducted, but will strive to conceal the scale, missions, targets and nature of their reconnaissance effort and, in particular, will aim not to reveal where they are concentrating their main strength. It will not be easy to reconcile the needs for speed and secrecy.

f. *Accurate.* GENFORCE enthusiasm for deception breeds a fear of being deceived. An effort will always be made to confirm information from one source by another.

3003. ***Zones of Reconnaissance Responsibility.*** Each headquarters, from division to battalion, has a zone of reconnaissance responsibility, sub-divided into three parts (see Diagram 3-1). The parts are defined as follows:

a. *Detailed Reconnaissance Zone.* The depth of this zone is determined by the effective range beyond the FEBA of the weapon systems commanded by the headquarters.

b. *General Reconnaissance Zone.* Within this zone the headquarters must be able to monitor enemy activity sufficiently to ensure its own plans are not disturbed by unexpected enemy moves.

c. *Rear Reconnaissance Zone.* Within its own rear area the headquarters must be able to monitor enemy activity, particularly the use of chemical strikes or air mobile forces.

d. The width of the zone of detailed reconnaissance responsibility broadly equates to the headquarters' frontage of operations, but in the general reconnaissance zone may overlap into the zones of flanking elements. For a regiment the zone of reconnaissance responsibility may cover 500-600 sq km and for a division it can reach 3-4,000 sq km.

See Diagram 3-1

SECTION 2 - RESOURCES

3004. The reconnaissance resources organic to a GENFORCE division are summarized below but, given the size of the area of responsibility and the level of detail required commanders are always likely to feel a shortage of assets.

3005. ***Command and Control of Reconnaissance.*** In divisional and regimental headquarters the Chief of Reconnaissance is responsible for organizing reconnaissance in accordance with the commander's plan. In battalions the chief of staff is responsible. Divisions and regiments organize specific radio nets to link reconnaissance sub-units with the headquarters. Battalions may monitor this net, especially when operating independently of the main body (eg as a forward detachment) but do not usually maintain a specific reconnaissance net. Every level of command is expected to maintain a reconnaissance reserve to be tasked for missions which arise during the course of operations.

3006. ***Higher Formation Assets.*** Much of a division's intelligence will come from higher formations. The GENFORCE air force deploys a considerable reconnaissance capability using the full range of modern sensors, and long range drones are also in service. While sorties will be tasked at army and front level,

reports may go direct to concerned divisions, as will relevant IFREPs. Higher formations also deploy a formidable SIGINT and SPF effort, the products of which will go to divisions as necessary.

3007. ***Divisional assets.*** The main asset is the divisional reconnaissance battalion:

a. The battalion has two BMP reconnaissance companies equipped with BMP and BRM-1K which may either operate as a company, forming a Reconnaissance Detachment (RD), or be deployed as platoon-sized Reconnaissance Patrols (RPs). The companies will operate across the divisional frontage and to a depth of up to 50 kms. If necessary they may be reinforced by additional RDs or RPs formed from motor rifle or tank sub-units.

b. The long range reconnaissance company is inserted in greater depth, up to 100 kms. The company operates in teams known as Reconnaissance Groups (RG) which may be inserted by their organic BTR, BRDM and UAZ-469 vehicles or by helicopter or parachute. The company may also be used to provide an air assault capability against high-value enemy targets such as headquarters.

c. The radio and radar intercept/DF company can intercept HF groundwave out to about 80 kms, and VHF to 30-80 kms (low/high power and depending on terrain masking). VHF direction finding (DF) may sometimes be good enough to target MRLs. It is certainly good enough to direct other reconnaissance means to refine the intelligence gained, or to direct raids or perhaps air strikes. TURN SERIES BBVs are being replaced by MT-LBu SIGINT variants, improving the company's capabilities and survivability in the forward area.

d. Forward and raiding detachments will provide valuable intelligence, even if that is not their primary function. Units in contact must also keep divisional HQ up-to-date with information about the enemy. Formations naturally also exchange intelligence with flanking headquarters.

3008. ***Regimental Assets.*** Tank and motor rifle regiments have a reconnaissance company. It includes a BMP platoon with 2 BMP vehicles and a BRM-1K as headquarters vehicle and a BRDM platoon with 4 BRDM-2. The company can deploy 2 RPs to cover the regiment's front which usually operate 10 to 15 kms in front of the units' FEBA. It appears not to be general practice to mix the company's BMP and BRDM vehicles within patrols. Additional RPs may be formed from motor rifle or tank sub-units.

3009. ***Battalion Assets.*** Motor rifle battalions have an organic reconnaissance platoon with a BRM-1K and either BMP or BTR vehicles. In addition ordinary motor rifle platoons may be used as RPs or combat reconnaissance patrols (CRPs). Battalions have short range portable ground radars capable of identifying vehicle movement to supplement their OPs in static phases of battle. A tank battalion has much more limited recce resources and must use ordinary

tank platoons to provide reconnaissance patrols, unless a motor rifle sub-unit has been subordinated to it. Battalions may deploy a variety of reconnaissance groupings. A scout vehicle on the axis of advance is the absolute minimum, and as the battalion approaches the enemy a Forward Patrol (FP) will usually form part of the march security grouping. In mobile battles, for example after breaking through the enemy's tactical defence and in meeting battles, and when the battalion has an independent mission, such as a forward detachment, a CRP will be formed. When the terrain or tactical situation demand it two or even three patrols may be formed from one battalion.

3010. ***Other Reconnaissance Assets.***

a. *Air.* Divisions have neither drones nor their own helicopter assets. However helicopters are frequently used by engineer and chemical troops to assess routes and obstacles and areas of contamination behind the FLOT. This is not generally done within enemy airspace, though opportunities may arise in a highly fluid battle. Attack helicopters will, of course, submit normal IFREPs during their missions.

b. *Engineer.* It is common practice to reinforce reconnaissance patrols with an engineer element. The divisional engineer battalion has a reconnaissance platoon and the regiment's engineer company can provide scouts as well. The engineer element may consist of a section with its own vehicle (BTR, BRDM or IRM) or a couple of sappers travelling in one of the patrol's vehicles. In addition Engineer Reconnaissance Patrols (ERPs) may be despatched to examine major obstacles or important routes in detail. In defence, or before an attack from a position of close contact, engineer observation posts will be established.

c. *NBC.* All sub-units are responsible for continuous monitoring of their own NBC state. In addition divisional and regimental chemical defence sub-units can provide specialist reconnaissance teams. They may operate from their own vehicles (BRDM-RKh or RKhM) or travel in a patrol's vehicles. Any reconnaissance patrol may have a chemical reconnaissance element attached and additional chemical patrols will be dispersed through unit columns to evaluate enemy strikes.

d. *Artillery.* Artillery targets across the whole division's zone of advance are acquired by a mix of mobile OPs with ACRVs and PRP-3/4 (SMALL FRED) deployed by artillery battalions and elements of the divisional artillery observation battery with sound and flash ranging lines, surveillance radars (with BIG FRED having a possible mortar and howitzer locating capability) and radar DF equipments (POLE DISH).

SECTION 3 - MISSIONS AND METHODS

3011. ***Missions.*** Reconnaissance elements are tasked to acquire the following types of data:

a. *Enemy Forces.* The composition, subordination, capabilities, location and intentions of the enemy are naturally vital information to the commander. The location and readiness state of precision and chemical weapons are given the highest priority. Headquarters, communication centres, defended areas and artillery positions are always important. At the lower tactical levels details of the enemy's fire and obstacle plans must be known in detail. Divisional and regimental commanders will also wish to locate enemy reserves and second echelons. Every effort will be made to discover boundaries and open flanks as these are seen as weak spots especially suitable for attack.

b. *Topographical.* Much of GENFORCE's reconnaissance effort is devoted to finding good routes for manoeuvre units, especially through difficult terrain that the enemy might consider impassable. Lateral routes, the identification of vital ground and of possible sites for GENFORCE communications equipment and for assembly areas &c are also important. Timely information on the nature and extent of obstacles is seen to be essential if the advance is to continue without pauses; especially important in this context are possible sites for crossing water obstacles and assessments of enemy demolitions and minefields.

c. *Contamination.* Areas of contamination, resulting from both enemy and GENFORCE strikes, have to be determined, together with the degree of hazard involved in crossing them.

3012. ***Groupings.*** A grasp of the terminology used to describe GENFORCE reconnaissance groupings is vital to an understanding of their tactics. The following terms are used:

a. *A Reconnaissance Detachment (RD)* may be formed from a reconnaissance, motor rifle or tank company or a motor rifle or tank battalion. It is used during mobile phases of operations on the main axis, or to reconnoitre key objectives in depth. Company-sized RDs are most common. Battalion-based RDs are used to reconnoitre objectives which it may be advantageous to seize and hold for some time, for example a mountain defile or a river crossing. RDs send out their own reconnaissance patrols and thus enable these platoon-sized elements to operate more independently of the main force and for longer periods. RDs are often all-arms groupings; typical RDs might be composed of a motor rifle company with a tank platoon, engineer and chemical reconnaissance sections or a tank company with a motor rifle platoon, engineer and chemical reconnaissance sections. An artillery battery, air defence element and (for motor rifle troops) anti-tank element might also be added. Helicopters may also be assigned to cooperate with the RD. Sometimes an RD may be tasked

during a mission to seize a key objective which has been found to be lightly defended, for example a weakly held river crossing. (See Diagram 3-2 for the tactical grouping of an (RD).

See Diagram 3-2

b. *A Reconnaissance Patrol (RP)* is a platoon-sized element which may be reinforced by engineer and NBC reconnaissance teams. RPs are sent out by recce battalions and companies, by RDs and by leading tank and motor rifle battalions. An RD always has at least one, and usually two, RPs operating in its sector, at distances of up to 10 kms from the parent body. One RP will always be forward on the RD's axis. RPs are usually sent out by motor rifle and tank battalions with independent missions (such as forward or raiding detachments) or first echelon battalions in open phases of battle. In such cases the RP may operate up to 15 kms from the battalion. (See Diagram 3-3).

See Diagram 3-3

c. *A Combat Reconnaissance Patrol (CRP)* is a platoon-sized element sent out by and reporting to a tank or MR battalion headquarters. Again it may include engineer or NBC reconnaissance troops. CRPs are not deployed by all battalions; second echelon battalions normally have no requirement for a CRP, unless tasked with an anti-air landing mission. CRPs are often used by advanced guards and battalions with independent missions and first echelon battalions are expected to deploy CRPs once they have penetrated the first crust of enemy defences. CRPs used in close contact with the enemy normally operate no deeper than their parent battalion can support them by fire, but out of direct contact CRPs may be separated by up to 10 km from the main body of the battalion.

d. *A Forward Patrol (FP)* is a march security element sent out by a forward picquet or by the vanguard itself. It is not primarily a reconnaissance element but while carrying out its primary mission will also be able to provide intelligence on the enemy for the headquarters which deployed it. (See Chapter 2, para 2012 g. for more details).

e. *A Patrol Section (Patrol Vehicle, Patrol Tank)* is, as the name implies, a single vehicle (or motor rifle section in operations on foot) with a reconnaissance mission. Patrol Sections may be the only reconnaissance element when the risk of meeting the enemy is low. They may also be sent to cover the flanks or rear of a sub-unit. All forms of patrol (RP, CRP or FP) deploy a Patrol Section (Vehicle or Tank) to the limit of visibility ahead of them (400-1200 metres). (See Diagram 3-3).

f. *A Reconnaissance Group (RG)* operates independently in the enemy's rear area. Within a division it is almost certain to come from the long range reconnaissance company. RGs are usually section strength and are particularly targeted on PGMs, headquarters and reserves.

3013. ***Tactics.*** The most common methods of conducting reconnaissance include observation, raids, ambushes and patrols.

a. *Observation.* Observation is, of course, the most common reconnaissance technique in all forms of battle. Observation posts as such, however, are most commonly deployed in more static phases of the battle, such as in defence and when preparing an attack in contact. They may be reinforced with engineer and chemical reconnaissance troops and, at night or in bad weather, are often supplemented by listening posts.

b. *Raids.* Raids are often used when in direct contact with the enemy to snatch prisoners, documents or equipment and may be mounted by either specialist recce or motor rifle troops. Specialist recce troops may also be tasked with raids deeper into the enemy rear, against command posts or high priority targets such as PGM systems.

c. *Ambushes.* The value of reconnaissance ambushes is increasingly stressed. Sub-units may be specifically tasked to lay an ambush to capture prisoners, documents &c. Alternatively a patrol may set an ambush during its operations in the enemy depth when this complies with the Commander's intentions.

d. *Patrols.* In open, mobile forms of warfare which GENFORCE expects to dominate the future battlefield OPs, raids and ambushes will be less significant sources of intelligence than patrols sent out by marching units. The types of patrol which GENFORCE operates have been described in the previous paragraph. Patrol techniques are described below.

3014. ***Patrol Techniques.*** Whatever the designation of the patrol, its modus operandi is fairly standardized. Diagram 3-3 summarizes these techniques. On the move a patrol usually sends a patrol vehicle forward to the limit of visibility and support by fire. Obviously this distance is determined by terrain, time of day, weather and so on, but it is usually expressed as 400-1200 metres. When enemy contact is not expected all the patrol vehicles may be moving at the same time, but when contact is imminent the patrol moves more circumspectly between good overwatch positions. The patrol commander will observe from such a point while the patrol vehicle moves covertly to the next position. In open terrain, where covert movement is difficult, the patrol vehicle makes its bound at best speed, followed by the rest of the patrol once it is safely in place.

3015. When enemy contact is not anticipated the patrol moves along its assigned axis at its best speed. When contact is possible the patrol never uses the axis itself, but rather moves by bounds between positions from which it can observe the axis, making every effort to avoid detection. If the enemy is discovered in an unexpected position, the patrol commander must immediately report the location to his own headquarters. If a patrol observes enemy reconnaissance or march security elements its task is to avoid contact and press on to locate

the main force as rapidly as possible. In the event of a surprise encounter with a small enemy force, and when evasion is impossible, the patrol is expected to act decisively to destroy the enemy, capture prisoners if possible and continue its mission. On the whole recce patrols try to avoid combat, which is almost bound to compromise their mission.

3016. The combination of these reconnaissance groupings and techniques used within a divisional area will vary with circumstances. The following paragraphs outline the organization of reconnaissance during different phases of battle.

See Diagram 3-4

3017. ***Reconnaissance In The Advance.*** (See Diagram 3-4). When advancing to contact and penetrating an enemy covering force a GENFORCE division will cover its front with patrols, each with a 2-3 km sector. A RD will probably advance on the main axis; the remainder of the front will be covered by RPs. This screen will avoid combat as far as possible and press on to contact the main body of the enemy force. In a meeting battle some patrols will then stay in contact with the leading enemy units as they approach the GENFORCE formation or unit, moving back on a parallel route. Other patrols will attempt to penetrate the enemy main body. If the enemy is preparing to hold a main defensive position some patrols will establish a line of static observation posts and report on the nature of the defences. Other patrols will seek gaps or open flanks and press on into the depth of the position. Some RPs will be deployed on the flanks of the division. The number of such patrols will be determined by the closeness of friendly formations. RGs may be inserted by vehicle or air at least to the depth of the division's mission.

3018. First echelon regiments will deploy their own RPs behind the divisional patrols. The advanced guard battalions of these leading regiments and any forward detachments will deploy CRPs and possibly their own RPs. Battalions in the main body of first echelon regiments may deploy FPs, but will not employ CRPs unless they are about to contact the enemy. Within second echelon regiments, only patrol vehicles are likely to be used.

3019. ***Reconnaissance In The Breakthrough Battle.*** (See Diagram 3-5). Much of the division's intelligence will be acquired by observation posts in the front line. Radars, DF and artillery reconnaissance assets will be fully deployed. The division reconnaissance battalion and first echelon regiment's reconnaissance companies will try to find gaps through which RPs may be inserted to identify targets in depth. Snatch raids may be mounted by reconnaissance or motor rifle units to identify opposing units. A considerable proportion of the divisional reconnaissance assault company should by now have been inserted into the depth of the enemy defences.

See Diagram 3-5

3020. ***Reconnaissance By Battle.*** If these sources fail to provide the detailed targeting information required to ensure the success of the fire plan it may be

necessary to employ reconnaissance by battle. This is only employed when other methods have failed because of the high casualties which may be sustained. Reconnaissance by battle will be employed on the sector of the main attack but, in order not to reveal this sector, diversionary reconnaissances will be conducted across the whole front. Each will involve a reinforced company or battalion, supported by a heavy fire plan (including air strikes) and deception measures to convince the enemy that a major assault is contemplated. The attacking force might aim to penetrate 1-2 kms and launch raiding parties to capture prisoners or equipment. Every possible reconnaissance asset will monitor the progress of the reconnaissance and commanders at all levels will be located in observation posts to make their person assessments of the defences. First echelon units will be prepared to launch major attacks in case the reconnaissance reveals exploitable weaknesses in the enemy defences. Such reconnaissance by battle was widely used in the past, but today is only used in the last resort when preparing an attack from close contact.

3021. ***Reconnaissance During The Battle In The Enemy Depth.*** (See Diagram 3-6). As a major attack is launched on the enemy's main defences, reconnaissance elements will stand ready immediately behind the assaulting troops. First echelon battalions will hold CRPs immediately behind their first echelon companies and will commit them once the enemy's forward company positions have been overcome. Regimental and divisional RPs, and perhaps a divisional RD, will be inserted once gaps have been created. Artillery strikes and smoke screens will cover their commitment. When exploiting a breakthrough units and sub-units will operate with open flanks and additional RPs and CRPs will be generated to cover them.

See Diagram 3-6

3022. ***Reconnaissance In The Defence.*** (See Diagram 3-7). In the defence there is considerable emphasis on the use of static observation posts. Within each first echelon battalion these may include 3-5 OPs, the battalion COP, 3-4 company COPs, 9-12 platoon COPs, up to 5 artillery OPs, 3-6 listening posts and 3-4 ground radar sets. If defending out of contact with the enemy a CRP and/or RP may be pushed forward. Regiment and division will establish their own OPs, including OPs for staff officers and the commander. Radio-electronic intelligence and artillery reconnaissance assets will be fully deployed. If the division withdraws to occupy its defensive position, some RGs of the reconnaissance assault company may be left as stay-behind parties. If the division goes over to the defensive out of contact with the enemy, a RD may be sent to establish contact with the attacking enemy and monitor his approach to the defenders. Second echelon regiments may also deploy assets into the intervals between defence lines.

See Diagram 3-7

CHAPTER 4

THE OFFENSIVE

SECTION 1 - GENERAL PRINCIPLES

4001. ***The Offensive.*** The offensive has always played the dominant role in GENFORCE military doctrine. It is stressed that only the offensive can lead to decisive victory over the enemy and then only if it is conducted with every effort, at high speed and without pausing by both day and night. The defence may have tactical advantages in the choice of terrain and time to prepare but the attacker can seize the initiative and impose his will on the defender.

4002. ***The Importance of Surprise and Concentration of Force.*** In order to seize the initiative the attacker must ensure surprise by concealing the time, location and strength of his attack. GENFORCE doctrine emphasises the importance of concealment and deception to disguise the location of the main blow. Sufficient force must then be concentrated in the sector of that main blow to overwhelm the enemy defence. GENFORCE commanders are taught that a tactical superiority of at least 6:1 on the breakthrough sector is essential for success. Once the breakthrough has been achieved it must be exploited without pausing until the operational objective is achieved.

4003. ***Terminology.*** GENFORCE doctrine defines types of attack in terms of the enemy's tactical posture:

a. The enemy may be in defence. Attacks on a defending enemy are divided into two categories:

(1) AN ATTACK FROM THE MARCH is conducted when the attacking force is not in tactical contact with the defender beforehand. It is usually launched from an assembly area in the depth of the GENFORCE position. See Section 2.

(2) AN ATTACK FROM A POSITION OF CLOSE CONTACT occurs when the attacking force is already in contact with the enemy, typically with both sides holding defensive lines. It is launched from the front line of the GENFORCE position. See Section 3.

b. An attack on an enemy who is also trying to attack is known as a *Meeting Battle*. See Section 5.

c. An attack on an enemy who is trying to retreat is better known as a *Pursuit*. See Section 6.

4004. ***Objectives.*** In GENFORCE usage an objective is a phase line. The commander's primary attention is focused on destroying the enemy who may try to prevent him from reaching that phase line, not on occupying ground. Once an

objective is reached the attacking force is expected to continue its attack as long as it remains combat effective. At the tactical level commanders give their subordinates either an immediate and a subsequent objective and a direction of further advance or simply an immediate objective and a direction of further advance. By setting the direction of further advance the commander ensures his subordinates maintain the essential high tempo of advance. (See Diagram 4-1).

See Diagram 4-1

4005. ***Axes.*** In planning an attack a GENFORCE commander will always select an axis of main effort. On this axis he will concentrate the overwhelming bulk of his resources, to ensure that he obtains the ratio of forces required to ensure success. A GENFORCE commander will never have more than one axis of main effort. It would be contrary to a GENFORCE commander's training for him to share resources among his subordinates rather than to mass them to support his main axis. It is, however, accepted that in special types of terrain, such as mountain areas, secondary axes must receive more combat and service support than the norm. (See Section 8).

4006. ***Echelons.*** In planning their combat formation commanders at divisional, regimental or battalion levels may organise their forces either in two echelons or in one echelon with a combined arms reserve. In normal terrain companies and platoons always deploy in one echelon and do not have a reserve. Within the division the pattern of echelonning may vary at different levels of command. Thus a division might deploy its regiments in two echelons but some at least of the regiments might deploy in one echelon.

a. *Two-Echelon Formation.* A two-echelon formation is usual when attacking a defence in depth and on the higher commander's main axis. The first echelon contains two-thirds or more of the combat power. Its mission is to destroy the enemy's forward defences and achieve the immediate objective. The second echelon is then normally committed to increase the unit's effort and enable it to achieve the subsequent objective. The commander pre-plans deployment lines for the committal of the second echelon, but retains flexibility in implementing them, depending on the progress of the battle. When the second echelon is committed a combined arms reserve is formed out of the first echelon. The remainder of the first echelon continues its attack. It is important to remember that a second echelon is a <u>reinforcement</u>, not a <u>replacement</u>, for the first echelon. Echelons are not "exchanged".

b. *One-Echelon Formation.* A one-echelon formation is employed when the enemy defence lacks depth or when attacking on a secondary axis. When using a one-echelon formation the commander must keep a combined arms reserve at all times, to ensure that he retains the ability to influence the battle. If he commits his reserve, he must create another one immediately.

4007. ***Other Elements of the Combat Formation.*** Besides organizing echelons and reserves the commander may include the following elements in his combat formation:

a. *Artillery Grouping.* In formal breakthrough operations most of the available artillery will be retained under central control, but in open, more mobile warfare, for example when operating in the enemy's depth, a significant proportion may be de-centralized to lower commanders.

b. *Air Defence Grouping.* Priorities in deploying air defence assets are usually to protect command posts, then artillery groupings and first echelon forces.

c. *Special Reserves.* These should not be confused with all-arms reserves and are formed from specialist troops or for special missions. Examples are chemical defence, engineer or communications reserves and anti-tank or anti-air assault reserves.

d. *Special Detachments.* These are all-arms groupings with independent missions. Examples are forward, flanking and raiding detachments and tactical airborne assault elements.

e. *Reconnaissance.* The organization of reconnaissance is dealt with in Chapter 3.

f. *Rear Services.*

g. *Elements in the Commander's Hand.* These are elements which remain under the commander's direct tactical control, "in the commander's hand", and enable him to influence the course of the battle. They are not considered as part of a combined arms reserve and are often engaged from the start of the battle. They are usually deployed close to the command post.

4008. *Tactical Calculations.* Much of GENFORCE's operational analysis effort has been devoted to developing norms to assist the commander's planning process. One of the most critical elements of this is the calculation of the attack frontage. Table 4-1 illustrates this process at battalion level. At company level a similar calculation is made, but only equipment in the defending battalion's first echelon is included. Company commanders can also calculate the comparative density of bullets per minute fired by their own and by enemy small arms, to ensure they achieve a required 3-4:1 superiority in the density of small arms fire.

TABLE 4-1: CALCULATION 0F BATTALION ATTACK FRONTAGE

1. What is the total number of tanks, MICV with ATGW and other anti-tank firing posts in the enemy battalion group?

2. What is the frontage of the enemy battalion group?

3. What will be the enemy's strength after the predicted casualties caused by friendly fire preparation? (It is normally expected that the enemy will suffer up to 60% casualties during the fire preparation of the attack).

4. What is the density of surviving enemy tanks, MICV with ATGW and other ATGW firing posts per 1 km of defended front after the fire preparation?

5. What is the number of tanks and infantry combat vehicles required to achieve a 5-6:1 superiority over the enemy per 1 km of attack frontage?

6. What is the number of tanks and infantry combat vehicles in the battalion, after allowing for losses to enemy fire during the advance? (Losses to enemy fire in this phase are normally predicted at 10-20%).

7. What is the actual attack frontage over which the battalion can achieve the required superiority of force?

4009. Artillery commanders use other norms to ensure that they deliver the required level of destruction to the defending enemy. Table 4-5 gives examples of the ammunition expenditure norms against typical targets. It is obvious that GENFORCE commanders rely on their reconnaissance assets' identifying the great majority of major enemy weapons systems in order that the required levels of destruction can be achieved.

4010. The superiorities described in Table 4-1 are those required by units attacking on the main breakthrough sector. On secondary axes a less overwhelming superiority is accepted (about half that for the breakthrough sector), but the objectives of attacking units are also less deep.

4011. ***Frontages and Depth of Objectives.*** Table 4-2 lists average frontages and depths of objectives at the tactical level. These are no more than rules of thumb and it would be wrong to think that a GENFORCE commander applies these to his map as a rigid template. The actual distances will be determined by the calculation of superiority ratios already outlined and, to a lesser extent, by the terrain over which the attack is conducted.

4012. ***Objectives and Enemy Deployments.*** Because objectives are related to the ratio of forces in the attack sector it is also possible to express their depth in terms of enemy deployments, rather than a fixed number of kilometres. For example, the immediate objective of a first echelon battalion attacking in a breakthrough sector will normally be approximately at the rear of an enemy

TABLE 4.2

FRONTAGES AND OBJECTIVES IN CONVENTIONAL OPERATIONS (km)

		Division	Regiment	Battalion	Company	Platoon
Zone of Advance		20-30	Up to 10	2-3	N/A	N/A
Assault Frontage (5-6:1 superiority of force in armoured combat vehicles required on divisional breakthrough sector. Up to 3:1 superiority acceptable on secondary axes, but objectives will be less deep)		4-10	2-3	0.5-1	Up to 500m	Up to 300m
Depth of Objectives in Divisional Breakthrough Sector	Immediate	20-25 Approximates to rear boundary of first echelon defending brigade	8 Approximates to rear boundary of first echelon defending battalion	2-3 Approximates to rear boundary of first echelon defending company	Up to 500m Approximates to rear boundary of first echelon defending platoon	N/A
	Subsequent	50-60 Approximates to rear boundary of first echelon defending division	20-25 Approximates to rear boundary of first echelon defending brigade	4-5 Approximates to rear boundary of first echelon defending battalion.	N/A	N/A

first echelon company. Its subsequent objective will be on or about the enemy's first echelon battalion's rear boundary. This should also be the attacking regiment's immediate objective. Again, these are rules of thumb, which will be modified in light of the density and quality of the defence.

4013. Such planning factors are common to both forms of attack on a defending enemy, but there are significant differences in the actual conduct of the attack, depending on whether it is launched from the march or from a position of close contact. These are described in Sections 2 and 3.

SECTION 2 - THE ATTACK FROM THE MARCH

4014. *Definition.* "Attack from the march" is not another term for a hasty attack. It occurs when the attacking and defending forces are not in tactical contact beforehand. As practised by GENFORCE its most common form is an attack prepared in an assembly area, hidden from the enemy and out of range of his artillery. The attacking force moves out of the assembly area, marches towards the enemy and then, under cover of artillery and air support, deploys into attack formation. The deployment takes place in territory held by friendly forces in contact which hold the enemy in place and assist the force attacking from the march with direct and indirect fire support, movement control and intelligence. A less common form of the attack from the march occurs when a force on the march encounters the enemy unexpectedly. This may happen to march security elements, especially after a breakthrough, when exploiting into the depth of the enemy position. For example, a GENFORCE vanguard might attempt to over-run an enemy rearguard in a hastily-prepared position by an attack directly from the march. However the GENFORCE commander would still have to believe that he had a sufficient superiority of force.

4015. ***Preparation of the Attack.*** Preparation of the attack begins in an assembly area which should at least be outside effective enemy artillery range (15-20 kms) and is often even deeper in friendly territory. Diagram 4-2 illustrates a typical divisional assembly area, which might be anything from 200 to 600 sq kms in size, depending on the concealment possibilities of the terrain. A battalion requires at least 10 sq km for its assembly area. Some engineer preparation of the area is desirable, to improve routes and provide protection for equipment and personnel. Final maintenance and re-supply will be conducted and units and sub-units will be re-grouped tactically in accordance with their commanders' plans. Strict camouflage and concealment discipline will be enforced and radio silence maintained. Planning procedures for commanders and staffs will be as outlined in Chapter 1.

See Diagram 4-2

4016. ***The March Into The Attack.*** Engineers are likely to be the first to move out of the assembly area. Working in concert with any engineer assets provided by the senior commander and the engineers of friendly forces in contact, they will clear routes and may begin to breach obstacles. Units in contact will be re-

sponsible for clearing routes through minefields they have laid. Traffic control elements will move out at the same time. Next to move will be the artillery. The DAG and the RAGs must occupy their fire positions at least 1-2 hours before they are due to open fire. Their positions will have been reconnoitred beforehand and may have been prepared by the engineers. Some air defence assets may also deploy in advance of the main body to picquet the routes and protect the artillery groups. First echelon units will move from the assembly area in accordance with a timetable designed to bring them to the line of attack at H-Hour. The normal rate of advance from the assembly area to the line of attack is 15-20 kph.

4017. ***Deployment For the Attack: Division.*** (See Diagram 4-3). In this example a motor rifle division has deployed to attack a main defensive position in two echelons, with three regiments in the first echelon and one in the second. A one echelon formation is unlikely against such a defence, except on a secondary axis. This division is attacking on the army's main axis and therefore additional artillery and other assets have been subordinated to the division. The Army Artillery Group is also engaging targets within the division's sector of attack. Two regiments are concentrated on the main axis, each attacking in two echelons. The breakthrough sector on which these regiments attack might be as narrow as four kilometres wide. The regiment on the secondary axis attacks in one echelon in order to cover a wider frontage.

See Diagram 4-3

4018. ***Divisional Artillery Deployment.*** Each first echelon regiment is supported by a RAG; the DAG is located on the main axis. The RAGs on the main axis consist of three battalions each, one organic to the regiment and two allocated down from division. The RAG on the secondary axis has only two battalions. The DAG consists of the organic BM-21 battalion and four tube artillery battalions. The additional artillery required by the division to achieve the grouping outlined will be drawn from army and even front resources. An army may use divisional to supplement first echelon DAGs.

4019. ***Other Divisional Assets.*** The air defence regiment would be deployed to cover the divisional sector, possibly with a battery in each first echelon regiment's sector and the remaining two covering the flanks in depth. The divisional anti-tank battalion forms the anti-tank reserve and would operate in conjunction with an MOD from the divisional engineer battalion. If the division has an open flank the anti-tank reserve and MOD may be deployed towards that flank. Otherwise it may be assigned a more central position and the primary role of covering a flank of the breakthrough against a possible enemy counterattack. Engineer assets not subordinated to regiments or directly tasked in support of the breakthrough would be kept in an engineer reserve. A similar policy would apply to the chemical defence battalion, though all available smoke generating assets, including those with a dual decontamination capability, are likely to be employed in direct support of the attack or in a deception role. Flame-thrower assets from the chemical defence battalion will probably be

allocated to support the first echelon battalions on the main axis. Some part of the reconnaissance battalion is also likely to be held in reserve until the breakthrough has been achieved. The separate tank battalion is prepared for insertion as a forward detachment once a gap is available; this need not be found on the main axis. The battalion might be reinforced by a motor rifle company from the second echelon regiment but artillery would only be attached immediately prior to commitment. Logistic assets, particularly recovery and evacuation assets may be split, with some part deployed behind the first echelon and the remainder located in the rear of the divisional area.

4020. ***Deployment For the Attack: Regiment.*** On a main axis a regiment will normally deploy in two echelons. In a tank regiment the motor rifle battalion is most likely to be split between the three tank battalions but in a motor rifle regiment the tank battalion will either be allocated to the first echelon battalions (two companies on the main axis, one company to the second battalion) or each first echelon battalion may receive a tank company and the third company and battalion headquarters would remain directly subordinate to the regimental commander. The RAG may be used in various ways. A three-battalion RAG supporting two first echelon battalions, as in this example, may have a battalion in support of, but not directly subordinate to, each first echelon battalion with the third battalion engaging targets as ordered by the regimental commander. Against a very strong defence some part of the regimental artillery, and possibly a tank company, may be placed in direct fire positions. The air defence battalion will be deployed to cover the command post and RAG as priorities, with the 2S6s probably subordinated to first echelon battalions. The role and deployment of the anti-tank battalion will be similar to those of the divisional battalion.

See Diagram 4-4

4021. ***Deployment For the Attack: Battalion.*** (See Diagram 4-4). If a battalion attacks in two echelons the first echelon will consist of at least two reinforced companies and the second echelon will be up to a company strong. If the battalion attacks in one echelon a reserve, consisting of at least one platoon, will be formed. A tank battalion can expect to be reinforced by a motor rifle company and a motor rifle battalion usually has a tank company under command. The tank battalion normally allocates a motor rifle platoon to each tank company. However the motor rifle battalion generally uses the tank company at full strength with its first echelon. One tank platoon may be kept under the battalion commander's hand initially. A motor rifle battalion's organic fire support will be concentrated on the main axis. The mortar battery will deploy a kilometre or so behind the first echelon. The AGS-17 platoon may be in the interval between two companies or on the flank of a company or about 300 m behind a first echelon company. The anti-tank platoon moves 100 m behind a first echelon company on the flank most exposed to enemy armour. The air defence platoon moves behind the first echelon companies and is usually not far from the battalion COP.

4022. ***Deployment Drills.*** GENFORCE employs a standard drill for deployment into battle which is illustrated in Diagram 4-5. This deployment drill can be incorporated in almost any form of attack, but is most common in the attack from the march and the meeting battle. The drill proceeds from march formation (regimental and battalion columns) through pre-battle formation (company and platoon columns) into battle formation (line abreast). The sequence of deployment and the distances of the lines of deployment from the enemy are determined by tactical considerations, as outlined below.

a. *Line of Deployment into Battalion Columns.* Deployment into battalion columns should begin beyond the range of the bulk of the enemy's artillery (approximately 10-15 kms from the enemy FEBA). The artillery preparation of the attack is usually timed to begin as the attacking force reaches this line.

b. *Line of Deployment into Company Columns.* This line should be set outside the maximum range of the defender's ATGW, tanks and other direct fire systems (thus reaching 4-6 km from the enemy FEBA, depending on the terrain).

c. *Line of Deployment into Platoon Columns.* This should ideally be located in dead ground, screened particularly from the defender's short range ATGW. It will normally be 2-4 kms from the enemy FEBA.

d. *Line of Going over to the Attack.* This is the line by which the attackers deploy into attack formation, line abreast, with tanks 100-200 m in front of the infantry vehicles. Its location depends on the preparedness of the enemy defence and the degree of destruction inflicted by the attackers' artillery. The line should be outside the range of enemy light anti-tank weapons and small arms and permit a rapid advance into the enemy positions. It is usually at least 600 m from the enemy FEBA but it may occasionally be farther out.

e. *Dismount Line.* In a dismounted attack the dismount line is set as close as possible to the enemy trenches, if possible in some cover from small arms and short range anti-tank weapons. 3-400 m from the enemy is a normal distance.

f. *Safety Distances.* The safe distances from friendly artillery fire are 200 m for tanks, 300 m for BMPs and BTRs and 400 m for dismounted infantry.

4023. ***Obstacle Breaching.*** GENFORCE units holding the front line will be responsible for clearing and marking gaps in any minefields they may have laid prior to the attack. Enemy minefields may be breached mechanically using KMT series mine ploughs fitted to tanks or BMPs or by explosive or manual means before the attack begins. Manual lifting is only likely if the attack is prepared during darkness but explosive breaches may be blown during the artillery prepa-

ration of the attack. Normally one breach is required for each assaulting platoon. Tanks lead through the breach, followed by infantry in file along the tank tracks. BMPs or BTRs provide covering fire. All available means will be used to cover the gaps with smoke. Smoke pots may be pre-positioned while breaches are prepared or vehicles may use their smoke grenade launchers as they approach the minefield.

4024. ***The Assault.*** Once through any minefield the assaulting force will deploy in line and advance at its best speed. The tanks lead, followed by infantry in line. BMPs or BTRs follow by bounds, using folds in the ground to reach fire positions and cover their dismounted element. BMPs with stabilized main armament may move in line with the infantry. As the line of infantry approaches to within 25-40 m of the enemy trenches grenades are thrown and personnel in the trenches destroyed by point-blank fire.

4025. ***Fire and Movement.*** In the assault on the enemy's first positions there is little scope for fire and movement at the lowest levels. The emphasis is on generating and maintaining momentum and even the briefest pause is forbidden. However as the battle develops in depth greater flexibility is expected and fire and manoeuvre tactics may be employed within sections.

4026. ***Trench Clearance.*** If it is necessary to clear a length of continuous trench, two or three soldiers will advance along the bottom of the trench while the remainder of the section move along either side of the trench.

4027. ***The Battle in the Depth of the Enemy Position.*** The emphasis in this phase of the attack is to maintain momentum. Points of resistance will be by-passed if possible. Sub-units are expected to advance unevenly but GENFORCE doctrine teaches that a headlong advance is the best way to help flanking units. The situation is expected to change rapidly as the defender tries to close the gaps in his position. If the enemy tries to seal off or counter-attack a penetration a minimum force, supported by artillery and smoke, will isolate the enemy on the threatened flank while the main body manoeuvres further into the depth to create conditions for the successful deployment of the second echelon.

4028. ***Deployment of Second Echelons.*** At all levels of command certain principles apply to the use of the second echelon. Its primary role is to develop success, but it may be used to repel a counter-attack or, if part of the first echelon suffers unexpected losses, it may replace it. Within a battalion the second echelon moves forward in column to keep pace with the first echelon. At higher levels the second echelon may move by bounds in columns, using terrain features to mask their waiting areas. A battalion's second echelon or reserve will be 1.5-2 km behind the first echelon companies. A regiment's second echelon battalion is likely to be 3-5 kms behind the first echelon, a division's second echelon may be 10-15 kms to the rear of the first echelon. The commitment of the second echelon is supported with all the resources available to the commander, especially artillery, air support and smoke. Second echelons are usually committed into an interval between first echelon ele-

ments or to a flank behind the first echelon. Commitment by passage of lines through the first echelon is rarely practised. It is generally only contemplated when the first echelon has lost its combat efficiency. Diagram 4-6 shows the commitment of a division's second echelon.

See Diagram 4-6

4029. ***Action Against Counter-Attacks.*** Enemy counter-attacks are expected and provision for their defeat is included in every commander's plan of attack. The aim is to beat off the counter-attack while maintaining the advance of the main body. Anti-tank assets concentrate on the threatened axis and at regimental and divisional level the MOD may surface - lay a minefield in the enemy's path (see paragraph 4052). The force assigned to defeat the counter-attack may fight from hastily occupied firing positions or may conduct a meeting battle (see Section 5). If the counter-attacking force is superior in strength GENFORCE commanders prefer to fight from a firing line sited on favourable ground but an equal or weaker enemy will usually be met in a meeting battle. In the former case great stress is laid on engaging the enemy with artillery and mortars at the longest possible ranges. Every attempt is made to strip the infantry away from the enemy tanks and to destroy each element separately. Motor rifle troops in the blocking force generally dismount. In BMP battalions some BMPs may then be used in company armoured groups to manoeuvre against the flanks of the attacking force. Once the counter-attack has been checked the blocking force will try to advance and complete its destruction.

4030. ***Action On Success.*** When an attack has succeeded the prime consideration is to keep up the momentum. If the enemy has been destroyed, units will reform into march order or pre-battle formation. If the enemy is detected withdrawing GENFORCE units will pursue, first sending out additional reconnaissance. (See Section 6).

4031. ***Action on Failure.*** If the attack fails, there are two main options available to the GENFORCE commander: try to by-pass the opposition and continue the advance, leaving the enemy to be dealt with by following units, or wait and try again. The first possibility assumes that the unit remains a viable fighting unit. If it is not, it will be replaced. In the second case reinforcement will be requested.

SECTION 3 - THE ATTACK FROM A POSITION OF CLOSE CONTACT

4032. ***Definition.*** An attack from a position of close contact begins with the attacker in tactical contact with the defender. Such a position might occur as the result of an earlier unsuccessful attack, after which the GENFORCE unit or formation was obliged to go over to the defence on the line achieved. The advantage of this type of attack is that the attacker is able to reconnoitre the enemy position thoroughly. The disadvantage is that it is difficult to disguise preparations for the attack from the enemy and if preparations are detected the attacking force is very exposed to the enemy's fire.

4033. ***The Combination of Types of Attack.*** Obviously it is possible to combine the two types of attack on a defending enemy. Thus, after an unsuccessful first attack from the march, a regiment or division might try again, using first echelon troops in an attack from a position of close contact and new, second echelon forces in an attack from the march.

4034. ***Preparation of the Attack.*** Detailed reconnaissance will take place and if observation and small raids do not provide the intelligence required reconnaissance by battle may be organized (see Chapter 3, paragraph 3020). Additional artillery will be massed and ammunition dumped at firing positions. Engineer work is likely to include the preparation of routes and covered positions for vehicles close to start lines. Under cover of darkness re-grouping will take place. In particular fresh units may be introduced and less combat - effective ones withdrawn. Assault sub-units in the first line will close onto narrower attack sectors, probably leaving elements in vacated positions to maintain the impression that they are still occupied. Tank sub-units supporting motor rifle troops in the first echelon occupy waiting areas 5-7 km from the enemy FEBA, ideally to one side or other of the attack axis as a security measure. Such moves must be made in strict secrecy, in order to create powerful assault groupings in sectors where the enemy is not expecting to be attacked. Diagram 4-7 illustrates a divisional attack from a position of close contact.

See Diagram 4-7

4035. ***The Assault.*** Under cover of the artillery preparation of the attack tank sub-units will advance, deploying into battle formation as they do so. As the tanks pass the trenches of the motor rifle troops they are supporting, the infantry will climb out and follow, shaking out into standard assault formation. Some tanks and other direct fire weapons will continue to engage targets in the enemy front line. From this point there is little difference between the two forms of attack. The battle in the enemy depth will be fought in the same way as in an attack from the march.

SECTION 4 - COMBAT & SERVICE SUPPORT IN THE OFFENSIVE

4036. ***Artillery.*** 60% of fire support in the offence is delivered by field artillery and within the first 10 km depth of the enemy's defence over 90% of targets will be engaged by artillery. GENFORCE has a large and well-equipped artillery force at its disposal and much effort is devoted to effective coordination of artillery fire and ground manoeuvre.

4037. ***Artillery Grouping.*** Artillery assets within the division are organised into task-orientated groupings whose strength depends on the mission of the supported unit, the strength of the enemy and the relative importance of the axis. The guiding principle is the achievement of maximum concentration on the decisive axis.

a. *Divisional Artillery Group (DAG).* First echelon divisions on main axes will receive assets from the army commander to enable them to form DAGs. The divisional BM-21 regiment is generally retained within the DAG but all or part of the divisional artillery regiment may be de-centralized to main axis regiments. The DAG itself fires in support of regiments on the main axis, from initial positions 3-6 kms behind the FEBA.

b. *Regimental Artillery Group (RAG).* Regiments reinforced with artillery by division form RAGs (usually 2 or 3 battalions strong). Individual battalions of the RAG may either fire in support of first echelon battalions or engage targets as ordered by the regimental commander. RAGs are initially deployed 1-4 kms behind the FEBA. Once a breakthrough has been achieved artillery battalions may be directly subordinated to leading tank or motor rifle battalions during exploitation or pursuit phases, but can still be recalled to RAG control if required, for example to defeat a counter-attack.

c. *Subordination to Tank or Motor Rifle Battalions.* When acting independently of its regiment (for example as a vanguard or forward detachment) a tank or motor rifle battalion usually has a battalion or at least a battery of artillery subordinated to it.

d. *Army Support.* During a "set-piece" attack the Army Artillery Group (AAG) and Army Group of Rocket Artillery (AGRA) fire in support of first echelon divisions on the army's main axis and will be deployed within those division's boundaries, 5-8 kms from the FEBA. Their primary roles are counter-bombardment and engagement of depth targets such as headquarters and reserves.

4038. ***Command and Control.*** As far as possible, artillery commanders are co-located with the commander they are supporting. Artillery Command and Observation Posts are established at battery and battalion levels to provide their commanders with direct observation of the battlefield. The COP is, in effect, the equivalent of a British FOO, although small forward observer teams are also sometimes attached to sub-units with independent missions. Requests for artillery support during the course of a battle are passed via the command net, not the artillery net; RAGs and DAGs will only fire in support of manoeuvre units with the regimental or divisional commander's approval.

4039. ***Deployment.*** Yardsticks for the deployment of artillery units are given in Table 4-3. In planning re-deployment of their units GENFORCE artillery commanders work to a "rule of a third"; when only a third of the maximum range of their artillery remains in front of the attacking troops, they must move a third of their force forward. Once redeployment starts, no more than a third of the available guns should be moving at any one time. Redeployment is by battalions whenever possible; a typical bound would be up to 10 kms long.

TABLE 4-3 ARTILLERY DEPLOYMENT YARDSTICKS

Distance	Mortars	Guns and Howitzers	MRLs
Between Weapons	15-60	20-40 m (a)	15-20 m (b)
Between Batteries (c)	-	400-2000 m: usually about1000m	1000-2000 m
From FLOT	500-1500m	RAG: 1-4 kms (d)	-
		DAG: 3-6 kms (d)	3-6 kms
		AAG: 5-8 kms (d)	5-8 kms

Notes:

(a) Battery gun positions are usually laid out in 100-300 m long straight lines at right angles to the line of advance. Experiments have been carried out with more sophisticated and less vulnerable deployments, but the need for speed into action usually precludes them. When time allows, weapons are dug in and camouflaged and alternative and dummy positions are selected and prepared.

(b) MRLs are concealed in hides 1-5 kms from their firing position. They move forward just before engagement and then “shoot and scoot” to avoid counter-bombardment.

(c) Battalions usually deploy their batteries in a triangular pattern.

(d) During an attack, artillery leap-frogs forward by batteries, or more usually, battalions, moving on average 3-4 kms a time. GENFORCE artillery this consideration will influence the frequency and lengths of moves, as of course will the rate of advance. Frequent moves are undesirable as they affect the continuity of fire support: it takes over half an hour by day to get a towed battalion out of action and then back into action, on top of movement time (though self-propelled guns can accomplish these activities in 1/5 of the time).

(e) Individual guns and even whole batteries may be deployed in the direct fire role, supplementing the tank fire which is integrated into the fire plan. Such fire is considered more effective against point targets, and more economical in the expenditure of ammunition. It is particularly important in the preparation phase of attacks from positions of close contact, and in the accompaniment phase, when speed and simplicity are very important.

4040. ***Fire Planning.*** GENFORCE fire planning is based on levels of destruction defined in Table 4-4 and on norms of ammunition expenditure calculated to achieve those levels. Examples of these norms are given in Table 4-5.

TABLE 4-4 LEVELS OF DESTRUCTION USED IN ARTILLERY FIRE PLANNING

a. **Annihilation** is assessed as the infliction of 50-60% casualties in men and equipment in the target area and will deprive the target of its combat capability totally. It is very expensive in ammunition, requiring three times the expenditure involved in neutralization of a target. Annihilation is therefore rarely used except against high value targets such as nuclear weapons.

b. **Destruction** will make the target unserviceable. It is generally used against single targets, such as a bunker.

c. **Suppression** means that the target temporarily loses its ability to fight or manoeuvre. 30% casualties will be inflicted on the target. To achieve this level of destruction on a typical platoon position covering 4-6 hectares in area would require 800-1200 122 mm rounds or 600-900 152 mm rounds at ranges up to 10 km.

d. **Harassing fire** is conducted by a limited number of guns in order to cause psychological stress on the enemy and wear down his morale.

TABLE 4.5 AMMUNITION EXPENDITURE NORMS AGAINST UNOBSERVED STATIONARY TARGETS AT 10KM OR LESS

Target	Required Effect	Guns and Howitzers			Mortars		MRLs	
		122mm	152mm	203mm	82mm	120mm	Medium Calibre	Large Calibre
Troops in prepared strongpoint	Suppression of 1 hectare of target	200	150	60	-	200	240	100
Troops in hastily prepared defensive position, tanks and APCs	Suppression of 1 hectare of target	150	110	45	300	140	180	80
Troops in assembly area in the open	Suppression of 1 hectare of target	20	15	5	35	10	8	5
Dug in CP with overhead cover	Suppression of 1 hectare of target	200	150	60	-	200	240	100
CP in the open, or vehicle mounted	Suppression of 1 hectare of target	50	40	15	-	25	20	15

ATGM, anti-tank gun or other individual target in the open	Suppression	140	100	50	240	140	-	-
Battery of SP guns (mortars)	Suppression	450	270	120	-	450	400	240
Battery of towed guns (mortars) when dug in or un-armoured SPs	Suppression	240	180	100	400	240	320	180
Battery of towed guns (mortars) in the open	Suppression	90	60	30	180	90	120	60

Notes: (a) The table is based on the assumption that batteries are laid on the basis of survey data and meteorological data that is no more than 3 hours old.

(b) When engaging with observed fire, or adjusting a known point, expenditure is reduced by 25 per cent.

(c) When engaging targets at ranges in excess of 10 kilometres, 10 per cent is added for every additional kilometre.

4041. ***Density of Fire.*** GENFORCE artillery doctrine stresses the need to deliver the required number of rounds within the shortest possible time from the mission being ordered, if the target is not to escape destruction by moving. Fire support of an attack will consist overwhelmingly of short, intense concentrations of fire, with massive barrages being largely a thing of the past.

4042. ***Phases of Fire Support in the Attack.*** At divisional level, fire support for an attack is usually divided into three phases:

a. *Artillery Preparation of the Attack.* The preparatory bombardment is planned to cover the approach and deployment of the tank and MR troops and their advance up to the enemy forward positions. It aims at winning fire superiority by suppressing enemy artillery and mortars and strongpoints and by disrupting command and control. The preparation is planned at the highest possible level to ensure coverage of all important targets, co-ordination and logistic economy. It is a timed programme lasting up to an hour (though all weapons will not be firing continuously) and usually falls into three phases. In the first phase fires the enemy's first line companies and artillery, mor-

tars and command posts of first echelon battalions are targeted. The second phase is concentrated on targets in depth, such as second echelon battalions and especially their armour and anti-tank weapons. In the third phase fire shifts back to the first line of platoon positions and command posts of first echelon battalions.

b. *Artillery Support of the Attack.* This phase lasts from the attack on the forward positions until the first echelon brigades or regiments of the defence have been broken through - the furthest ahead that pre-planning is possible. The aim is to maintain fire superiority and ease the advance of the manoeuvre units. Concentrations will be fired on call, rather than to a timed programme, and some decentralization of assets will take place with RAGs being released to supported sub-units.

c. *Artillery Accompaniment of the Attack.* This phase begins when the enemy's forward brigades have been penetrated or bypassed and continues thereafter. It is a manoeuvre phase during which the artillery moves forward with its supported units. While RAGs will probably be broken up and directly subordinated to manoeuvre battalions, a DAG will be maintained to provide counter bombardment and a heavy, flexible concentration of firepower to meet large counter-attacks, suppress unexpected resistance or support the committal of a second echelon. Accompaniment is the normal method of artillery support in fluid operations, until organized defences are encountered.

4043. ***Aviation.*** Aviation operating in direct support of GENFORCE ground forces is classified as "tactical" or "army" aviation.

a. *Tactical Aviation.* These are fixed wing fighter and fighter-bomber aircraft and, mostly, heavy transport helicopters subordinated to a front headquarters. Fixed wing aircraft are primarily targeted against enemy helicopters and their bases, command and control systems, reserves and other targets in depth of the enemy corps area. They may also be used against airborne or ground forces penetrating into the GENFORCE rear area.

b. *Army Aviation.* These are helicopters subordinated to an army headquarters. Typical missions include:

(1) Destruction of enemy tanks and other armoured targets and personnel and equipment in defensive positions; strikes against enemy air-mobile forces; destruction of enemy helicopters in the air.

(2) Transport of air assault forces and other sub-units, evacuation of wounded, delivery of materiel and ammunition.

(3) Reconnaissance, especially chemical and engineer reconnaissance and observation across the FEBA (such missions do not usually involve flying beyond the FEBA).

(4) Special missions such as correcting fire for artillery, laying minefields or smokescreens.

4044. ***Resources.*** A regiment in contact (in attack or defence) can expect to be allocated 16-30 tactical aircraft sorties and up to 40-46 army aircraft sorties per day. As always, the size of the allocation will depend on whether or not the regiment is on a main axis.

4045. ***Command & Control.*** Aviation-ground forces coordination is performed by the "Combat Control Group" (CCG), located at army and sometimes divisional headquarters. The CCG is the point-of-contact between the ground commander and the aviation formation. It passes tasks from the ground commander to aviation bases and alerts ground formations to the presence of friendly aircraft in their area. Forward Air Controllers are sent forward from the CCG to a headquarters when sorties are allocated to it. FACs refine target details, warn of the approach of friendly aircraft, assist in marking targets and pass instructions directly to the aircraft. Working with the ground commander and his Chiefs of Artillery and Air Defence, the FAC arranges for the suppression of enemy air defences and agrees a number of coordination points and lines as shown in Diagram 4-8. FACs normally work down to regimental level, but will join battalion headquarters when air assets are allocated to them, eg when acting as a forward detachment or heliborne air assault force. Within a regiment's sector an FAC can handle one flight of fixed wing aircraft, attacking a single target, and two helicopter flights striking up to two targets at any one time.

See Diagram 4-8

4046. ***Reaction Times.*** Army aviation tends to operate from forward arming and refuelling points within 40-50 kms of the FEBA. A flight of helicopters held at the highest state of readiness should reach its target in 15-20 minutes; a full squadron requires up to 25 minutes. Preparation of a second strike requires approximately an hour. Tactical aviation, if at the highest readiness state, should reach its target in 20-30 minutes.

4047. ***Aviation Capabilities.*** Examples of the rules of thumb applied by GENFORCE commanders when planning air support include the following:

a. A pair of Mi-24 helicopters can destroy 5-6 tanks in the open, or 3-4 dug-in tanks, in one sortie.

b. A pair of Mi-8 helicopters can carry 7.2 tons of supplies or 48 men with normal equipment.

c. A helicopter can reconnoitre 2-3 areas covering a total of 50 sq kms in a sortie.

d. A pair of Mi-8 helicopters can lay a minefield 400 m by 60 m or 800 m by 30 m.

e. One sortie by a tactical aviation flight of 4 aircraft can:

(1) Destroy up to 16 helicopters on 1-2 sites.

(2) Suppress a tank or motor rifle company in the open, or one platoon defensive position.

(3) Destroy 1-2 brigade command posts.

(4) Delay the movement of a tank or motor rifle battalion for 1 hour if a by-pass is possible or up to 3 hours if a by-pass is not possible.

4048. ***Aviation Support of the Attack.*** Air strikes are combined with artillery and other fire in a single, coordinated plan for the fire destruction of the enemy. The same phases are used as in artillery fire planning.

a. *Aviation Preparation of the Attack.* The use of aviation in this phase of the battle is not favoured by GENFORCE. Friendly artillery must cease fire, granting the enemy a breathing space, and smoke and dust on the battlefield reduce visibility and the effectiveness of air strikes. It is considered that using aviation in this phase wastes its mobility and flexibility and makes it very vulnerable to enemy air defences. If it is necessary to plan air strikes in this phase in order to achieve the required level of destruction of the enemy, no more than 10% of available resources will be used, in a single strike.

b. *Aviation Support of the Attack.* This phase provides more opportunity to use the full powers of aviation and at the same time artillery begins to lose its effectiveness once friendly forces have penetrated 3-4 kms into the enemy depth. Tactical aviation will concentrate on enemy reserves and depth positions and artillery firing positions. Combat helicopters will be held on call in the air or at forward sites for strikes in pairs or flights on tanks, other armoured targets and anti-tank weapons and to deal with counter-attacks. A proportion of transport helicopters will be readied to act as airborne mobile obstacle detachments, laying minefields in the path of enemy counter-attacks.

c. *Aviation Accompaniment of the Attack.* Here aviation comes into its own, for GENFORCE calculates that once the tempo of the attack into the depth reaches 5 kph only half the artillery will be available to support it. At 8 kph and more less than 30% of the artillery is available. It is considered that the most effective way to use aviation in this phase is from high readiness states on the ground, on call for strikes on targets whose destruction will best assist the development of the offensive. Keeping helicopters on call in the air wastes resources, except in the case of a crucial battle in the depth, for example to assist a forward detachment to seize a river line.

4049. ***Air Defence.*** GENFORCE writers point out that over 50% of firepower in the tactical zone may be air delivered. Just as GENFORCE puts a high value on the impact of its own airpower, it stresses the need to prevent an enemy using his air force to disrupt GENFORCE ground forces.

4050. ***Deployment.*** GENFORCE recognizes that it is impossible to defend everywhere adequately; priorities must be established and these may change as the battle develops. A likely use of assets is as follows:

a. *Divisional Air Defence Regiment.* The regiment will give some cover for the entire divisional area, overlapping into flanking divisions' areas. Its batteries will, however, concentrate on defending, in rough order of priority, the divisional CP, main axis manoeuvre units, the DAG, second echelon and minor axis units and the logistic tail. Typically, 2 or 3 batteries might be forward with the first echelon regiments, coming as close as 5 kms to the FEBA, with the remainder protecting other targets. If the battle becomes highly mobile and fragmented, or if units are despatched on semi-independent missions divisional air defence batteries may be placed under the command of manoeuvre units. The more flexible SA-8 systems may be used in pairs or individually for specific missions, such as ambushes.

b. *Regimental Air Defence Battalion.* The SA-13 battery is likely to cover regimental assets, especially the CP and RAG. The 2S6 and SA-16 batteries may be deployed to cover forward battalions and some elements may receive independent tasks, acting in ambush on likely avenues of approach.

c. *Battalion Air Defence Platoon.* The motor rifle battalion's air defence platoon is normally deployed by sections to cover first echelon companies and the CP. The sections move behind the companies they are supporting.

4051. ***Anti-tank Support.*** During the fire preparation of the attack anti-tank weapons may be included in the fire plan to hit armoured target in the enemy's front line defences. Once the attack begins anti-tank weapons are most likely to be used in an anti-tank reserve, operating with a mobile obstacle detachment, (MOD), to block any enemy counter-attack.

a. Anti-tank reserve. In motor rifle divisions and regiments the anti-tank battalion usually forms the anti-tank reserve. Most motor rifle battalions have an anti-tank platoon, which can be used in the same role. Tank formations and units, lacking specialist anti-tank elements, use a tank sub-unit in the role.

b. *Mobile Obstacle Detachment.* This is a temporary engineer grouping intended to create minefields and demolitions. MODs are generally equipped with GMZ and PMZ-4 mine-layers and trucks carrying mines, explosives and other equipment. They are sometimes reinforced with motor rifle troops for close protection and as extra labour.

4052. ***Tactical Handling of Anti-Tank Reserves.*** The anti-tank reserve and MOD are usually held close together under cover, or at least in dead ground a short distance behind the first echelon, moving forward by bounds. When there is an obvious threat to a flank they will be located close to that flank. The anti-tank reserve and MOD will normally prepare two or three deployment options on likely avenues of approach for enemy armour but will also be ready for missions which arise suddenly during the course of the battle. When ordered into action the anti-tank reserve deploys on suitable ground while the MOD lays a minefield 500 metres to a kilometre in front. GENFORCE believes that laying a minefield in the enemy path at the last moment is more economical with resources and exploits the element of surprise. A typical MOD-laid minefield would consist of 800 anti-tank mines, laid in three rows on a front of 800-1200 metres. An ATGW platoon normally deploys on an approximately 400 m frontage and a three platoon battery can cover up to 2,000 m.

4053. ***Engineer Support.*** The work of engineers in MSDs and MODs has already been described above. Besides these tasks engineer support in the offence includes specialist reconnaissance, preparation of assembly areas, artillery firing positions &c, preparing routes, including roads running parallel to the front to permit artillery and other units to re-deploy laterally. Engineer troops also play a vital role in concealment and deception; they camouflage real locations and create false ones, using dummy equipment and local material.

4054. ***Chemical.*** GENFORCE possesses a considerable armoury of chemical weapons and an effective force of chemical defence troops. The decision to use chemical weapons will be taken at the highest level, but, if chemical release is given, strikes will be planned within the divisional area in accordance with the army commander's concept of battle and will require his approval.

4055. ***Offensive Use of Chemical Weapons.*** Chemical rounds are available for all GENFORCE artillery systems of 122 mm and larger calibres. MRLs and missile systems are particularly effective delivery systems, especially against depth targets. Ground-attack aircraft can deliver chemical bombs or off-target spray attacks. Likely chemical targets include:

a. *Non-persistent Agents.* These are likely to be employed against the following targets:

(1) Strongpoints which have to be attacked and supporting positions in areas the attacker may wish to cross. HE will be mixed with chemical rounds to achieve chemical surprise.

(2) Airborne DZs and heliborne LZs and air defence units on the fly-in route, probably just before the assault.

(3) Headquarters, communication centres, reserves, artillery positions and administrative areas &c for harassing purposes.

(4) Civilian population centres, to create panic and a flood of refugees.

b. *Persistent Agents.* These could be used against the following tactical targets:

(1) Airfields which the attacker does not intend to use immediately.

(2) Headquarters and communication centres.

(3) Artillery and air defence units, probably in combination with HE and/or remotely-delivered mines.

(4) Defiles, to restrict use or hamper enemy denial efforts. Again, such strikes may be combined with remotely-delivered mines.

(5) Possible concentration areas for enemy counter-attacks.

(6) By-passed units.

4056 ***Chemical Defence.*** All GENFORCE troops are equipped with effective individual protection kits and combat vehicles have filters and over-pressure systems. Company-sized sub-units have sections trained in basic chemical reconnaissance and de contamination and there are specialist units at regimental and divisional levels to carry out these tasks.

a. *Chemical Reconnaissance.* Regimental chemical defence companies and divisional battalions are equipped with BRDM-2RKh and RKHM vehicles, which may be attached to standard recce patrols or act independently. Chemical recce assets are deployed throughout a formation's area. Helicopters are also used.

b. *Decontamination.* Specialist vehicles such as TMS-65, ARS-14 and DDA-66 are organized in chemical defence reserves located throughout a formation's deployment. A TMS-65 platoon can decontaminate a tank battalion in 30-90 minutes and a motor rifle battalion can be treated in 2 hours using ARS-14s.

4057. ***Smoke Generation.*** Chemical troops are also responsible for laying smoke screens in support of attacks. Smoke is laid to cover manoeuvre, screen assembly areas, to protect troops in the final stages of an assault and as deception. A wide range of systems is available for smoke generation and the performance of some typical systems is listed in Tables 4-6a & b.

TABLE 4-6A CHARACTERISTICS OF SMOKE POTS

Characteristics	Smoke Pots						
	DM-11	DMKh-5	DSKh-5	BDSh-5	BDSh-5kh	BDSh-15	BDSh-15kh
Weight (kgs)	2.4	2.7	7.5	40	48	41	49
Intensive smoke generating time (mins)	5-7	5-7	15-17	5-7	5-7	15-17	15-17
Length, impenetrable screen (m) (a)	up to 50	up to 50	up to 70	250-300	350-450	125-150	200-250

Note: (a) Assumes average conditions

TABLE 4-6B NUMBER OF SMOKE POTS NEEDED TO SCREEN ONE KILOMETRE FOR ONE HOUR

Wind Direction/ Met Conditions	DM-11			DMKh-5		
	Frontal	Oblique	Cross Wind	Frontal	Oblique	Cross Wind
Favourable (a)	600	500	300	400	300	200
Average (b)	800	600	400	600	450	300
Unfavourable (c)	1200	900	600	900	600	450

Wind Conditons/ Met Conditions	DSKh-5			BDSh-5/15		
	Frontal	Oblique	Cross Wind	Frontal	Oblique	Cross Wind
Favourable (a)	150	100	75	70	50	25
Average (b)	200	150	100	90	60	30
Unfavourable (c)	300	200	150	120	80	40

Notes (a) Favourable - wind speed of 204m per second and inversion

(b) Average - wind speed of 5-8m per second and isothermia or slight inversion

(c) Unfavourable - wind speed of under 1.5m per second or over 9m per second, strong convection or heavy snow or rain

4058. ***Flame Weapons.*** Flame weapons are also a chemical troops, responsibility and sections armed with flame-throwers (such as RPO) may be attached to assaulting units or to anti-tank reserves from the divisional chemical defence battalion.

4059. ***Radio-Electronic Combat (REC).*** Radio-electronic combat is a vital part of all GENFORCE offensive planning. The REC concept includes detection and location of enemy electronic systems, their physical destruction or jamming and defensive measures to protect GENFORCE systems. Most REC assets are held at army and front level but a growing range of systems is available to the GENFORCE divisions.

a. *Radio and Radar Interception and DF.* The divisional reconnaissance battalion includes a radio and radar intercept company in which TURN Series vehicles are increasingly being replaced by MT-LBu SIGINT variants. These systems are effective out to 30-80 kms, depending on terrain masking. The accuracy of location is not generally good enough to target artillery, though it will suffice to task jammers or air or ground reconnaissance. In the divisional artillery regiment's observation battery the POLE DISH DF system is accurate enough to provide target data for artillery, especially MRLs, at ranges depending on the power of the transmitting radar.

b. *Jamming.* The divisional REC company is equipped with 9 SPR-1 jammers and an intercept platoon to target them. Divisions on main axes will be supported by higher formation jamming assets.

c. *Target Priorities.* REC strikes will be coordinated with the fire plan for the attack and will also be used to cover other phases of the battle, such as the commitment of second echelons or air mobile forces. Probable target priorities are:

(1) PGM systems.

(2) Command and control systems.

(3) Artillery, tactical aviation and air defence systems.

(4) Reserves.

d. *Defensive Measures.* GENFORCE is well-practised in the use of electronic deception and protective measures.

4060. ***Logistic Support.*** GENFORCE believes that a future war will be characterized by the lack of a front line, with combat spreading unevenly over a deep and wide area in a series of intense but short battles, rather than the steady attrition of all forces. Their logistic system is designed to cope with such a battlefield and operates in accordance with the following principles:

a. *Centralized Control.* The bulk of supplies and transport resources are concentrated at higher formation levels. This enables commanders to concentrate support where it is needed, if necessary switching axes rapidly to take advantage of unexpected opportunities.

b. *Forward Delivery.* It is the responsibility of higher commanders to keep their subordinates supplied, using their own means. Thus army transport will deliver forward to divisional dumps or straight to regiment to save time. The system also relieves the divisional and lower commanders of responsibility, allowing them to concentrate on tactical concerns.

c. *Maintenance of Stock Levels.* A division goes to war with 3-5 days of supplies (depending on the intensity of combat) as mobile stocks on vehicles. These are replenished daily or even left untouched if army can deliver in advance what is needed for the fighting to come. This enables divisions to tolerate a temporary severance of their lines of communication and continue fighting.

d. *Supply Priorities.* Supply priorities are very strictly: ammunition, POL, technical supplies, rations, non-technical supplies. In highly mobile operations, eg a pursuit, the priorities of ammunition and fuel might be reversed. Non-essentials will not be delivered if this would reduce the ability to provide essential combat supplies; this could include rations where these can be obtained by foraging, for instance.

e. *Forward Positioning of Support Elements.* From army level downwards, medical and equipment recovery and repair facilities are expected to keep up with the advance. At each level, they move forward to the last areas of battle and treat casualties more or less in situ. Priority is given to returning light casualties to battle (though life saving treatment will be given to the seriously wounded).

f. *Force Restoration.* GENFORCE commanders are sensitive to loss rates. Too high a level of casualties over a short time span (eg 35% within 48 hours) will be such a shock to the system that the whole unit will become combat ineffective. They prefer to replace units before they reach the danger point and reorganize them as smaller organizations, amalgamate them with others or reconstitute them with personnel from hospitals and repaired equipment. Units are rarely kept up to strength by the return of their own wounded and a trickle system of replacements.

4061. ***Deployment.*** A division's logistic units spread over an area of 50-80 sq kms and may move twice in 24 hours if the advance is suitably rapid. A regiment's tail occupies an area of 3-5 sq kms and may have to move 3-5 times a day. A guide to the deployment of logistic elements is given in Table 4-7.

4062. ***Supply Holdings.***

a. Ammunition.

(1) Ammunition is accounted for in units of fire. The units of fire for some important weapons system are shown in Table 4-8.

TABLE 4-7 DEPLOYMENT OF LOGISTIC UNITS IN THE OFFENSIVE

(Average distances in km from area)

Ser	Type of Unit	Divisional	Regimental	Battalion	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Supply Point	23-50	10-15		There should be not more than 40 km between div and regt supply points.
2	Ammo Point	25-30	10-15		
3	POL Point	20-40	10-15		
4	Assembly Point for damaged vehicles	5-8	-		
5	Technical Obsn Point and Repair - Evacuation Group	Up to 8	1-2		
6	Medical Aid Post	10-20			Up to 6 1-2 Regt aid post will allocate casualty collecting dets to bn sectors.

TABLE 4-8 NUMBERS OF ROUNDS IN SELECTED UNITS OF FIRE

A-Tk Wpns	Nos Rds	Inf Wpns	Nos Rds	Arty Wpns	Nos Rds
SPIGOT	4	AK-74	400	120 mm Mortar	80
SPANDRELL	25	RPK-74	1,200	122 mm Howitzer	80
SPG-9	80	PK	2,000	152 mm Howitzer	60
MT-12	60	RPG-7V/16	20	122 mm MRL	120

AD Wpns	Nos Rds	AFV	Nos Rds
SA-6	3	T-64/72	40
SA-8B	6	(125 mm)	
		BMP (73 mm)	40
		BMP ATGM	4
		BTR (14.5 mm)	500

Note: Chemical ammunition for artillery is not part of a normal unit of fire. It is supplied separately as required.

TABLE 4-9 AMMUNITION HOLDINGS WITHIN A DIVISION (IN UNITS OF FIRE)

Place	Arty	Tk	APC	ATGM	SAA
With Weapons	1½	1	1	1	½
In Bn and Rgt Tpt	3	2	2	2	1½
In Div Tpt	1	1	1	1	1
Total	5½	4	4	4	3

(2) The number of units of fire within a division would be approximately those shown in Table 4-9.

b. *Fuel.* POL is accounted for in refills, ie the amount needed to fill each vehicle (one fill for a tank or APC gives the vehicle a 500 kms cruising range on roads). A division starts with 3 refills, one in the vehicles themselves, one in regimental and one in divisional transport.

4063. ***Medical.*** Help is from the rear forward, with regimental and divisional units moving to the areas with most casualties. Responsibility for evacuation rests with the next higher organization (which generally uses returning load carrying vehicles because ambulances are in short supply).

4064. ***Recovery and Repair.*** In a short war, GENFORCE will expect relatively few non-battle casualties as most combat equipments are little used in peacetime, being kept in short term preservation. They rely heavily on rapid repair to keep up overall equipment strengths. A regiment collects its damaged vehicles and does what light repairs it can before continuing the advance. A division works in a similar fashion, leaving unfinished work to army. The bulk of repair resources are based at army level and are assigned to key axes.

SECTION 5 - THE MEETING BATTLE

4065. ***Definition.*** In GENFORCE doctrine a meeting battle occurs when both sides are trying to fulfil their mission by attacking. On the more open battlefield expected in future wars it will be an increasingly common form of battle and is likely to occur in the following circumstances:

a. At the outbreak of hostilities when one side has been surprised and is trying to deploy into forward defensive areas.

b. After a breakthrough into the depth of the enemy defence when his reserves are deploying to blocking positions or to counter-attack.

c. During an enemy withdrawal, when he is outflanked.

d. In the defence, when a counter-attack is launched against an enemy breakthrough.

4066. ***Characteristics.*** In the GENFORCE view, the chief characteristics of the meeting battle are as follows:

a. Both sides will be attacking from the march, leading to a close quarter battle in which speed and surprise will be the crucial factors, closely followed by numbers.

b. There will be an intense struggle to seize the initiative with each side trying to impose its will through offensive action.

c. The battle will be one of manoeuvre, with both sides having to accept open flanks and quite possibly gaps in their deployment as the action spreads over a wide area. As neither side will enjoy the advantage of having chosen and prepared the ground (and this will apply even if one goes over to the defensive at the last minute) there will be everything to be gained from bold manoeuvre.

d. For most, or all, of the time the situation will remain fluid and obscure. Intelligence will be limited and will date rapidly. The GENFORCE conclusion from this is not that commanders should wait until the situation is clarified but that they should attack vigorously into the gaps and flanks of the enemy deployment. Given that there may be sudden and dramatic developments, special reserves, in particular anti-tank, will be needed to meet the unexpected. Only an uncompromising commitment to the offensive, however, will ensure that most of the unpleasant surprises happen to the enemy; the gains from offensive action out-weigh the risks.

e. The time available for decision-making and deployment will be very limited because victory is likely to go to the side that gets its blow in first and builds up its combat power in the decisive area fastest. There is a premium on simple deployment drills.

f. Meeting battles are expected to be decisive. The defeated side, outflanked and penetrated deeply from the front, with no prepared positions to fall back on, and with massive command and control problems, will find it very difficult to go over to the defensive or withdraw. Such a force will not survive for long as a coherent combat grouping.

4067. ***Conduct.*** As the GENFORCE unit advances in tactical march formation, the action in a meeting battle usually follows the sequence below. Diagram 4-9 illustrates a typical meeting battle.

See Diagram 4-9

a. *Location and Identification of an Approaching Enemy.* First reports of an approaching enemy and thus of the possibility of a meeting battle are likely

to come from higher headquarters. One of the first reactions of the GENFORCE commander will be to direct his own reconnaissance assets to provide more detail of the enemy's location, movements and intentions. Thus, for example, a regiment might be warned of the approach of an enemy force by its parent division and send out additional separate reconnaissance patrols to contact the enemy. Similarly a battalion might learn of an advancing enemy battalion from its regimental CP and the commander could well decide to send out at least an additional combat reconnaissance patrol. In the worst case a battalion acting as a vanguard or forward detachment might learn of an approaching enemy only from a contact report from its own reconnaissance or forward patrol. In such a case little more than 10-15 minutes may be available to the commander to organize his force for the meeting battle.

b. *Decision to Initiate a Meeting Battle.* A commander may be ordered to undertake a meeting battle or may have to take the decision on his own initiative, although in the latter case his decision will have to be confirmed as soon as possible by his senior commander. Meeting battles will often arise in the course of a march and a commander who has not considered the possibility of a meeting battle in planning his order of march may be fatally handicapped. However the mission to conduct a meeting battle may also be received while waiting in an assembly area, which will allow more detailed planning.

c. *Selection of the Point of Contact.* The GENFORCE commander will assess the locations of the opposing forces and their speed of advance. Using a nomogram or a mathematical calculation, possibly with the assistance of a programmable calculator, he can plot the likely line of contact on his map. From a map assessment he determines the location of the key terrain in that area. It is vital to seize this ground before the enemy and this task may be allocated to leading march security elements.

d. *Engagement of the Enemy.* The intention is to assault the enemy's main body and destroy or disorganize his force, save perhaps for some isolated pockets of resistance. Speed and shock action are paramount. The forward march security elements can occupy a blocking position and begin engaging the approaching enemy. Attached artillery will also deploy as rapidly as possible and open fire. Anti-tank elements should be well forward in the march formation, so that they may join in the task of pinning the enemy force. The commander is likely to join his forward element and try to judge the situation for himself. The main body should deploy to the selected assault position without delay and strike the enemy's main body as it advances to support its forward elements. Ideally the enemy is then distracted and assaulted while on the move or deploying, preferably from a flank or even both flanks. If flank attacks are impossible a frontal attack will be launched, but the commander will still try to introduce an element of surprise. The main body should act together, in order to ensure an effective blow is delivered. A mounted attack is the rule in meeting battles.

e. *Facing a Superior Enemy.* The attacking force is not expected to attain the degree of superior force over the enemy required in attacks on a defending enemy. A force which has parity with the enemy, or is even slightly inferior, can achieve victory if it holds the initiative. However, if the enemy is significantly superior in strength, or pre-empts the GENFORCE unit in seizing the key ground, the GENFORCE unit will try deploy on a favourable firing line and check the enemy advance. It must then continue to disrupt the enemy's deployments and try to create favourable conditions for a senior commander to introduce new forces into the battle.

4068. ***Subsequent Action.*** The meeting battle ends when one side is destroyed or adopts a new tactic, such as establishing a defensive position or withdrawing. An attack from a position of close contact could then be mounted or, depending upon the situation, a pursuit or withdrawal.

SECTION 6 - PURSUIT

4069. ***General.*** GENFORCE doctrine stresses that the decisive defeat of an enemy force can only be achieved by vigorous and continuous exploitation of tactical advantages. The pursuit phase will begin when the enemy is either routed or attempts to break contact in a pre-planned withdrawal. All GENFORCE commanders have a duty to maintain contact and are expected to take up the pursuit without further orders.

4070. ***Conduct.*** In order to encircle and destroy withdrawing enemy forces, they must be slowed down enough for withdrawing GENFORCE units to outstrip them and fall on their flanks and rear. With this in mind, when the enemy begins to withdraw GENFORCE troops will:

a. Follow-up closely, mainly with motor rifle troops, maintaining constant pressure and forcing the enemy to deploy.

b. Use airborne and heliborne troops, forward detachments, air and artillery and possibly chemical strikes to block or delay the enemy at defiles, river crossings and other critical points on withdrawal and destroy him piecemeal.

c. Attempt to overtake the retreating columns with armour-heavy forces penetrating on parallel routes. These then attack the enemy's flanks and rear from the march, cut off his withdrawal and destroy him piecemeal.

4071. ***Routes.*** Pursuit may be direct, ie following the same axis as the withdrawing enemy, on parallel axes or more usually a combination of both. Within a division, one regiment may engage in direct pursuit while others feel for outflanking routes as early as possible after a breakthrough.

4072. ***Reconnaissance and Forward Detachments.*** The reconnaissance effort will be intensive, concentrating on enemy withdrawal routes, which may be covered by static OPs. Forward detachments of regimental or reinforced bat-

talion strength will be widely used. In a division, up to a regiment might be sent out as a forward detachment 40-60 km ahead of the main body. Regiments might send out reinforced battalions up to 30 km ahead on each pursuit axis. Forward detachments have a limited combat power and will usually avoid becoming heavily engaged and will press on to their designated objectives. Their tasks will be to out-strip the enemy, capturing water crossings, defiles, route centres, urban areas and airfields in his rear.

4073. ***Main Forces.*** Main bodies will advance in tactical march formation, moving as fast as possible. After a breakthrough, gaps between divisions and regiments are likely to increase and each will be given an axis of pursuit rather than a zone of advance. GENFORCE commanders are very conscious of the vulnerability of their open flanks in this situation and anti-tank reserves and mobile obstacle detachments will be deployed to the flanks. Regiments will operate with considerable tactical independence and a uniform rate of advance will not be expected on all axes. Some units may launch a pursuit while others are still engaged in a breakthrough battle, or meeting enemy counter-attacks.

4074. ***Combat Support.*** During a pursuit artillery will be mostly decentralized to regimental artillery groups and to forward detachments, though much of the burden of fire support will fall upon the attack helicopters. In some circumstances part of the artillery may be further decentralized and directly subordinated to first echelon battalions. Thus the bulk of the artillery will move well forward, either with vanguards or at the head of main body columns, in order to be able to deploy in support of leading elements as rapidly as possible. In addition to obstacle clearing to enable the pursuit to proceed at full speed, and to creating obstacles to prevent or forestall counter-attacks, engineer detachments will be deployed with forward detachments, or deployed separately by helicopter, to set demolitions and lay mines on enemy withdrawal routes.

SECTION 7 - ATTACKING THE ENEMY IN DEPTH

4075. ***General Principles.*** GENFORCE doctrine lays great stress on the need to attack the enemy throughout the whole depth of his deployment. Such attacks throw the enemy off balance and weaken his resistance to the GENFORCE formations attacking his front line. The most powerful and long-ranging strikes are organized by operational commanders and are described in detail in Part 2. Tactical commanders, however, are also expected to plan attacks on the enemy to the full depth of their own areas of responsibility.

4076. ***Targets.*** The highest priority targets for attack at divisional level and below are as follows:

a. *Weapons of Mass Destruction & PGMs.* Enemy weapon systems capable of delivering nuclear, chemical or biological warheads or precision-guided munitions become priority targets if identified within the division's area of responsibility.

b. *Helicopter Forward Operating Bases.*

c. *Headquarters and Other C^3I Facilities.*

d. *Reserves & Second Echelons.*

e. *Vital Ground.* Measures may be taken either to occupy vital ground or to deny its use to the enemy.

4077. ***Resources.*** To attack such targets the divisional commander will have available a range of organic and attached systems:

a. *BM-21 battalion.* The battalion can deny ground or delay reserves & counter-attacks with remotely delivered mines or suppress area targets.

b. *Forward and Raiding Detachments.* Once the division has achieved a breakthrough, or when facing a non-continuous defence, forward detachments (usually a reinforced battalion) can be sent to seize key ground, such as river crossings or defiles; raiding detachments in reinforced company or battalion strength can be organized to attack key targets.

c. *Air Strikes.* Fixed wing aircraft, allocated to support the division, provide the commander with his longest range strike capability. Helicopters are unlikely to be used in any depth beyond the FEBA unless the cohesion of the enemy's air defence system has been heavily disrupted. As exceptions to this rule helicopters may support tactical airborne assaults, using corridors in which the enemy air defences have been suppressed and a limited number of deeper attacks may be attempted by night.

d. *Tactical Airborne Assaults.* With transport helicopter assets subordinated to the division the commander may organize tactical airborne assaults, based on a motor rifle sub-unit. Such assaults may be used to seize vital ground, destroy key targets or conduct raids, usually acting in cooperation with a forward detachment or other ground element. A reinforced company might be landed up to 10 kms and a reinforced battalion up to 20 kms beyond the FEBA. The Army commander might use an air assault battalion up to 50 kms deep on the division's axis and require the division to coordinate operations with it. Tactical airborne assaults are described in greater detail below.

4078. ***Conduct of Tactical Airborne Assaults.*** (See Diagram 4-10) "Vertical envelopment" is an increasingly familiar element in GENFORCE tactical thinking. Motor rifle troops frequently train in heliborne attacks and standard procedures for the conduct of tactical airborne assaults have been developed. They are outlined in the following paragraphs.

4079. ***Preparation of the Assault.*** On being ordered to conduct a tactical airborne assault a motor rifle company or battalion will occupy an assembly area, 20-30 km behind the front line. A battalion assembly area occupies up to 10 sq km, a company assembly area up to 3 sq km. The assembly area includes a concentration area for each company, where it is joined by any reinforcing elements, and main and alternate pick-up points for the helicopters.

4080. ***Grouping.*** Assault sub-units can expect considerable reinforcements. A motor rifle company may be reinforced with man-pack ATGW and SAM systems and a platoon of mortars. Battalions will often receive a battery of towed artillery. In addition engineer elements to clear or create obstacles and reconnaissance sub-units are usually added. The reconnaissance assets may include specialist chemical reconnaissance troops. An FOO and an FAC are considered essential parts of the assault force. Additional ammunition and other supplies will be issued, depending on the demands of the mission.

4081. ***Missions.*** The assault force is usually allocated an immediate and a subsequent mission. The immediate mission will include the complete destruction of any enemy in the area of the landing site and seizure of a line or area of ground, or the destruction of a primary target. The subsequent mission will be to hold the line or area until the arrival of friendly forces or to destroy a further target. (See sub-para 4077 d. for typical objective depths).

4082. ***Helicopter Lift.*** The norms for the helicopter lift requirement are:

a. *Motor Rifle Company with a Mortar Platoon:* 4 x Mi-8; 3 x Mi-26. 10-15 minutes are required to load the heavy equipment.

b. *Motor Rifle Battalion & Reinforcements:* Up to 20 x Mi-8; 17-18 Mi-6 or Mi-26. The loading time for equipment should be 25-30 minutes.

4083. ***Combat Formation.*** In the air the helicopters form up into the following elements:

a. *Assault Group.* Composed of transport helicopters in two sub-groups:

(1) The Forward Group, assigned to clear the landing site.

(2) The Main Body.

b. *Support Group.* This may include reconnaissance helicopters, heliborne jammers and combat helicopters to suppress enemy air defences.

The assault group normally flies in a single column, with the forward group 10-20 minutes ahead of the main body. Support elements fly ahead or to the flanks of the column as necessary.

4084. ***Camouflage & Concealment.*** If helicopter resources permit a group may simulate another assault force operating on a different axis.

4085. ***Fly-In Route.*** A flight corridor 2-4 km wide is required. It is chosen in a sector where the enemy air defences are weakest or have been reliably suppressed and the terrain allows the force to fly at very low (10-15 m) or low (up to 300 m) heights. Helicopters normally fly at a speed of 4 km per minute which, allowing for manoeuvring in flight, permits an average rate of advance in the corridor of 3 km per minute.

4086. ***Air-Ground Coordination.*** A number of coordination lines are planned to assist the safe progress of the air assault. They include:

a. *Line for Checking Fire by Own Air Defences.* This is set just before the rear boundary of the relevant air defence zone. (Friendly fixed wing aircraft will also vacate the flight corridor.)

b. *Line For Checking Own Artillery Fire.* This is set short of the DAG and RAG locations. The last salvo fired will be smoke rounds and friendly artillery fire pauses until the assault force has crossed the enemy front line.

c. *Line of Deployment into Assault Formation.* Helicopters deploy from column into their landing formation.

4087. ***Landing Areas.*** A main and an alternative landing area will be allocated. The size of the landing area may be up to 2 km by 2 km for a reinforced company and 5 km by 5 km for a battalion. A company will require a main and an alternate drop-off point within the landing area, while a battalion's landing area may have 2 or 3 main drop-off points and alternates.

4088. ***The Forward Group: Composition.*** A forward group for a company-sized operation may be up to a platoon in strength while a battalion landing is usually initiated by a two-platoon forward group. In both cases reinforcements of air defence troops with man-pack SAMs, sappers, reconnaissance troops and an FOO are likely to be attached.

4089. ***The Forward Group: Tactics.*** The forward group lands under cover of supporting armed helicopters and clears the landing site of the enemy. Air defence troops take up fire positions and sappers recce the area and, if necessary, clear it of mines and other obstacles. Any attached reconnaissance patrol moves off immediately to reconnoitre the axis on which the main body will operate towards the objective.

4090. ***The Main Landing.*** The main body lands under cover of the forward group, combat helicopters, fixed wing air strikes if available and artillery fire, if in range of friendly artillery. The landing may be directly on the objective, in its immediate area or some short distance away from it, depending on the tactical situa-

tion and the commander's plan. A reinforced company requires 5 minutes to land its men and equipment; a battalion needs 10-15 minutes. Where the mission is to hold ground, the main body will secure the area and begin defensive preparations. A liaison party will be sent to an RV to meet and guide forward any ground forces ordered to cooperate with the assault landing.

4091. ***The Helicopter Force.*** Once the assault force has disembarked the transport helicopters and a proportion of the combat helicopters will return to friendly territory. The remainder of the combat helicopters remain on call to support the assault force for 20-40 minutes before they too return.

SECTION 8 - THE OFFENSIVE IN SPECIAL CONDITIONS

4092. ***Introduction.*** The standard GENFORCE tactics described above require modification in several types of special conditions. Attack frontages, depths of objectives &c all vary from the norm. The most significant change in GENFORCE tactical practice, however, is that in special conditions it is generally necessary to decentralize decision making and control of assets to lower levels of command than is normally considered desirable. This section describes typical variations for the most common forms of combat in special conditions.

RIVER CROSSINGS.

4093. ***General.*** Forcing a crossing over a water obstacle is a very special and complex form of attack. Whenever possible GENFORCE will try to seize unguarded or lightly-defended crossing sites, using air mobile forces or forward detachments (and often both acting in cooperation). Motor rifle battalions are favoured as forward detachments with such a mission, because of their amphibious equipment, but they will normally be reinforced with bridges or ferries to carry attached tanks and other heavy equipment across the obstacle.

4094. ***Opposed Crossings.*** If a water obstacle is strongly defended an assault will not usually be mounted below divisional level; battalions and even regiments lack the resources for such a task. Even divisions may expect to receive additional support from army level, especially when advancing on the main axis. The conduct of the crossing resembles that for any major attack, with the additions and variations described below.

4095. ***Reconnaissance.*** More detailed reconnaissance is required, especially by the engineers. As well as identifying suitable crossing sites they must find routes, assembly areas, areas for sealing vehicles, hides for crossing equipment, loading areas for ferries &c. Recce patrols will also probe for weakly-held sectors of the river line and small groupings may attempt to seize bridgeheads in such sectors ahead of the main assault.

4096. ***Frontages.*** Divisional and regimental frontages will usually be wider than in conventional attacks because of the need to find suitable crossing sites. At sub-unit level, however, the crossing frontage is unlikely to be significantly greater

than a normal attack frontage.

4097. ***Combat Formation.*** Only dire necessity could persuade an army commander to mount an opposed crossing with a tank division. A motor rifle division may deploy two or three motor rifle regiments in its first echelon. The latter option is preferable but requires the allocation of crossing assets from army level. The division's tank regiment will be used in the second echelon to exploit out of the bridgehead.

4098. ***Combat Support.*** The volume of fire support will be at least as great as in normal attacks and more weapons, guns, tanks and anti-tank weapons, will be deployed in direct fire positions. Particular attention is given to air defence of crossing sites. The use of engineer crossing means is described later. Chemical troops have a key role because the use of smoke to cover crossings and simulate false ones is considered essential.

4099. ***Sites.*** The number of crossing sites depends on terrain, combat formation and the tactical situation. As a rule each first echelon battalion requires a main and an alternate APC swimming site for each company in its first echelon. Once these companies have crossed and the sites are safe from small-arms fire, ferries may use the same sites. GSP or PMM-2 ferries will be used to carry tank companies and artillery attached to first echelon battalions (though 2S-1 is amphibious). PTS ferries carry towed artillery and logistic vehicles. If the river profile is suitable a tank fording or schnorkelling site may be used. At least one PMP bridging site will be required by each division. A guide to the requirement of crossing sites is given in Diagram 4-11.

See Diagram 4-11

4100. ***Crossing Sequence.*** The sequence and timings for a typical divisional crossing are shown in Table 4-10.

TABLE 4-10 TIMINGS FOR A MOTOR RIFLE DIVISION FORCING A RIVER FROM THE MARCH

Serial	Time	Action
(a)	(b)	(c)
1	H-2 hrs to H hr	Heliborne and/or forward detachment seizure of crossing site(s)
2	H-45 mins/ H-30 mins	Combat recce patrols from leading units arrive, followed by the main forces. RAGs and DAG deploy Engineers arrive and prepare the crossing sites for use First echelon battalions to assembly areas, 3-5 kms from river

		Traffic control organization set up Tanks begin preparation 2-5 kms from river if crossing under water Regimental air defence to leading battalions Some divisional air defence weapons move right up to forward elements
3	H-20-15 mins	Artillery preparation begins (including heavy direct fire)
4	H hr	First echelon MR battalions cross in two waves
5	H + 20 mins	Tanks start to schnorkel or ferry across
6	H + 30 mins onwards	Regimental forward CP crosses. Priorities for crossing: Second echelon battalions swim with regimental 2S1s and BRDM ATGM 2S6 and regimental main CP cross on PMM-2 and PTS Towed artillery and 2S3 of RAG cross on PTS or PMM-2
7	H + 30 mins	PMP bridge construction begins if enemy observed fire is no longer possible (NB rate of 6-7 m per min, excluding bank preparation)
8	H + 40 to H + 90 mins	Ferry remaining first echelon tanks, artillery and air defence equipments
9	H + 90 mins	PMP bridge opens Schnorkelling sites close
10	H + 5-9 hrs	Division clear of river if only one PMP bridge used, sooner if more PMP available

COMBAT AT NIGHT

4101. ***General.*** Although GENFORCE units are equipped with a wide range of illumination sources, night vision devices and other reconnaissance means they lack the technical sophistication of the systems available to most western armies. This is a possible limitation on GENFORCE willingness to engage in night attacks. Key features of GENFORCE night tactics are:

a. *Illumination Policy.* Attacks may be launched without illumination or artillery preparation to achieve surprise. Against an alert enemy, particularly one equipped with sophisticated night vision devices, GENFORCE is likely to prefer a “noisy” illuminated attack. When the means are available (a possible constraint in a mobile battle) lavish use of illumination is preferred, to compensate for GENFORCE technical deficiencies at night. Each attacking battalion usually has at least one mortar or artillery platoon firing

illumination rounds and each platoon has its own illumination post. For logistic reasons and to protect attacking troops illumination will probably not be continuous, but phased in accordance with a central plan.

b. *Formations and Objectives.* Intervals between vehicles and sub-units are generally reduced, especially over difficult terrain. Intervals are not maintained at all within companies. Objectives are assigned in less depth than in daylight and a slower rate of advance is expected. Direct fire support is greatly valued and a higher than normal proportion of the artillery's weapons, especially self-propelled guns, will deploy in this role. Attack helicopters assume greater importance in fighting through the enemy's depth.

c. *The Assault.* Motor rifle troops assault in line with the accompanying tanks. BMPs and BTRs may also be in the assault line or move 50-100 m behind it. Support weapons, such as AGS-17 and medium machine guns are also likely to be well forward. Battalions may use a two echelon formation but will avoid commitment of the second echelon before daylight. If a second echelon has to be committed at night it is done through gaps or to a flank, rather than through first echelon forces.

d. *Command and Control.* Complicated manoeuvres are avoided and meticulous attention is paid to the problem of maintaining direction. Each battalion has a guide company, each company a guide platoon, each platoon a guide section, all in the centre of their assault formation and all with night vision devices and illumination means. Axes and boundaries are marked by flares and tracer. Commander's reconnaissance by day is considered extremely desirable, right down to lowest sub-unit level.

FIGHTING IN BUILT-UP AREAS

4102. ***General.*** GENFORCE knows that fighting in towns and cities will slow its rate of advance considerably and requires a very high consumption of manpower and materiel. It will try to avoid FIBUA battles whenever possible, either by bypassing defended localities or by seizing towns from the march before defences can be properly prepared. Undefended towns may be exploited as avenues of approach or assembly areas.

4103. ***Attacking a Town by Storm.*** When there is no alternative the GENFORCE attacking formation will be re-organized to assault the town by storm. Preparations will begin with an intensive reconnaissance effort to determine the layout of the defence, particularly in depth, and throughout the battle commanders will spend much more time in personal reconnaissance on the ground than in normal operations.

See Diagrams 4-12 & 4-13

4104. ***Combat Grouping.*** The burden of combat must obviously fall on motor rifle troops, supported by other arms. Tank units may be used to seal off pockets of resistance en route to the town or city, to envelop and cut off the built-up area or to provide reinforcements or mobile reserves for motor rifle units. Up to 50% of available artillery will be decentralized for the direct fire role and extra engineers will be supplied from higher formations. Because of the fragmented nature of the fighting and the difficulty of regrouping the reinforced motor rifle battalion, formed into a "storm detachment", is the basic combat organization. A battalion designated as a storm detachment might be reinforced by a tank company, an artillery battalion, preferably with self-propelled guns, an engineer company, anti-tank weapons, flamethrowers and air defence weapons. A storm detachment then forms two or three "storm groups", each built around a motor rifle company with various reinforcements. A storm group is split into sub-groups, each having a specific mission. Diagrams 4-12 and 4-13 describe possible groupings within a storm detachment and a storm group.

4105. ***Echeloning, Frontages and Objectives.***

a. *Echeloning.* While divisions may attack in one echelon, with a small reserve, the attack is always deeply echeloned from regimental level downwards: not only regiments and storm detachments but even storm groups will form a second echelon or a very strong all arms reserve.

b. *Frontages.* A storm group will usually be given one street to clear, with a platoon advancing up each side of it. Thus its frontage will be 200-300 m, and that of a storm detachment 400-600 m. A regiment could be responsible for 2-3 kms, though its attack frontage will be less.

c. *Objectives.* Storm detachments are allotted an immediate objective, perhaps one or two town blocks or a single strongpoint, and thereafter a direction of subsequent advance.

4106. ***Tactics.***

a. *Artillery.* Preparatory fire is usually intense, but short - about 5-20 minutes - with a strong emphasis on direct fire. Once the assault troops have closed with the enemy, indirect fire is shifted to pin down enemy reserves and positions to the flanks: thermite rounds may be used to start fires. Observation helicopters will be important in adjusting fire.

b. *Storm Groups.* Advancing to contact and against light opposition, motor rifle troops lead, advancing on either side of the street. Tanks follow, covering each other, either on each side of the street, or in arrowhead, or reverse arrowhead formation. Section BMPs or BTRs move by bounds providing

cover for the advancing infantry.

c. *The Assault.* When an enemy strongpoint is located the fire support sub-group opens fire on the house and neighbouring buildings. Immediately before the assault, fire is concentrated on the upper parts of the house. During the assault itself the fire support sub-group will be used to prevent the defender from withdrawing. Meanwhile the assault sub-group moves up, using covered approaches including sewers &c whenever possible. The obstacle clearance sub-group precedes them and may also be used to blow holes in the building's walls. Once inside, the building is cleared floor-by-floor, the infantry operating in pairs. When the clearance is complete the assault sub-group moves on down the street, leaving the consolidation sub-group in occupation. Bunkers and other positions which are too strong to assault will be blockaded and later destroyed by explosives.

4107. ***Equipment.*** Storm group personnel are issued with increased quantities of certain weapons, especially grenades, including anti-tank, smoke and incendiary grenades. Specialist equipment, such as grapnels, ropes and ladders, is provided or acquired locally. Smoke is used extensively to cover the assault. Flamethrowers are highly valued in FIBUA and RPO and RPO-A shoulder-fired flame weapons will be widely used.

4108. ***Command and Control.***

a. *Decentralization.* Control by higher headquarters is seen to be very difficult because of problems of observation and communication. As a result, responsibility is devolved downwards along with combat support resources. Considerable responsibility is placed on the shoulders of storm detachment commanders: they can, for instance, often commit their second echelon or organize outflanking detachments without seeking the approval of their regimental commander. At all levels of command, planning and orders have to be much more detailed than in open country.

b. *Control.* Command posts tend to be deployed much further forward than in "normal terrain". For example, storm detachment command and observation posts deploy a mere 200-300 m behind their forward groups. Moreover, senior staff officers often descend on subordinate headquarters to make sure that the attack is being pressed forward vigorously.

c. *Communications.* Large numbers of extra manpack radios are needed, because vehicle sets are of limited use and because of the increased numbers of patrols and OPs required in FIBUA. Maximum use is made of all non-radio communication means.

4109. ***Logistics.*** GENFORCE recognizes that FIBUA leads to a sharp increase in logistic burdens and will endeavour to meet this problem in timely fashion. There will be particularly heavy demands for HE, smoke and small arms am-

munition, explosives, mines, flame weapons and manpack radios.

MOUNTAINS

4110. ***General.*** Success in mountain warfare is seen to rest on control of passes, road junctions, built-up areas and the high ground which dominates them. Generally, the depth of objectives is less than the normal.

4111. ***Organization for Combat.*** The main burden of the fighting must be borne by motor rifle troops. GENFORCE will, however, make great efforts to get tanks into the least accessible areas in view of their moral effect and utility in the fire support role. As often as possible, artillery will also be used in the direct fire role, and whenever possible, extra high angle weapons will be provided. In mountains, the battery becomes the basic fire unit because of restrictions on deployment. Engineer reinforcements are also required. Because of the difficulty of lateral movement, supporting arms units are broken down and allotted to manoeuvre units to form self-contained combat groupings for each axis. Tank units tend to be held in depth to exploit more suitable terrain when it is reached (eg plateaux, wide valleys or “normal” terrain).

4112. ***Frontages and Echeloning.*** Zones of advance tend to be much wider in mountains, though actual attack frontages and force concentrations on them are, if possible, much the same as on the flat. Formations and even units will often advance in one echelon because of the difficulty of passing one echelon through another and of shifting axes. They will, of course, maintain strong reserves.

4113. ***The Attack.***

a. *Variations from the Normal.* There are major differences from attacks on flat terrain. A thorough evaluation and subsequent exploitation of terrain is seen to be essential. Planning and orders require to be more detailed. For these reasons, and because there will rarely be sufficient routes and space for deployment, attacks from the march are uncommon. Most usual are attacks from a position of close contact, despite the loss of surprise and momentum that these entail and the attacker’s vulnerability to defensive fire while preparing the attack. Attacks are generally led by dismounted motor rifle troops, rather than tanks, and a sizeable proportion of the assigned artillery will be used in a direct fire role.

b. *Planning Attacks.* The most effective, and typical, tactic is to launch a main attack along an accessible axis, in coordination with one or more separate detachments advancing on difficult and possibly therefore unexpected axes. Thorough reconnaissance of all types is stressed, with, for instance, about twice the normal number of aerial reconnaissance sorties being flown. Wherever possible, gaps will be found in the defence and exploited to by-pass strongpoints, breaking up the cohesion of the defence. If such gaps have not been left, then they have to be created by eliminating one or two strongpoints and then driving wedges into the defence. Purely frontal at-

tacks are unlikely to succeed in mountains as it is difficult to deploy overwhelming fire and shock power and generate a high momentum of advance. Thus flank attacks and envelopment assume even greater importance than normal. Outflanking detachments can vary in size from platoon to battalion groups, with company groups being most common. They are always as self-contained as possible; for example, a company group would probably include an engineer section, a mortar platoon (probably with 82 mm weapons, if they have to be manpacked), anti-tank weapons and flamethrowers as well as its standard weapons. A company-sized outflanking detachment could be expected to infiltrate up to 10 km in the enemy's depth, with a battalion going up to 15 km over the FLOT - the maximum practical range for artillery support. Where outflanking detachments cannot be used, heliborne sub-units will be used for vertical envelopment. Considerable use will also be made of heliborne raiding detachments to disrupt the defence and of larger air-delivered groupings to carry out the sort of mission given to forward detachments on normal terrain. They may operate in greater depth than outflanking detachments, relying on attack helicopters for fire support. Generally, much greater reliance will be placed on close air support, both fixed wing and rotary, and aircraft will be controlled at lower levels. Well-prepared and stoutly defended positions such as bunkers may be assaulted by storm groups, formed on the basis of motor rifle companies as in FIBUA operations.

c. *Night.* Night attacks of any size are unlikely, given the immense difficulties involved. The cover of darkness will, however, be used to aid the infiltration of outflanking and raiding groups.

DESERTS

4114. ***General.*** Attacks in desert conditions are complicated by the shortage of proper roads and the difficulty of hiding movement because of the clouds of dust raised by vehicles. It is also true, however, that enemy defences will be dispersed over a wide frontage and rarely consist of a continuous line. This creates opportunities for infiltration and manoeuvre which GENFORCE will seek to exploit.

4115. ***Frontages and Objectives.***

a. *Frontages.* Formations and units are generally allotted wider zones of advance than on "normal" terrain and formations may well advance in one echelon, with a combined arms reserve. Substantial gaps are accepted, and combat support assets are more often de-centralized. Regiments and sub-units are often expected to act autonomously and are reinforced accordingly. In view of the increased effectiveness of enemy anti-tank weapons and airpower, a combined arms approach is stressed.

b. *Objectives.* Developed roads, road and track junctions, airfields and sources of water are the geographical features of operational significance. Gener-

ally, objectives are assigned in greater depth than on “normal” terrain.

4116. ***The Attack.*** Attacks will usually be executed from the march at high speed. Deployment into pre-battle and battle formation generally takes place earlier than usual as the terrain seldom affords much cover from long range ATGW. Company columns are formed 12-15 km and platoon columns 3-5 km from the enemy. Frontal attacks usually can, and will, be avoided. Smoke assumes great importance to conceal both approach marches and assaults.

4117. ***Depth.*** Desert warfare creates excellent conditions for carrying the struggle very rapidly into the enemy rear through the use of forward, raiding, airborne and heliborne detachments.

ARCTIC REGIONS

4118. ***General.*** GENFORCE is well-acquainted with the problems of fighting in Arctic regions and in severe winter conditions. Its equipment is designed to withstand such conditions and training is often conducted during the Arctic winter.

4119. ***Frontages, Echelons and Objectives.***

a. *Frontages.* Where terrain and snow limit manoeuvre, formations and units will usually be allotted larger than usual zones of advance. Unit and subunit attack frontages may be restricted by conditions.

b. *Echeloning.* If lateral manoeuvre to shift axes is precluded, formations may well advance in one echelon, with a reserve. Units, and even subunits, may have to attack in 2 or even 3 echelons because of limited offroad mobility.

c. *Tactical Objectives.* Roads and tracks assume a crucial importance to both manoeuvre and speed of advance. Villages and towns and, to a lesser extent, forests are important, quite apart from their tactical significance, as sources of warmth and shelter. They may be contested solely for this reason.

4120. ***The Attack.*** Basic tactical concepts do not differ greatly from those in “normal” conditions, though there are modifications and shifts in emphasis.

a. *Limitations on Manoeuvre.* Often artillery and even tanks may be limited to the roads. This may oblige GENFORCE units to conduct consecutive frontal attacks as the only way to build up pressure. They will, however, make every effort to attack the enemy’s flanks and rear. Even small outflanking detachments, eg of company size, are seen to have a disproportionately great effect on the enemy. Often, mechanized elements will advance on roads with ski sub-units moving parallel to them to infiltrate the defence. Advantage may be taken of bad weather to achieve infiltration undetected and to achieve surprise in the attack. Where the enemy’s flank rests on a lake or the sea, an outflanking detachment could consist of am-

phibious light tanks and APCs. Great emphasis is also placed on vertical envelopment, tactically by heliborne forces and operationally by airborne units. Again, small forces are believed to be potentially very effective; for instance, a heliborne company astride a key route in the enemy's depth could unhinge the defence by stopping resupply or reinforcement.

b. *Speed.* Attacks take longer to mount than in normal conditions. It is also much more difficult to generate momentum. To ease these problems, and to reduce fatigue and exposure to the elements, waiting areas are sited closer than normal to the enemy prior to an attack. Second echelons also move closer to the leading elements to reduce committal times. Because the momentum of the advance is of necessity somewhat slow, there is greater emphasis than ever on carrying the battle into the enemy's depth to prevent his recovery from tactical reverses.

CHAPTER 5

THE DEFENSIVE

SECTION 1 - GENERAL PRINCIPLES

5001. ***The Place of the Defensive in GENFORCE Tactical Doctrine.*** Despite its preference for the offensive, GENFORCE does accept that there are times when its forces will be obliged to conduct defensive operations. Such circumstances might occur:

a. Before the outbreak of a war, or in its first days, to cover the mobilization and deployment of the main forces.

b. In the face of overwhelmingly superior enemy forces.

c. During an offensive, to economise force in one sector, in order to achieve decisive superiorities on the main axis.

d. To ward off a counter-attack during offensive operations.

e. To consolidate lines or positions captured by forward detachments or other advanced forces, in order to secure the advance of the main forces.

f. When a unit or formation has suffered serious casualties and is no longer capable of offensive operations.

In general, the defensive is seen as a temporary expedient, to prepare the way for offensive operations.

5002. ***Principles of Defence.*** The general principles of GENFORCE defensive tactics are:

a. *Tenacity.* A unit ordered to hold a position must do so with the utmost stubbornness and may only give ground or withdraw with the permission of the commander who set its original mission to defend.

b. *Aggressiveness.* Commanders at every level must seize every opportunity to take local offensive action during a defensive battle.

c. *Manoeuvre.* Tenacity in defence does not mean immobility. Forces and firepower should be manoeuvred from less threatened sectors to meet the enemy's main attack and disrupt his concept of battle.

d. *Firepower.* Maximum firepower should be deployed at maximum ranges to begin to wear down the attacker's forces from the earliest opportunity.

e. *Concealment & Surprise.* Great emphasis is placed on concealment of

one's own forces, misleading the enemy about the layout of the defence and using ambushes and every other tactical means to surprise the enemy.

5003. ***Types of Defence.*** Defence in GENFORCE doctrine is classified as either *positional* or *manoeuvre*. Positional defence has always been considered the basic form but it is recognized that on the increasingly open battlefield of the future, with its lower force densities, it will not be possible to rely on the preparation of continuous defence lines. Greater attention is therefore being paid to manoeuvre defence, which has some similarities, but is not identical to, British Army concepts of mobile defence. Positional and manoeuvre defence are not yet seen as equally valid alternatives. Rather manoeuvre defence is a subordinate form, intended to economize force on less important sectors or to buy time for the preparation of a positional defence.

SECTION 2 -ORGANIZATION AND CONDUCT OF POSITIONAL DEFENCE

5004. ***Frontages and Depths.*** Table 5-1 gives yardsticks for GENFORCE deployments in positional defence. These will, of course, vary considerably with the circumstances in which defence is adopted, the importance of the sector, the strength of the defending forces and the assessment of the threat.

Table 5.1: FRONTAGES AND DEPTHS IN DEFENCE (KM)

	Division	Regiment	Battalion	Company	Platoon
Frontage (a)	20-30	10-15	3-5	1-1.5	Up to 0.4
Depth (b)	15-20	7-10	2-2.5	Up to 1.0	Up to 0.3

Notes:

(a) Groupings forced to cover wide sectors will perforce have to sacrifice depth and deploy in one echelon only, but will still maintain a reserve.

(b) Yardsticks exclude any security zone or forward positions established by divisions or regiments. If established these would add up to 15 km to a division's depth of deployment and 3-5 km to that of a regiment.

5005. ***Terminology.*** In GENFORCE terminology a division defends a 'zone', a regiment defends a 'sector', a battalion an 'area'. Companies and platoons defend 'strongpoints'. The defensive layout is constructed from a series of 'positions' deployed in depth. Each position consists of a chain of company strongpoints linked by obstacles and a fire plan. The first position is the most strongly held. Positions in depth may be only partly occupied, but they provide a line to which forces defending further forward may be ordered to withdraw.

5006. ***Echelons.*** As in the offensive, a force may be deployed in one or two echelons. In general terms, a two-echelon deployment is usual on the most threatened axis and a one-echelon deployment is more appropriate to secondary axes. One echelon formations are also adopted when the defender has suffered heavy casualties. Forces deployed in one echelon retain a combined arms reserve. For a division it would consist of at least a battalion, for a regiment a company and for a battalion a platoon. Within a formation different levels of command may use different echelonning schemes. Thus if a division or regiment deploys in two echelons, the corresponding second echelon regiment or battalion is likely to be deployed in one echelon.

5007. ***Grouping of Tank and Motor Rifle Elements.*** Within motor rifle formations and units commanders generally strive to keep a strong tank element in the second echelon or reserve because the tanks' mobility and firepower can be most effectively used in counter-attack and counter-penetration roles. In tank formations and units there is a strong tendency to concentrate subordinate motor rifle elements in the first echelon because of their advantages in holding ground and providing OPs and sentries.

5008. ***Defensive Layout.*** General examples of divisional, regimental, battalion and company defensive layouts are shown in Diagrams 5-1 to 5-6. The major elements to be considered are covering forces, if deployed, the main defensive positions, reserves and combat and service support elements.

See Diagrams 5-1 TO 5-6

5009. ***Covering Forces.*** The type of covering force used depends on the circumstances in which defence is adopted and the level of command involved. These factors are summarized in Table 5-2. It should be noted that a covering force is not always deployed, particularly when a unit goes over to the defensive in contact with the enemy. In the latter case the defending force may have to occupy a line while in action and hold it to the best of its ability. The use of the different types of covering force is described below:

Table 5.2 TYPES OF COVERING FORCE

Mission	Deployed when Defending		Command Level			Distance in Front	Frontage Occupied
	In Contact	Out of Contact	Setting Mission	Deploying Force	Fighting Battle	Of Forward Edge Of Main Defence	
Forward Det in Security Zone	No	Yes	Army	Division	Battalion	Up to 15 km	5-10 km
Forward Position	Yes	Yes	Division	Regiment	Company	4-6 km	1.5-3 km

Combat Security Outpost	No	Yes	Regiment	Battalion	Platoon	Up to 2 km	0.5 km

a. *Security Zone.* A security zone is established when the defence is organised out of contact with the enemy. It is planned at army level and deployed in front of the first echelon divisions. If the depth of the army's deployment permits, second echelon divisions may be ordered to prepare a security zone between the rear of the first echelon divisions and their own front line. The divisional commander is responsible for the detailed organisation of the security zone within his zone of defence. The security zone extends across the whole of the divisional zone and is usually at least 15 kms in depth. The battle in the security zone is fought by manoeuvre defence tactics and is described in Section 6, Paragraphs 5035-5039.

b. *Forward Positions.* When the separation between the GENFORCE force and the enemy is not great enough to permit the creation of a security zone, forward positions are deployed between 4 and 6 km in front of the first position. They are ordered by division but planned in detail by the first echelon regiments. Normally a forward position will be created by each first echelon regiment and manned by a company from the regiment's second echelon. A motor rifle company would probably be reinforced by a tank platoon and a tank company by a motor rifle platoon. A SAM platoon might also be allocated and the company will be supported by the regiment's artillery and any available air assets. The prime aim of a forward position is to mislead the enemy about the real location of the forward edge of the defence. The company will deploy in one echelon and false and alternate positions will be prepared as time permits. Enemy reconnaissance will be engaged by duty weapons from alternate fire positions. Probing attacks will be beaten off and the enemy forced to deploy his main body. Once this has been achieved the regimental commander should order a withdrawal and the company will rejoin its own battalion. Forward positions are sometimes created when going over to the defensive in contact with the enemy. They are held on the line of contact while the main body of the regiment withdraws to a more favourable line for defence.

c. *Combat Security Outpost.* If forward positions are not deployed first echelon battalions may be ordered to organize combat security outposts. They consist of a platoon sited up to 2 km in front of the forward edge of the defence on the most threatened axis. Tank platoons are usually reinforced with a motor rifle section and motor rifle platoons are sometimes reinforced by a tank. The combat security outpost's primary mission is to prevent enemy reconnaissance and small groups penetrating to the battalion's position. It is supported by the battalion's mortars and any available artillery and an FOO is often located in the platoon position. Once the enemy begins to deploy for a major attack the outpost is withdrawn, generally under cover of smoke and artillery fire.

5010. ***The Main Defensive Positions.*** The heart of the defence is composed of a series of 'positions', each consisting of three or four continuous trenches within which company strongpoints are established, covered by obstacles and protected by a system of fire. A division occupies three or four positions, a regiment one or two and a battalion only one. Within a battalion position the first and second trenches will be 300-600 m apart and the second and third trenches 600 to 1,000 m apart. If a fourth trench is constructed it will also be 600-1,000 m from the third trench. Company strongpoints may be up to 1,000 m apart.

5011. ***Obstacles.*** The depth of the obstacle plan depends on the time and engineer resources available. As a minimum a series of 3-400 metres wide minefields, each of three rows, will be laid at about 3-400 metres in front of the forward edge of the defence. These protect individual platoon strongpoints against the final assault of the attacking force. As time permits additional minefields may be laid at greater distances from the forward edge, in intervals between strongpoints and on the flanks. Wire, tank traps and other physical obstacles will also be prepared. Tank ditches are often dug between strongpoints. All obstacles and the approaches to them must be covered by observation and by direct and indirect fire.

5012. ***The System of Fire.*** In the GENFORCE view the key to success in defence is the creation of an effective system of fire. The aim is to face the attacker with a growing intensity of fire as he approaches the forward edge of the defence. The GENFORCE commander plots the system of fire on his map as shown in Diagram 5-5. It begins with artillery concentrations and barrages on likely axes, choke points and deployment lines. Direct fire weapons join in until, when the enemy reaches the zone of continuous fire, from about 400 metres in front of the position, every available weapon is firing. Any dead ground in the zone of continuous fire must be covered by indirect fire from mortars or artillery. GENFORCE teaching stresses that the system of fire should be as deep as possible and it is therefore usual for the forward edge of the defence to be sited on a forward slope. Reverse slopes may be used to protect vehicles and for ambushes. Within the system of fire the commander may plan to create 'fire sacks' in which the enemy is confronted from front and flanks with the maximum volume of fire. Fire sacks may be created in front of the forward edge or in the depth of the defence and when possible mine-fields will be laid on their edges. Typical dimensions of fire sacks are 800-1,000 metres wide and up 1,000 metres deep when sited in front of a position and 500-600 metres wide by up to 1,000 metres deep when sited between strongpoints, in the body of the position.

5013. ***Company Strongpoints.*** A company strongpoint is formed from platoon strongpoints, deployed in one or two echelons (ie two up or three up), and the firing positions of any direct fire systems allocated to the company. A typical layout is shown in Diagram 5-6.

5014. ***Second Echelons.*** Second echelons may be used for the following tasks:

a. Hold their main position against an enemy penetration.

b. Reinforce first echelon elements where the enemy threatens a breakthrough.

c. Manoeuvre to firing lines (counter penetration) or to launch counter attacks. A second echelon usually prepares at least two of each of these options.

d. Destroy enemy airborne or heliborne assaults.

5015. ***Reserves.*** Various types of reserve may be created:

a. *Combined Arms Reserves.* These are created by units and sub-units defending in one echelon. Reserves may be given counter-attack or counter-penetration missions or used to fill gaps in the defence.

b. *Anti-tank Reserves.* These are kept at every level from battalion upwards. They are generally built around an anti-tank unit or sub-unit and operate in conjunction with a MOD. See paragraphs 4051-2 for more detail.

c. *Anti-Air Assault Reserves.* Because of the perceived threat from air-mobile troops it is now usual to designate an anti-air assault reserve. Part of the force's second echelon may be ear-marked for the role or a specific reserve created.

d. *Engineer Reserves.* Besides its Mobile Obstacle Detachment, regiments and divisions try to retain an engineer reserve of earth-moving and obstacle-creating equipment which can be deployed to strengthen defences on a particularly threatened axis during the course of the battle.

SECTION 3 - FORTIFICATIONS

5016. ***Basic Fortifications.*** The basic forms of field fortification are as follows:

a. *Shell Scrapes.* The simplest form of field fortification is the shell scrape dug by the individual infantryman when he is in range of the enemy. The finished position will be about 30 cm deep and with a 30 cm breastwork which will be cut for an embrasure.

b. I*ndividual Trenches.* Scrapes are then dug down to a depth of 1.1 metres, with 50-60 cm high breastworks, forming 'trenches for firing standing up'. Various forms of trench are dug to fit the battalion's weapons, for example, the RPK, the RPG-7 and the AGS-17.

c. *AFV Pits.* When going over to the defence under fire individual vehicles will merely seek cover in convenient folds in the ground. As soon as practical,

however, proper pits will be prepared for AFVs as well as personnel. A section APC will be placed 50 metres behind the section's trenches. Tanks will be sited as required by the system of fire. The latest models of GENFORCE tanks and BMPs will be expected to dig their own positions, using the fitted dozer blade. Older vehicles depend on tanks fitted with BTU dozer blades or specialist engineer equipments. If necessary the APC section may have to dig in their vehicle, though this is rarely expected of a tank crew.

5017. ***Preparation of the Defence.*** The preparation of the defence is divided into three stages, the first and second stages and further work

5018. ***The First Stage of Preparation.*** Barbed wire and other obstacles are laid in front of the position and fields of view and fire are cleared. Pits or trenches are prepared at the primary position of each AFV, crew-served weapon, and individual infantryman. COPs and medical posts are dug in. Then individual trenches are linked into a 100 m section trench and additional obstacles laid on the flanks of the position and in depth. Normally 5-6 hours is allowed for this work, which is shown in Diagram 5-7a.

See Diagram 5-7 a,b,c

5019. ***The Second Stage of Preparation.*** During the second stage of preparation of the position AFVs and weapons systems are provided with alternate fire positions. Trenches are linked until they run continuously across the battalion frontage. (Diagram 5-7b). Communication trenches are prepared. Section dug-outs are prepared, providing overhead cover against enemy artillery fire or air attack. Again 5-6 hours is usually allowed for this phase.

5020. ***Further Work.*** Further preparation of the position will include improvement of existing trenches and positions, laying further obstacles and preparation of firing lines and routes for anti-tank reserves and second echelons. Communication trenches may be improved for use as fighting trenches. Dummy positions will be prepared in intervals between platoon strongpoints or on their flanks.

5021. ***Mechanical Digging.*** A range of mechanical diggers is available within regimental and divisional engineer units. Out of contact with the enemy (for example, with second echelon forces) mechanical digging means will be used whenever possible. Once the outline trench has been dug it will be improved by hand as shown in Diagram 5-7c. In difficult soil or when time is limited explosive means may be used to open trenches. Standard charges are available to blow individual trenches.

5022. ***Preparation Time.*** Some of the norms laid down for the completion of various defensive works are shown in Tables 5-3 and 5-4.

TABLE 5-3 TIME REQUIRED TO PREPARE INFANTRY TRENCHES

Type of Fortification	Time Required to Dig:	
	a. With Infantry Spade	b. With Engineer Spade
Rifleman's Position for Firing Lying Down	0.5 man hours	
Rifleman's Position for Firing Standing Up	2.5 man hours	1.5 man hours
RPK position (Standing)	4.0 man hours	2.5 man hours
RPG position (Standing)	2.5 man hours	1.5 man hours
AGS- 17 position (Standing)	5.0 man hours	3.8 man hours

TABLE 5.4 TIME REQUIRED TO PREPARE 100 METRE SECTION TRENCH

1. Manually:

   a. With Infantry Spade: 200-300 man hours
   b. With Sapper Spade: 100-150 man hours

2. To Complete Trench Dug Mechanically:

   a. With Infantry Spade: 120 man hours
   b. With Sapper Spade: 65 man hours

SECTION 4 - CONDUCT OF THE DEFENCE

5023. ***The Battle in the Security Zone.*** The battle in the security zone is described in Section 5.

5024. ***The Battle in the First Position.*** The enemy may try to attack the first position on the heels of the withdrawal of the forward detachment. Battalions in the first echelon of the regiment should be able to beat off these attacks. Weapons which fire during these skirmishes should move to new fire positions before the main attack. Once the enemy has deployed for a formal attack and his artillery begins its preparatory bombardment, personnel take cover in their dug-outs or vehicles. Sentries and sub-unit commanders remain at their post during the bombardment and continue to observe the enemy's movements. The artillery barrage is expected to lift when the enemy is 3-400 metres away from the forward edge of the defence. Trenches are then manned and the maximum volume of fire begins. The main priority is to separate the tanks from their accompanying infantry. The stoutest possible defence is expected from the forward battalions. If the enemy reaches the trenches he is met in hand-to-hand combat. Various obstacles are used to isolate sections of the trench and prevent an enemy who has broken into the defence from rolling up the whole position. Any enemy penetrations are met with heavy flanking fire. It is now suggested that tanks and battalion or even company 'armoured groups', formed from the BMPs of the second echelon (without their dismounted infantry) should be used as mobile forces to close gaps created by the enemy's barrage and to secure threatened flanks. A first echelon battalion may also organize a counter-attack but it is rare for this to be launched independently. If the battalion is out-flanked the commander should re-deploy some of his resources to cover the flank from alternate fire positions. Even if the battalion is surrounded it is expected to fight on and draw upon itself the greatest possible part of the enemy's forces.

5025. ***Formation of Armoured Groups.*** Armoured groups are formed at battalion or company level as additional manoeuvre assets in the defence. They are groupings of tanks with BMPs whose infantry have been dismounted. They are organized once the basic work of preparing the position has been completed by withdrawing the nominated vehicles from their firing positions in platoon strongpoints and concentrating them in hides in dead ground, woods or other cover behind the first echelon positions. A company armoured group might consist of 1-2 tanks and 2-4 BMPs commanded by a platoon sergeant; a battalion armoured group may have 2-4 tanks and 4-6 BMPs and is commanded by a platoon commander from a second echelon company. (Armoured groups are less commonly formed in BTR battalions). Armoured group vehicles may be taken from first or second echelon sub-units which are defending positions away from the most threatened axis.

5026. ***Employment of Armoured Groups.*** Once formed, armoured groups are assigned two or three firing lines to cover gaps between strongpoints and to the flanks. Routes to the firing lines and firing positions on them are prepared. The armoured group's hide is camouflaged and dummy vehicles or false heat sources may be sited some way off from the position. Once the battle begins the armoured group remains in its hide until ordered to occupy a firing line to block a threatened penetration. All or part of the armoured group may be returned to its original positions if that seems a more effective way to use the vehicles. It is vital to pre-empt the enemy in occupation of the firing line and the armoured groups move must be triggered in time. 10-12 minutes is an average lead time to move an armoured group from its hide to a firing line.

5027. ***Ambushes.*** Ambushes are very characteristic features of any GENFORCE defensive layout. In size they vary from individual weapon systems to a platoon and are generally found from second echelon sub-units. Tanks, BMPs, ATGW, helicopters, SAMs and flamethrowers are all used for ambushes. They are sited on likely axes of approach, on flanks and in gaps and between first and second echelon positions. Their role is to reduce the enemy's strength before he reaches the main position and to slow his advance.

5028. ***Defence in Depth.*** In positional defence first echelon elements are expected to fight with the utmost stubbornness and to continue to fight even when bypassed or encircled. Second echelon elements may fight from their original positions, reinforce weakened first echelon positions, move to firing lines to counter-enemy penetrations or launch counter-attacks. Counter-attacks are discussed in more detail below but it is worth noting that, at the tactical level and in positional defence, they are the least favoured way of using second echelons. GENFORCE commanders are loath to abandon the advantage of fighting from prepared positions. However, they are prepared to move their second echelon to reinforce a weakened first echelon, rather than abandon that ground. They will also use a second echelon to check a penetration or outflanking move from a prepared firing line. If the counter-penetration move is unsuccessful the second echelon will resume its main position to continue the defence in depth.

5029. ***The Conduct of Counter-Attacks.*** A successful counter-attack requires the same superiority ratios as an ordinary attack and thus is rarely worth launching below divisional level. The main features of GENFORCE counter-attacks are as follows:

a. The enemy's attack must have been halted or, at the very least, the momentum of the attack must have been broken. Anti-tank reserves and MODs may be used first to achieve this.

b. The enemy must be unable to commit a reserve into the penetration, either because it has already been committed, or because it has been neutralized by long range strikes.

c. Counter-attacks are only launched against shallow penetrations. Thus a regiment's second echelon battalion will be launched against a penetration which has been checked in the first line of platoon strongpoints; a division's second echelon regiment will not counter-attack if the penetration is deeper than the first company strongpoints.

d. The aim of a counter-attack is to destroy the penetrating enemy and restore the original line of the defence.

e. If a counter-attack is attempted lower levels of command will join in with every available manoeuvre element. Thus although a battalion might not launch a counter-attack independently it will support a regimental or divisional counter-attack. Such counter-attacks may either provide direct support on the flanks of the main blow, or act as diversions to confuse the enemy.

5030. ***Manoeuvre Timings in Defence.*** Examples of the timings for manoeuvring sub-units in defence which GENFORCE tries to achieve are:

a. *To move a motor rifle company to a new strongpoint and to organize its system of fire:* up to an hour.

b. *To move a tank company to occupy a firing line to beat off an attack:* up to 9 minutes by day and 10 minutes by night.

c. *To quit a position or firing line:* 5-7 minutes by day, 5-10 minutes by night.

d. *To move a second echelon battalion 8-10 kms to reinforce a threatened sector or to launch a counter-attack:* 40-45 minutes.

5031. ***Striking the Enemy in Depth.*** GENFORCE seeks to hit the enemy in depth in the defence just as much as when attacking. All available ground and air systems will be used in attrition of the enemy's strength at the greatest possible distance from the GENFORCE FEBA. These depth attacks will continue even after the battle for the main position has begun and will be targeted particularly against headquarters and communication centres and enemy reserves.

5032. ***Tactical Airborne Assaults.*** GENFORCE believes that tactical airborne assaults have a vital role to play in this battle in the attacker's depth. They may be used against headquarters, logistic sites and key weapon systems, such as long-range PGM systems and helicopter forward operating sites. Details of the mounting and operation of these airborne assaults are as described in Section 7 of Chapter 4.

5033. ***Withdrawal.*** 'Not a step backwards!' is the GENFORCE motto in positional defence but it is accepted that, on occasion, a withdrawal may be necessary. A unit or sub-unit may never withdraw without the approval of the commander who assigned its original mission to defend. The tactical handling of with-

drawal in positional defence does not significantly differ from that described under the heading of manoeuvre defence in the next section.

SECTION 5 - MANOEUVRE DEFENCE

5034. ***General.*** As the ratio of force to space on the future battlefield grows less GENFORCE is beginning to pay more attention to mobile forms of defence. The term 'manoeuvre defence' is used to distinguish GENFORCE concepts from their western counterparts. Positional defence is still considered the main form of defence and manoeuvre defence is a secondary form. The aim of manoeuvre defence is to wear down and attrit the enemy by successive battles on a series of deeply-echeloned lines, in order to win time and opportunities to stabilize the defence in depth. In fact, of course, manoeuvre defence has always played a part in positional defence, most usually when a battalion or, less often, a regiment has defended a security zone in front of a divisional main defensive position. However, GENFORCE has recently begun to consider the possibility that whole formations may conduct manoeuvre defence. This is most likely to occur at the start of a war, if the attacker has achieved surprise and forward-deployed forces are inadequate to screen the borders while mobilization proceeds. A division may also be ordered to conduct a manoeuvre defence in a particular sector in order to lead the enemy into an 'operational sack' into which an operational counter-blow could be launched. To illustrate GENFORCE manoeuvre defence concepts this section considers manoeuvre defence within a divisional security zone and the manoeuvre defence by an entire division.

5035. ***The Divisional Security Zone.*** (See Diagram 5-8). A security zone is usually prepared in front of the main defensive line when a division goes over to the defence out of contact with the enemy. Its depth will vary with the terrain and tactical situation but it typically contains at least three defended lines 6-8 kms apart, with the final line about 5 kms in front of the divisional FEBA. The force allocated to defend the security zone is known as a forward detachment and is drawn from the division's second echelon.

See Diagram 5-8

5036. ***Frontages.*** If the security zone is defended by a regiment the regiment's frontage will usually equate to the divisional sector (20-30 kms). When a battalion is assigned to fight the security zone battle it will cover only the most threatened axis within the division's sector. A battalion in manoeuvre defence can defend a sector 5-10 kms wide; a company defends between 1.5 and 3 kms. These larger than normal frontages are achieved by accepting larger intervals between strongpoints, not by increasing the size of individual platoon strongpoints.

5037. ***Grouping.*** A motor rifle battalion is considered most suitable for use as a forward detachment; it will be reinforced with a tank company, an artillery battalion, an air defence platoon and an engineer sub-unit. A tank battalion, if used in this role, would receive a motor rifle company and similar combat support elements. Forward detachments are supported by divisional artillery and aviation, if available. Battalions may deploy in one or two echelons, though a single-echelon deployment is probably more usual. Companies are likely to deploy in one echelon. In a one echelon formation a battalion will form a strong reserve (eg a tank platoon and a motor rifle platoon). The battalion may send out reconnaissance patrols and/or post a combat security outpost up to 2 kms forward, as in positional defence (see Paragraph 5009 c.). Ambushes and armoured groups are used even more widely than in positional defence, especially to cover gaps. Anti-tank reserves and MODs are obligatory. Artillery assigned to support the forward detachment is deployed well forward and will begin the battle in positions within the security zone itself, forward of the FEBA.

5038. ***Preparation of Positions.*** Naturally the preparation of positions will depend on the time available. Divisional and regimental engineer assets will support the forward detachment, particularly by preparing depth positions and improving routes between them, by laying minefields and creating demolitions and obstacles. Lines of smoke pots will be laid in sequence to cover sub-unit withdrawals.

5039. ***Conduct of the Battle.*** The security zone battle is fought in the following sequence:

a. Attrition of the enemy during his advance to the first defence line, using aviation, long-range artillery, ambushes &c.

b. Combat on the first defence line. The defender's aim is to ensure that the attacker is unable to capture the line by a hasty attack by his leading elements and to force the attacker to deploy the main body of his forces.

c. Disengagement from the first defence line, when ordered by the divisional commander. Forward detachments are not usually expected to stand a deliberate attack by the enemy. The withdrawal will be covered by aviation and artillery. Counter-attacks may be launched by second echelon elements or reserves or by elements on less threatened sectors in order to allow the first echelon of the battalion to break contact or to check enemy pursuit. The usual sequence of withdrawal within companies is for a platoon per company to remain in the company strongpoint while the main body moves out of its positions to an RV, forming platoon columns and then retiring by planned routes to the next position. Company columns may be formed if necessary. The remaining platoons endeavour to simulate the presence of the whole company until the main body is formed and moving. They then quit the position and cover the withdrawal of the main body.

d. The battle continues in the space between defence lines using ambushes and local counter-attacks to slow the enemy's advance. Minefields, demolitions and obstacles are also employed and this phase is considered most suitable for the use of remotely-delivered or helicopter-laid mines. It is accepted that a clean withdrawal of all sub-units is unlikely and some columns may enter the next position with the enemy on their heels. Those defending the second position must check the pursuit and prevent the attacker exploiting the confusion of the withdrawal by penetrating their defences.

e. The battle for the second and subsequent defence lines follows the same pattern, until the forward detachment retires through the divisional FEBA to occupy its main defence position in the second echelon.

5040. ***The Division in Manoeuvre Defence.*** A division may be ordered to conduct a manoeuvre defence either individually or as part of a larger formation. The depth of the sector in which it operates will depend on the situation and the mission but it is likely to exceed 50 km and may be considerably more. However, in the GENFORCE concept of manoeuvre defence it is assumed that eventually a line will be reached which must be held at all costs and the division will then fight a positional defence on that line.

5041. ***Frontages.*** There are no set frontages for a division in manoeuvre defence; the mission, the enemy threat, the terrain and the time available to prepare the defence will all influence the frontage over which the division is expected to defend. However, a division deployed in the two-echelon grouping described in the next paragraph could cover a frontage of at least 60 kms on normal terrain and a wider frontage in difficult terrain or on a secondary sector.

5042. ***Deployment.*** A one-echelon deployment is very unlikely, except in mountainous or other very difficult terrain. Perhaps the most likely deployment is in two echelons, with two regiments in each echelon. Manoeuvre defence is almost the only time that the two echelons are of equal size. Diagram 5-10 illustrates such a deployment. The division will defend a series of lines, based on natural obstacles whenever possible, leap-frogging its echelons so that one is always firmly holding a line while the other is re-deploying or preparing its defences. Individual regiments are most likely to deploy in one echelon; battalions may be in one or two echelons, depending on the importance of the axis they are defending. Regiments will hold a strong reserve, for example, a tank battalion or tank battalion, minus one company. Much of the available artillery will be decentralized to regiments to allow them to form strong RAGs, but if sufficient assets are available from army level, a DAG may be used on the most threatened axis. The army artillery group (AAG) and army group of rocket artillery (AGRA) will also be deployed into the manoeuvre defence zone on the army's most threatened sector. Army engineer assets will assist in preparing defence lines and routes and strong anti-tank reserves and MODs will be held at every level.

5043. ***Conduct of the Battle.*** In outline the battle is likely to proceed in the following sequence:

a. Long-range attrition of the attacker, using aviation, missiles, long-range artillery and special forces.

b. Ensuring that the enemy does not penetrate any defended line by an attack from the march, but is obliged to halt, deploy his main forces and prepare a deliberate attack.

c. An echelon may stand and fight on a line long enough to defeat a deliberate attack in favourable circumstances or if the next line of defences is still being prepared. However such actions will be costly and will not be attempted on every line; more often the defending echelon will try to withdraw before a deliberate attack is launched.

d. It is accepted that a 'clean' withdrawal is unlikely, certainly across the entire front. Sub-units must expect to fight a withdrawal in contact and may even find themselves encircled for some time. They should fight on until ordered to break-out; the break-out may be covered by a local counter-attack to link up with the encircled force and permit its withdrawal.

e. Combat in the space between defended lines is as important as the battles on the lines themselves. Much can be done to delay and attrit the enemy by such actions as ambushes, air strikes, mining (including remotely delivered minefields) and launching raiding detachments or tactical airborne assaults in reinforced company or battalion strength.

f. Counter-attacks are much more common in manoeuvre defence than in the positional form. Such counter-attacks do not require the same superiority ratios as in positional defence; they are set much shallower objectives and are not expected to hold the regained ground.

g. Once the defending division reaches its final line it will deploy for a conventional positional defence, abandoning the two equal echelons deployment.

SECTION 6 - COMBAT SUPPORT

5044. ***General.*** Many of the details of the organization of combat support, groupings, tactics etc, will be identical in offensive and defensive phases of war. This section describes only those features and variations which apply specifically to the defence.

5045. ***Artillery.*** The artillery available to a division may be grouped in a DAG, allocated for RAGs or subordinated to a battalion. In positional defence a strong DAG is likely to be maintained, covering the most threatened sector. The number of RAGs formed will depend on whether additional artillery has been assigned to the division from army level. In manoeuvre defence more assets will be

decentralized to RAGs, even at the expense of the DAG. A battalion is only likely to have artillery directly subordinated to it when acting as a forward detachment or given another independent mission.

5046. ***Phases of Artillery Support in the Defence.*** Fire planning for the defence will normally consist of the following phases:

a. *Artillery Counter-Bombardment/Counter-Preparation.* Fire missions are carried out on nominated targets in accordance with the fire plan. Amongst the probable targets are: long-range systems, especially PGMs, artillery and mortar batteries, command posts, tanks and mechanized infantry in their move forward, deployment to and occupation of FUPs.

b. *Artillery Interdiction of the Advance and Deployment of Enemy Forces.* New targets, in addition to those mentioned above, include enemy columns moving to departure lines. Punctuality in opening fire is emphasised, with targets being engaged at maximum range.

c. *Artillery Repulse of the Enemy Attack.* The artillery by means of concentrations of fire and by movable and fixed defensive fires engages tanks and other armoured vehicles, breaks up enemy sub-units' battle order, particularly by separating tanks and infantry, and creates favourable conditions for their destruction by fire from anti-tank weapons.

d. *Artillery Support of the Defence in Depth.* By concentrated fire and by fire on individual targets GENFORCE artillery engages infiltrating enemy groupings, preventing the development of his advance into the depth.

e. *Artillery Support of the Counter-Attack.* This falls into three parts:

(1) Artillery fire covering the move forward of one's own troops to the departure line, neutralizing enemy artillery and other weapons systems capable of hindering the move forward.

(2) Artillery preparation of the counter-attack consists of suppressing anti-tank and other weapons, tanks and personnel on the axis of the counter-attack, together with any located enemy artillery. It begins no later than attacking sub-units' move forward to the limit of enemy anti-tank range and finishes as own troops reach artillery safety lines. It may consist of a single fire mission.

(3) Artillery support of the counter-attack neutralizes or destroys personnel and weapons detected as the counter-attack develops, using concentrations of fire or fire on individual targets.

(4) Following the capture of the objective artillery will register and prepare defensive fire tasks.

5047. ***Aviation.*** The flexibility and manoeuvrability of aviation can be exploited for many tasks in the defence but GENFORCE considers it vital to conserve resources for the most appropriate missions. Aviation is particularly valuable when fighting a manoeuvre defence but there are many phases of positional defence in which aviation can have a crucial influence on the battle. The following paragraphs describe typical ways in which GENFORCE aviation is used in different stages of the defensive battle.

5048. ***Interdiction of Enemy Movement and Deployment and Support of Covering Forces.*** Fixed wing aircraft are most suitable for interdiction tasks on the distant approaches to a defensive position. The covering force battle provides many good opportunities to use the helicopters of army aviation, because the enemy will present many targets in the open and will not have been able to build a dense air defence system. Helicopters generally operate from forward sites or from ambush positions in this phase. While the defence is being prepared helicopter sub-units will reconnoitre good ambush positions covering the most likely enemy routes. Air-delivered mines are considered very useful in this phase.

5049. ***Air Support for the Repulse of the Enemy Attack.*** This is considered the worst time to use aviation. Every available direct and indirect fire ground-based system will already be in action in this phase and at least part of them will have to check fire as GENFORCE aviation approaches the FEBA. It is possible, however, that some air resources will be kept on call during this phase to provide a quickly-reacting strike force wherever the enemy threatens to penetrate the forward defences.

5050. ***Support for Withdrawal from Line to Line.*** This type of support is most typical of manoeuvre defence and air strikes will be used to check the enemy pursuit of withdrawing sub-units.

5051. ***Support of Counter-Attacks.*** This is an excellent role for air power. Massed strikes by tactical aviation can be used to blast a corridor into the enemy's combat formation. Helicopters will provide close support for the advance of the counter-attackers either while on call in the air or from forward operating sites.

5052. ***Recce-Strike Groups.*** Manoeuvre defence in particular is considered an excellent time to use recce-strike groups. These are a newly-developed GENFORCE tactical grouping, combining fixed-wing ground attack aircraft (especially SU-25s) with attack helicopters. These groups may be used against approaching enemy columns, to reinforce defending forces or to block penetrations and out-flanking moves.

5053. ***Air Defence.*** Organizing a stable air defence system is vital to a successful defensive battle. In positional defence the priorities for coverage are:

a. *Divisional Air Defence Regiment.* First echelon regiments, divisional command posts, DAG, second echelon or reserve, logistic sites. During the

security zone battle at least one battery of the divisional air defence regiment may be deployed forward to cover the security zone.

b. *Regimental Air Defence Battalions.* First echelon battalions, CPs and the RAG. Some elements may be deployed in air defence ambushes on likely avenues of approach for enemy aircraft.

c. *Battalion Air Defence Platoon.* Most probably located by sections within first echelon company strongpoints and near the battalion COP.

d. Manoeuvre defence makes especially heavy demands on air defence assets. Divisional batteries may leap-frog to cover successive defence lines. Air defence ambushes will be even more widely used.

5055. ***Anti-tank Defence***. The anti-tank fire plan is crucial to the success of the defence. Organic weapons within company strongpoints (including tanks attached to motor rifle companies) will be sited with interlocking arcs of fire to ensure continuous anti-tank coverage of the front. In vital sectors reinforced 'anti-tank strongpoints' may be set up; these may contain additional anti-tank weapons, howitzers in the direct fire role or flamethrowers. Specialist anti-tank elements in motor rifle units will be deployed as follows:

a. *Motor Rifle Battalion Anti-tank Platoons.* These may be deployed within platoon strongpoints, either by sections or as a platoon, but it is equally common for the battalion commander to retain the platoon under his direct control and assign it firing lines to be occupied as the enemy attack develops.

b. *Motor Rifle Divisional and Regimental Anti-tank Battalions.* In normal terrain these are unlikely to be deployed in forward defensive positions but will more probably be used as anti-tank reserves, generally in cooperation with an MOD. The tactics they employ will be very much as described in an offensive context in Chapter 4, Paragraphs 4051-4052. When faced by a very adverse air situation GENFORCE commanders may prefer not to deploy their anti-tank reserve in a hide initially, with the risk that it will suffer heavy casualties while deploying. In such cases it may be preferable for the anti-tank reserve to dig in on a well-camouflaged firing line covering the most threatened axis. Alternate firing lines will still be planned and the MOD will still operate from a hide, only laying its mines at the last moment to achieve surprise.

5056. ***Engineer Support.*** Besides the role of MODs mentioned above, the engineers obviously have a full range of tasks in the defence. They include:

a. *Reconnaissance.* Engineer reconnaissance will identify key ground for the defence, natural obstacles to be exploited, routes for manoeuvre and deployment areas for reserves, artillery and other assets. An important task is to find local resources which can be exploited in constructing the de-

fence: civilian engineering plant (even including spades), construction materials and so on.

b. *Obstacle Creation.* Details of a typical GENFORCE minefield are given in Diagram 5-10. Physical obstacles include anti-tank ditches, wire and concrete, metal and timber constructions. Explosives may be laid to create ditches with firing delayed to surprise the enemy by opening a ditch immediately in front of a penetration.

c. *Fortification.* Forward units in contact with the enemy will usually have to prepare their own fortifications but positions in depth, CPs and artillery firing positions may all be fortified with the assistance of regimental, divisional or higher level engineer units.

d. *Camouflage.* Engineers advise on camouflage and assist in concealing large and important targets. Engineer assets may also be used to create dummy positions as part of the camouflage and deception plan.

e. *Counter-Attacks.* Engineers may be used to improve and mark routes for counter-attack groupings in advance. Counter-attacking regiments and divisions will also use MSDs to ensure their arrival on the departure line on time.

5057. ***Chemical Support.***

a. *Offensive Use of Chemical Weapons.* If political clearance for the use of chemical weapons is granted priority targets will be command posts, assembly areas and deployment lines for attacking troops, second echelon forces and reserves, artillery firing positions and helicopter operating bases. In addition ground contamination, using vehicles such as ARS-14, may well be used to deny axes or other key ground.

b. *Chemical Defence.* Within defensive positions dug-outs and bunkers will be prepared with chemical screens to protect personnel in the event of a chemical strike. Chemical reserves will be held throughout the divisional sector to decontaminate personnel, vehicles and key ground.

c. *Smoke.* Smoke and aerosols will be widely used, particularly in the security zone and other forms of mobile defence, to cover withdrawals or the forward movement of reserves and counter-attack forces. Smoke generating equipment may also be held ready to cover key targets against air attack.

d. *Flame Weapons.* Flame-throwers are considered a very valuable supplement to anti-tank defences. Flame-thrower sub-units may be deployed within strongpoints or used in ambush positions in front of the main defences, on flanks and in the depth of the position.

5058. ***Electronic Warfare.*** Electronic defensive measures will include extensive use of line communications and liaison officers within positions to minimize radio transmissions. Electronic deception will be used to confuse the enemy about the layout of the defence. REC strikes will supplement defensive fire planning and are likely to be targeted especially against the enemy's command and control system immediately before he launches a major attack and will support GENFORCE counter-attacks.

5059. ***Logistics.*** (See Table 5-5). The basic principles of logistic support are as in the offensive. Higher levels of command are responsible for delivering supplies to their subordinates and priority will be given to the division's main sector of concern. Battalions on the forward edge of the defence will dump reserves of ammunition and other supplies in company strongpoints, to minimize the need to move soft-skinned vehicles under enemy fire. In manoeuvre defence great attention is paid to making units and sub-units as self-supporting as possible.

TABLE 5-5 DEPLOYMENT OF LOGISTIC UNITS
(average distances in km from FEBA)

Ser	Type of Unit	Division	Regiment	Battalion	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Supply Point	35-50	10-20		There should be not more than 40 km between div and regt supply points
2	Ammo Point	35-50	10-20	Up to 4	
3	POL Point	35-50	10-20		
4	Assembly Point for damaged vehicles	35-50	10-20		
5	Technical Obsn Point and Repair-Evacuation Group	10-20	Up to 10		
6	Medical Aid Post	10-20	5-10	2-4	Regt aid post will allocate casualty collecting dets to bn sectors

SECTION 7- DEFENCE IN SPECIAL CONDITIONS

5060. ***General.*** As in the offensive, GENFORCE tactics are modified to meet the requirements of combat in special conditions. A characteristic of such operations is that considerable effort is required merely to overcome the physical difficulties of terrain and climate, often greatly increasing the work-load in preparing the defence. Tactical features of the defence in special conditions include greater de-centralization of resources to lower levels of command in order to form more capable all-arms groupings and, often, the possibility of units' and sub-units' defending wider frontages than on normal terrain.

5061. ***Combat at Night.*** All commanders must adapt their defence plans for night operations. Combat security and reconnaissance elements to the front and flanks of the position will be strengthened. Additional weapons systems will be deployed towards the forward edge of the defence; the number of observation posts will be increased and they will be supplemented by listening posts. Redeployed weapons and personnel will return to their main positions before daylight.

5062. ***Illumination Plan.*** The illumination plan is developed to illuminate and/or blind the enemy, without disclosing GENFORCE positions. Out to about 1500 metres artillery and mortar illumination can be organised to permit the use of daylight sights but rounds must not fall closer than 1200 metres to the FEBA if one's own positions are not to be lit up as well. Each company normally has its own illumination post to provide close-in illumination. Three such posts can cover a standard 5 km battalion frontage.

5063. ***Counter-Attacks.*** If the enemy succeeds in breaking in to the defence at night, artillery and mortar fire, together with flanking fire from tanks and other direct fire weapons, will be used to halt the penetration. Counter-attacks may then be launched by second echelons or reserves using routes reconnoitred and prepared by day. Luminous markers may be used to indicate routes.

5064. ***Defence in Built-Up Areas.*** In the GENFORCE view towns and cities are well suited to the organization of the defence; there are many buildings and other sites which can be quickly converted into formidable obstacles. The main features of GENFORCE defensive tactics in towns are:

a. The defence is organized around mutually-supporting strongpoints, chosen to dominate key routes, cross-roads, squares and other open spaces. A platoon strongpoint might cover one or two buildings. A battalion may defend a block or more.

b. A battalion's or company's combat formation may be in one or two echelons, but two-echelon formations are most usual. Additional features of the combat formation may include a reserve (even in a two echelon formation), armoured groups to provide mobile firepower and ambushes. Battalions may also form storm groups in their second echelon, identical in strength

and structure to those used in the attack (see Diagram 4-13); these are used to recover any key building captured by the enemy.

c. The forward edge of the defence is sited on the outskirts of the town or even out into the country if it is desirable to hold dominating ground. A security zone is often organized outside the town.

d. The motor rifle battalion and company are the basic building blocks of the defence and they will receive strong reinforcements. Tanks and most of the supporting artillery will be subordinated to motor rifle elements and used to provide direct fire from strongpoints, covering any reasonable field of fire. Anti-tank weapons will be sited to cover road junctions and to fire along streets. Engineer assets will be incorporated down to company level to assist in fortifying buildings, creating obstacles and improving routes between strongpoints. Flame-throwers are considered ideal weapons for FIBUA and will be assigned in pairs or small groups to platoon strongpoints or placed in ambush positions.

e. Strongpoints are expected to continue to resist even when encircled and additional reserves of ammunition and other stores will be pre-dumped in them to provide a considerable measure of tactical independence.

5065. ***Defence in Mountain Areas.*** In mountain areas the defender can hold a wider frontage than normal terrain but at the same time faces many extra difficulties in organizing his defences. In particular the lack of roads restricts manoeuvre and therefore the defence is based on separate strongpoints sited to hold vital ground such as commanding heights, passes, road junctions and river crossings. On plateaux and in wide valleys the defence is organized normally.

5066. ***The Layout of the Defence.*** A two-echelon defence is standard in mountain areas, although in sectors unsuitable for armoured movement, where the enemy is forced to attack on foot, the defence may be constructed in one echelon, with a reserve. A minimum of resources will be allocated to terrain unsuitable for any movement. Strongpoints must be organized for all-round defence. The intervals between them will be covered by reconnaissance, patrols, obstacles and demolitions and by ambushes. GENFORCE makes great use of ambushes in mountain operations, not only in gaps between positions, but in front of them and in depth. Part of the second echelon will be designated as an anti-air landing reserve because of the probability that the enemy will try to use air mobile forces to by-pass the forward defences.

5067. Mountain passes are covered by holding the ground dominating the approaches, but a part of the defending force will be deployed in the pass itself. Obstacles and mines will be laid on the road through the pass and covered by crossing fire. Narrow canyons are covered by crossing fire from either side.

5068. ***Combat Support.***

a. *Armour.* Despite the problems of movement in mountains, tanks will be deployed in motor rifle strongpoints whenever possible. Tanks and anti-tank weapons will be sited with the maximum possible range of fire to cover roads, ravines, river crossings, the edges of woods &c.

b. *Artillery.* Artillery is also often placed in strongpoints, in small numbers, in direct fire positions. Indirect fire artillery often has to be deployed by batteries rather than battalions. Howitzers and mortars are valued for their ability to cover dead ground behind reverse slopes and in valleys. Units normally garrisoned in mountain areas may be equipped with heavy mortars and light mountain guns. Artillery concentrations are planned to cover possible out-flanking routes around positions and on likely LZs for air-mobile forces.

c. *Engineer Work.* Much of the engineer effort will be devoted to blocking routes and improving natural obstacles. Rock slides may be used to block axes and in wooded areas large numbers of trees will be cut or blown down to create abatis. Mines are used on possible routes and to reinforce obstacles. Fortification work may include assisting the infantry in building sangars and constructing bunkers or pill-boxes. Sappers will also be used to improve routes for reserves and second echelons.

d. *Flame-throwers.* Flame-throwers can be used to advantage in the often restricted mountain spaces. They may reinforce strongpoints defending passes, commanding heights and road junctions or be used in ambushes.

e. *Reconnaissance.* Patrols and OPs will be concentrated on the most favourable approaches to a position and on possible by-passing routes.

5069. ***Fighting in Depth.*** If the enemy succeeds in penetrating the defence GENFORCE expects strongpoints to continue their resistance on the flanks, even when totally encircled. Counter-attacks will be launched, even with quite small forces, using prepared routes and attacking from higher ground whenever possible. GENFORCE also considers that mountain areas favour attempts by the defender to strike into the enemy's depth. Diversionary forces, raiding and other detachments will be infiltrated into enemy-held areas.

5070. ***Defence in Deserts.*** Deserts offer very mixed terrain, with areas of good going interspersed with soft sand, dunes, salt pans &c which restrict or totally prevent movement. Defence sectors are therefore often wider than usual. GENFORCE practice is to cover the most likely axes with battalion positions and company strongpoints, organized for all-round defence, and accept greater intervals than usual between them. Strong second echelons or reserves are held to counter-attack or reinforce threatened sectors. The improvement of manoeuvre routes is a vital engineer task in desert warfare.

5071. ***Tactical Variations.*** The openness of desert terrain offers longer fields of view and fire. Reconnaissance is organized in greater depth than the norm and direct fire weapons are effective at longer ranges, which makes it possible to increase sub-unit frontages. Precision-guided weapons are also more effective in such terrain and special attention must be paid to camouflage and concealment.

5072. ***The Influence of Desert Conditions on the Defence.*** Fortification work is much more difficult in deserts. Soft sand needs reinforcement with sand bags or fascines and there is generally a great shortage of local material to use in preparing defences. Strong winds blowing sand and dust mean that great care is required to keep weapons serviceable. Laying mines is difficult in many sectors and even when minefields are laid, they must be inspected regularly to check they have not been exposed by the wind.

5073. ***The Defence in Arctic Regions.*** As so often in defence in special conditions a sector can be held with weaker forces than on normal terrain. Wider frontages are achieved by accepting larger intervals between platoon and company strongpoints prepared for all-round defence. Strongpoints are sited to cover roads, dominant high ground, defiles between lakes and river crossings. Gaps are covered by obstacles, patrolling and ambushes. Explosives may be laid on frozen lakes and rivers for use if the enemy attempts to cross them. Strongpoints are made as logistically self-sufficient as possible so they continue to operate, even if cut-off by the enemy or the climate. Fortifications may have to be built up above ground level, but where snow cover is deep enough trench systems will be dug.