



National Défense
Defence nationale

B-SJ-100-200/FP-001

LAND FORCE

LAND FORCE THREAT FORCE MODEL (ENGLISH)

(This publication supersedes B-SJ-100-002/PT-006, B-SJ-100-002/PT-007, and B-SJ-100-002/PT-008)

WARNING

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Issued on Authority of the Chief of the Land Staff

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INTRODUCTION

1. This publication replaces B-SJ-100-002/PT-006, 007 and 008 Generic Enemy (Basic Forces) Parts 1-2. Its purpose is to provide a basis for the generation of enemy forces threat modeling and templating for all except the most specialized training needs. It is designed to be used flexibly, in a modular fashion, to craft enemy requirements for training. It is directed specifically at planning and directing staffs (DS) for exercise planning and at Army students so that they can effectively conduct intelligence preparation of the battlespace (IPB) and the operational planning process (OPP) at division/brigade level and below on tactical exercises without troops (TEWT), tutorial exercises (TUX), computer-assisted exercises (CAX) and command post exercises (CPX). This publication is not intended as an opposing forces (OPFOR) tactical handbook for field training exercises since it does not contain the necessary detail for low-level tactical operations. It must be stressed that this enemy force threat model is a training tool and is not designed for 'real world' operational planning.

2. This OPFOR model is based on a TRIPLE COMPACT alliance. The TRIPLE COMPACT consists of three types of forces, 'Basic Forces', 'Mobile Forces' and 'insurgents'. Note however, that the model itself is not scenario-dependant and is very flexible. An asymmetric threat can be developed from the TRIPLE COMPACT's developing and insurgent forces. The recommended setting is in the region of the BALKANS.

3. One or a combination of three different types of organizations are faced:

- a. Combined Arms (CA) formations—regular/professional, new doctrine, highly versatile, modern and capable.
- b. Armoured formations—mix of regular/professional and cadre/reservist, fairly modern with evolving doctrine.
- c. Motorized formations—cadre/reservists, obsolete/old Warsaw Pact equipment, old doctrine.

For example it offers a less-capable force structure that the Main Contingency Force Brigade (MCF Bde) can “fight” or a more sophisticated force can be thrown up to “fight” a blue force consisting of a Canadian force as part of a US division. The OPFOR model is a two-army force which contains different levels of sophistication, including a force which evolves. The model is flexible and asymmetry can be introduced through it.

4. Advantages to using the OPFOR model are:
 - a. offers a less capable force (Basic) that the MCF Bde can fight with success;
 - b. a scalable and more sophisticated force may be built up;
 - c. offers more challenges to the student since it has fewer norms or templates;
 - d. Naval and Air Forces are included;
 - e. an irregular force based on ethnic minorities is available; and
 - f. a terrorist doctrine is included.

5. This model reflects the modern threat that the Canadian Army will face. This model is symmetric, the enemy fights based on a doctrine, yet the templating is not complete since the enemy is variegated and offers several different 'faces'. Therefore there is no complete template. Intelligence Preparation of the Battlespace will place more emphases on defining the battlespace and its effects. Situation templates will have to be developed based on cultural and ethnic studies, history , biographical intelligence, etc. As this enemy's doctrine evolves so will doctrinal templating. All of this is scenario-dependant. The facet of the enemy TRIPLE COMPACT alliance employed will depend on the lesson(s) to be learned, teaching points, etc.

6. The three parts to this publication are as follows:

- a. **Part One:**

- (1) Chapter 1—The peacetime locations, structure and organization of the TARTAN Armed Forces.
 - (2) Chapter 2—The peacetime locations, structure and organization of the LEMGO Armed Forces.
 - (3) Chapter 3—The peacetime locations, structure and organization of the STROMIA Armed Forces.
- b. **Part Two:**
- (1) Chapter 4—The TRIPLE COMPACT/OPFOR forces doctrine and tactics and conduct.
 - (2) Chapter 5—The combat indicators that TRIPLE COMPACT/OPFOR forces would show on the battlefield and deception.
 - (3) Chapter 6—The irregular forces of the Vento Freedom Fighters Army (VFFA), its organization, equipment/weapons and modus operandi/tactics.
- c. **Part Three**—Chapter 7—The OPFOR equipment, listed by function, and detailed descriptions (including pictures and/or photographs) for each equipment type.

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**PART 1
BACKGROUND AND GENERAL GEO-POLITICAL
SITUATION**

- 1. The recommended setting is in the region of the BALKANS. The “Host Nation” country is VENTORA, which is bordered by the three belligerent countries of TARTAN, LEMGO and STROMIA. A fourth bordering country, LOWLAND is a neutral nation.
- 2. VENTORA was formed post Second World War as a VENTO homeland and carved from the former TARTAN and LEMGO territory, plus the former Commonwealth protectorate of VENTO NOVA. CANADA retains close ties with VENTORA, which is a nation with a democratically elected government. There are significant VENTO, TARTAN and LEMGOAN ethnic communities within VENTORA, with whom they are reluctant co-exist.



Figure 1–1: Vento Ineralia Region

Land Force Threat Force Model

3. Economic problems, which are exacerbated by the United States (US) led coalition against terrorism, have distracted world attention away from the region.
4. The three belligerent countries of TARTAN, LEMGO and STROMIA have formed an alliance called the TRIPLE COMPACT as a result of their historical and cultural links.
5. TARTAN and LEMGO have large ethnic communities living in VENTORA and have inspired, trained and equipped irregular forces to support the VENTORA FREEDOM FIGHTERS ARMY (VFFA).
6. None of the three belligerent countries are aligned with the WEST or the EAST, however, all are members of the United Nations (UN). LEMGO has a mutual defence pact with FLAVIA (which is to the NORTH-EAST of LEMGO). FLAVIA will not support LEMGO aggression against VENTORA, but is bound by treaty to respond if LEMGO is attacked.

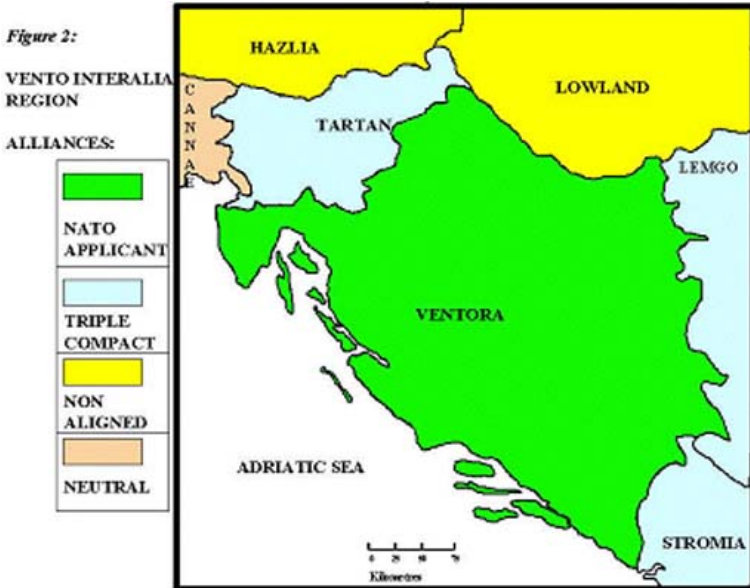


Figure 1-2: Vento Interalia Region

7. The strategic goal of the TRIPLE COMPACT alliance is to isolate VENTORA, both geographically and politically. They also aim to assimilate VENTORA, culturally, politically and economically.

8. The TRIPLE COMPACT alliance lacks a coherent or unified strategy in order to achieve their strategic goals. However, many of their armed forces are equipped with similar hardware and have trained to similar military operational and tactical doctrine.

TARTAN

9. **Capital.** LJUBLJANA.

10. **Military Forces.** See Part 1, Chapter 1.

11. **Strategic Goals:**

- a. Ports on the ADRIATIC—RIJEKA, SPLIT.
- b. Control of Natural Resources (mining) in the vicinity of KLEKOVACA—VITORG and VIJENAC—STARETINA.
- c. Re-establishment of the pre-Second World War boundary on the Rivers SAVA, VRBAS and NERETVA (includes ZAGREB).

12. **Strategic Centres of Gravity:**

- a. LJUBLJANA is the political and economic hub of TARTAN (National Will).
- b. TRIPLE COMPACT unity.

13. **Operational Centre of Gravity.** Presidential Guard Division (Heavy Armoured Division).

LEMGO

14. **Capital.** BEOGRAD.

Land Force Threat Force Model

15. **Military Forces.** See Part 1, Chapter 2.

16. **Strategic Goals:**

- a. Control of the River SAVA and the River DRAVA basin.
- b. Re-establish the land link from BEOGRAD–ZAGREB–LJUBLJANA.
- c. Isolate VENTORA from the rest of Europe through economic strangulation.
- d. Foster civil unrest through LEMGOAN factions within VENTORA. The ultimate goal is the overthrow of the Ventoran government and the establishment of a regime favourable to LEMGO.

17. **Strategic Centres of Gravity:**

- a. BEOGRAD is the religious and cultural foundation of LEMGO (National Will).
- b. TRIPLE COMPACT Unity.

18. **Operational Centres of Gravity:**

- a. Combined Army Corps (Operational Reserve).
- b. EAST–WEST Lines of Communication.

STROMIA

19. **Capital.** NIKSIC.

20. **Military Forces.** See Part 1, Chapter 3.

21. **Strategic Goals.** These are limited due to their small armed forces. They know that they must operate in conjunction with the TRIPLE COMPACT alliance:

Background and General Geo-political Situation

- a. Establish a second commercial port on the ADRIATIC coast at DUBROVNIK.
- b. Establish a Line of Communication from NIKSIC–REBINJE–DUBROVNIK.

22. **Strategic Centres of Gravity:**

- a. TRIPLE COMPACT Unity.
- b. Social and political situation.

23. **Operational Centre of Gravity.** Sustainment of a lengthy campaign.

VENTORA

24. **Capital.** SARAJEVO.

25. **Military Forces.** All of VENTORA's forces are at normal readiness. They have an army of three brigade groups, with 1970s/1980s equipment, both Western and Warsaw Pact. The Air Force has one fighter wing (with 1970s equipment, all Western). The Navy has two missile/patrol boat squadrons and a squadron of diesel/electric submarines. They have no Nuclear, Biological and Chemical (NBC) capability and no special purpose forces (SPF).

26. **UN and North Atlantic Treaty Organization (NATO).** VENTORA is a member of the UN and has "Favoured Nation Status" with the NATO Alliance.

27. **Strategic Goals:**

- a. Preservation of the state.
- b. NATO alliance and European Union (EU) membership.

28. **Strategic Centres of Gravity:**

- a. Alliance support during any major crisis.

Land Force Threat Force Model

- b. Public confidence in the government.

29. Operational Centres of Gravity:

- a. Retain Airports of Disembarkation (APOD) and Sea Ports of Disembarkation (SPOD), for use by Alliance forces.
- b. Interior Lines of Communication.

**PART 1—CHAPTER 1
TARTAN ARMED FORCES**

1. The TARTAN Armed Forces are based on a composite Army Corps of three divisions and a small Air Force. There are no Naval Forces or Special Purpose Forces. However, there is an Internal Security Force similar to a paramilitary police organization which has direct links to the TARTAN inspired VENTORA Freedom Fighters Army (VFFA).



Figure 1-1-1: National Command Structure

Land Force Threat Force Model

1 Corps		LJUBLJANA
Arty Bde		TRBOVLJE
AD Bde		HRASTNIK
Engr Bde		LITIJA
Avn Bde		VOKLO
Other Corps	CS/CSS	LJUBLJANA
	PGD	LJUBLJANA
	Div Troops	SENTVIO
	1 Bde	LJUBLJANA
	2 Bde	NOVO MESTO
	3 Bde	KOCEVJE
	1 MD	POSTOJNA
	Div Troops	POSTOJNA
	1 Bde	ILIRSKA BISTRICA
	2 Bde	AIDOVSCINA
	3 Bde	KOPER
	2 MD	CELJE
	Div Troops	CELJE
	1 Bde	BREZICE
	2 Bde	PJUI
	3 Bde	PODPLAT
Air Force		
	Strike/Bomber Wg	OKLO
	Grd Atk Wg	VOKLO

Figure 1-1-2: Peacetime Locations of TARTAN Armed Forces

SECTION 1 TARTAN ARMY

2. **Introduction.** The TARTAN Army has a composite corps of three divisions, with a mixture of conscript and regular forces. Two of the Army's divisions are motorized and are based on old (60s–70s) Warsaw Pact equipment. They are manned by conscripts. The third division, the 1st Armoured (Presidential Guard) Division [1st PGD], is classed as the elite of the TARTAN Army. It is at seven days notice to move (NTM), is equipped mostly with former Warsaw Pact (70s–80s) and some western equipments and is manned by a professional force of regular troops, who are well trained. The Army has no offensive Nuclear, Biological and Chemical (NBC) capability.

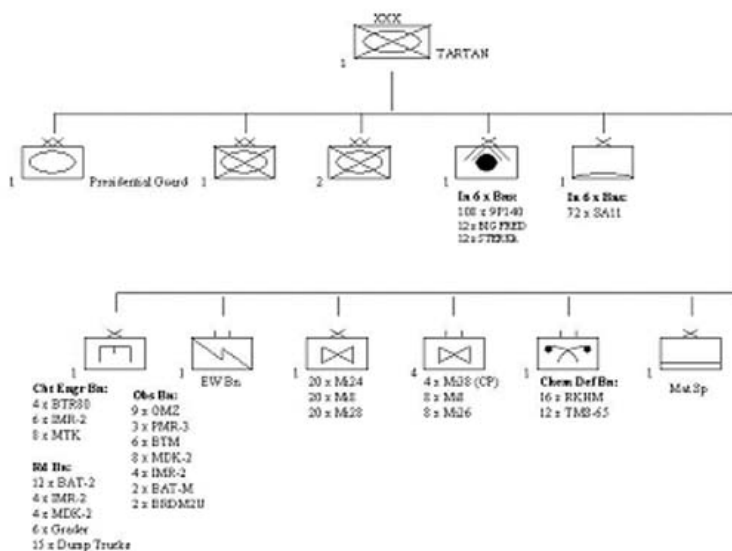


Figure 1-1-3: 1st TARTAN Corps

Land Force Threat Force Model

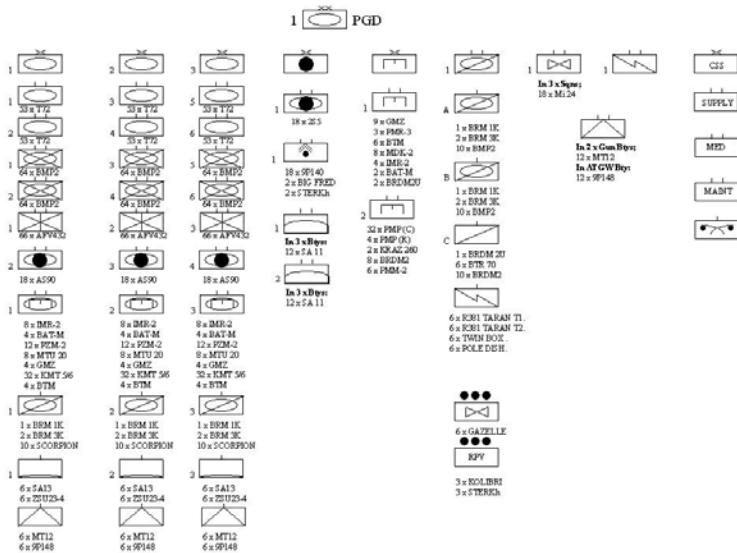


Figure 1-1-4: 1st PGD

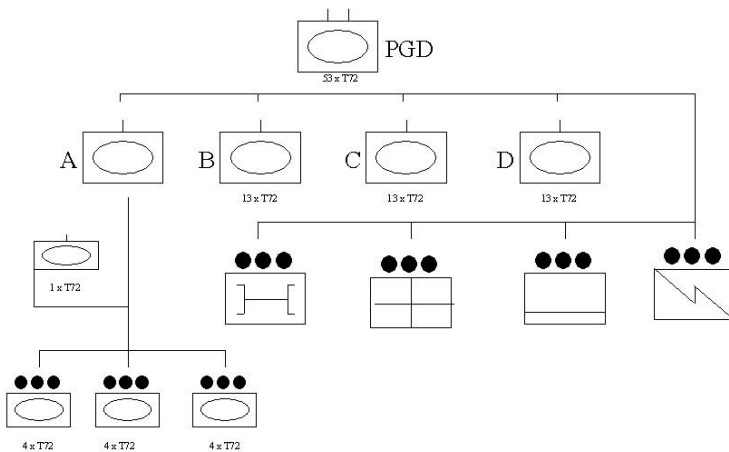


Figure 1-1-5: Tank Battalion—PGD

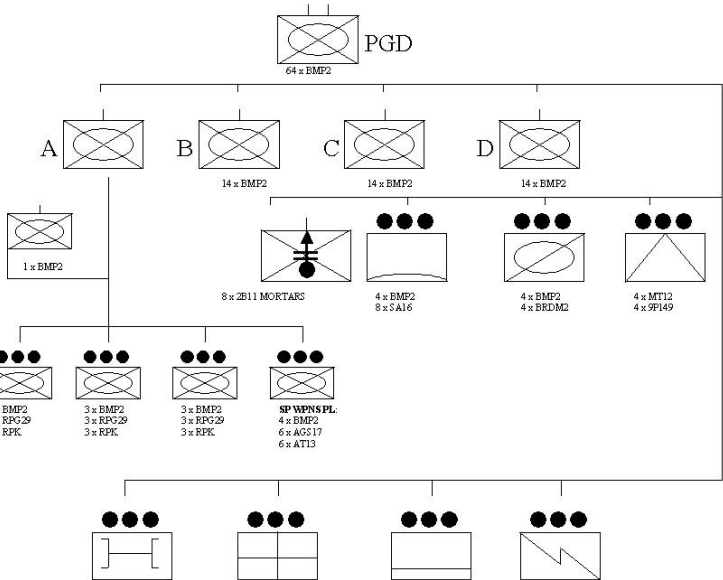


Figure 1-1-6: Motorized Battalion—PGD

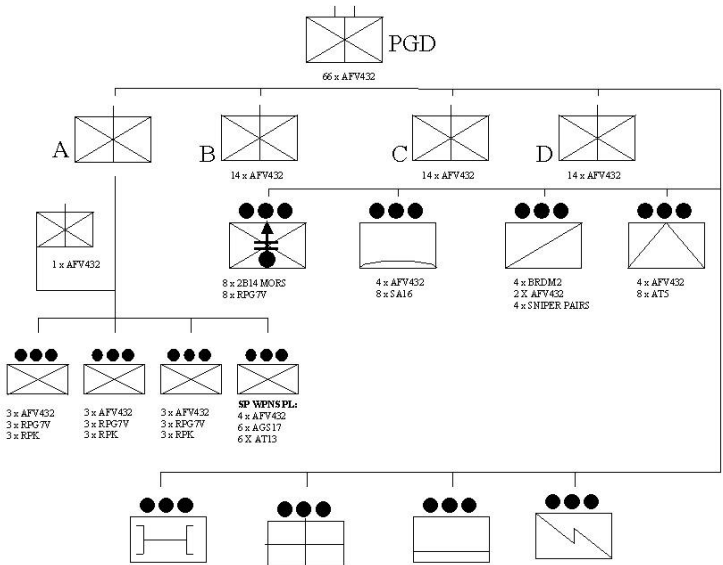


Figure 1-1-7: Light Infantry Battalion—PGD

Land Force Threat Force Model

3. **Motorized Division (MD).** There are two MDs in the Army, first and second; both are identical, although first MD is at higher readiness (notice to move (NTM)) than second.

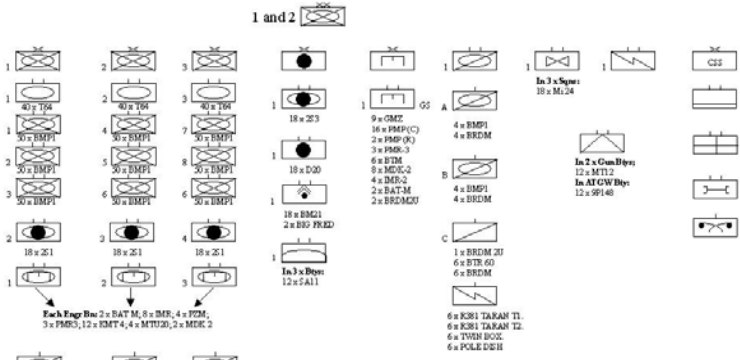


Figure 1-1-8: Motorized Division (MD)

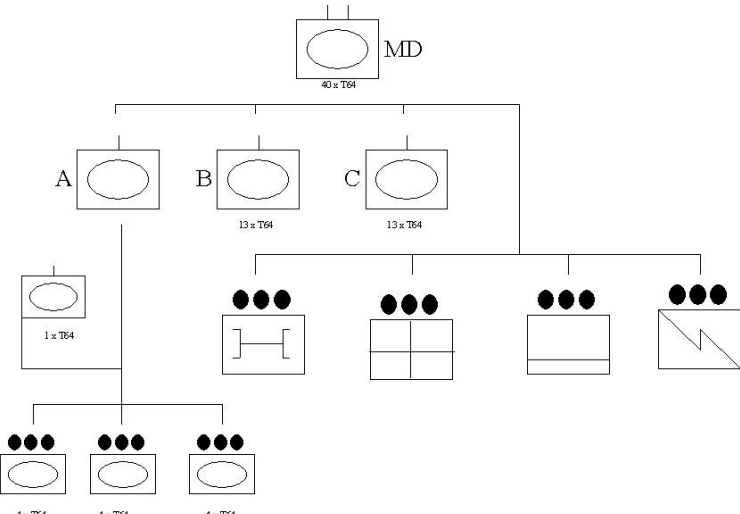


Figure 1-1-9: Tank Battalion (MD)

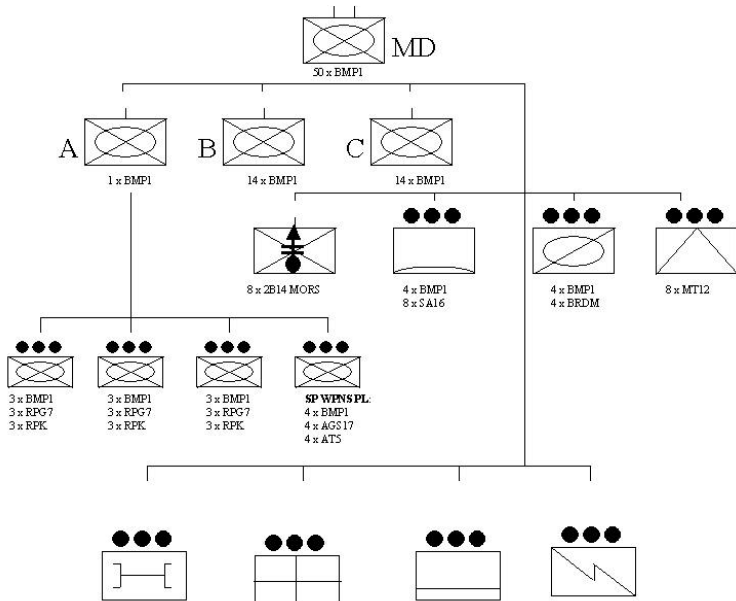


Figure 1-1-10: Motorized Battalion (MD)

SECTION 2 TARTAN AIR FORCE

4. **Introduction.** The TARTAN Air Force has three wings of 70s/80s Warsaw Pact and western aircraft as follows. They have no transport aircraft.

Land Force Threat Force Model

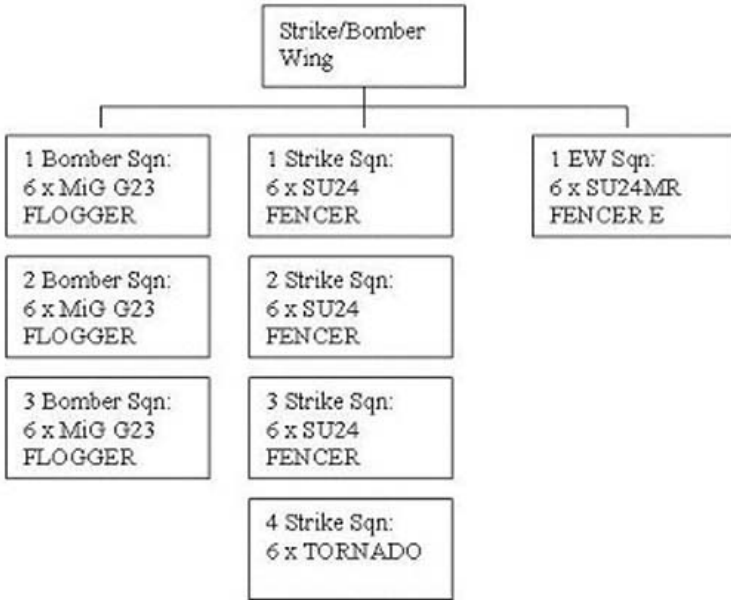


Figure 1-1-11: Strike/Bomber/Electronic Warfare Wing

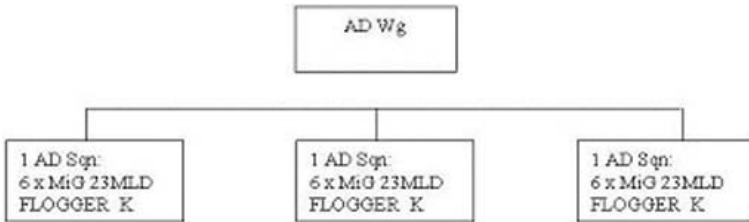


Figure 1-1-12: Air Defence Wing

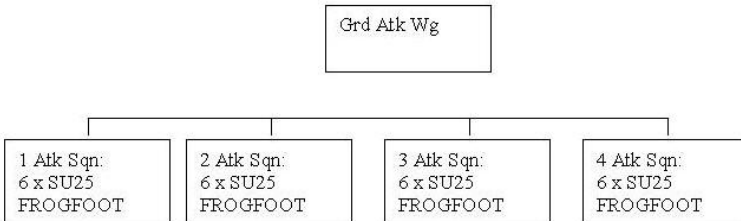


Figure 1-1-13: Ground Attack Wing

PART 1—CHAPTER 2
LEMGO ARMED FORCES

1. The LEMGO Armed Forces are based on an Army of two army corps, an airborne division, a security brigade and a special purpose forces battalion and a large Air Force. There are no Naval Forces. The Army has a chemical surface-to-surface missile (SSM) strike capability. However, there is an internal security force similar to a paramilitary police organization which has direct links to the TARTAN inspired VENTORA Freedom Fighters Army (VFFA).

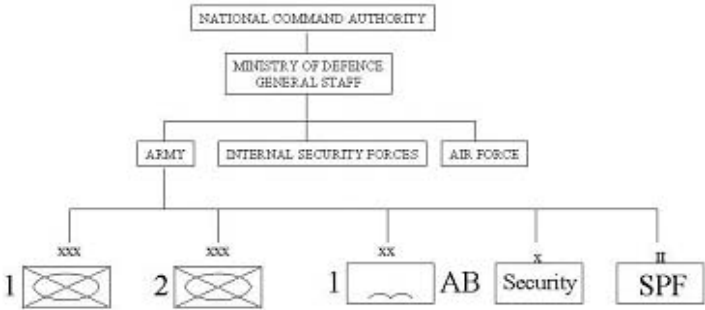


Figure 1-2-1: National Command Structure

Land Force Threat Force Model

1 Corps	Corps HQ		NOVI SAD
	Arty Bde		BECEJ
	AD Bde		FUTOG
	Engr Bde		PANCEVO
	Avn Bde		TEMERIN; TITEL;
			ZRENJANIN
	EW Bde		BEOGRAD
	AT Bde		KOVICJ
	SSM Bde		BEOGRAD
	MRL Bde		BECEJ
	Recce Bde		MLAD ENOVO;
			KARAVUKOVO;
			BOGATIC
	Other Corps	CS/CSS	NOVI SAD; BEOGRAD
		1CA Bde	ZRENJANIN
		2 CA Bde	BACKA PALANTA
		3 CA Bde	SOMBOR
		4 CA Bde	KIKINDA
2 Corps	Corps HQ		KRAGUGEVAC
	Arty Bde x 2		CACAK
	AD Bde		CACAK
	Engr Bde		LAJCOVAK
	Avn Bde		KRACJEVO
	Other Corps	CS/CSS	KRACJEVO
		1 Armd Div	UZICE
		Div Troops	NOVI PAZAR
		1 Bde	NOVA VAROS
		2 Bde	POZEGA
		3 Bde	PRIJEPOLTE
		2 Armd Div	NOVI PAZAR
		Div Troops	NOVI PAZAR
		1 Bde	SNJENICA
		2 Bde	IVANJICA
		3 Bde	RASKA
		3 Armd Div	VALJEVO
		Div Troops	VALJEVO
		1 Bde	SABAC
		2 Bde	LOZNICA
		3 Bde	OBRENOVAC
		AB Div	BEOGRAD
		Div HQ and Div	
		Troops	
		1 Bde	SURCIN
		2 Bde	DOBANOVCI
		3 Bde	JAKOVOV
		Secur Bde	BEOGRAD; NOVI SAD
		SPF Bn	MOKRI LUG; SID
		Air Force	
		Strike Group (3	BEOGRAD
		Wings)	
		Ground Attack Group	NOVI SAD
		(4 Wings)	
		Transport Group	BEOGRAD
		(3 Wings)	

Figure 1-2-2: Peacetime Location of LEMGO Armed Forces

SECTION 1 LEMGO ARMY

2. **General.** The LEMGO Army is based on two army corps, an airborne division, a security brigade and a special purpose forces battalion (SPF Bn).
3. **1 Corps.** 1 Corps is a new structure comprised entirely of regular troops and on high readiness. It is modeled on a combined arms (CA) organization with no subordinate divisional structures. Instead, it has four subordinate CA brigades which are similar to small divisions of the old Warsaw Pact, except that they are equipped with far more modern systems. Each CA brigade has six CA battalions and can be armour or infantry heavy. They also have integral close support (CS) and combat service support (CSS). This corps has surface-to-surface missile (SSM) chemical strike and engineer bridging capabilities. They employ a mix of Western and old Warsaw Pact equipment.
4. **2 Corps.** 2 Corps is a more traditional organization and is identical in structure (but not in equipment types) to the TARTAN Army Composite Corps. Its divisions, brigades and battalions are the same in organizational structure as the TARTAN Presidential Guard Division (PDG). It is comprised of conscripts with a small regular cadre. They employ a mix of western and old Warsaw Pact equipment.
5. **1 Airborne Division (1 AB Div).** 1 AB Div is a regular force formation with three brigades.
6. **Security Brigade.** The Security Brigade is a professional force of 3 x infantry/security battalions, with signals, engineer and some unarmed, support aviation. It is used as a “paramilitary” force on internal security duties on a constant basis. Its primary roles are crowd/riot control, counter insurgency and they are often used in support of the civil police for ‘political’ purposes. They are equipped with small arms only and older BTR70s.
7. **SPF Bn.** Although the SPF Bn is under Army command, it is deployed under central strategic control from Army Theatre Command Headquarters.

Land Force Threat Force Model

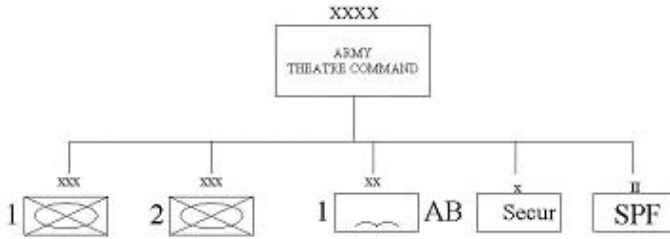


Figure 1-2-3: SPF Bn

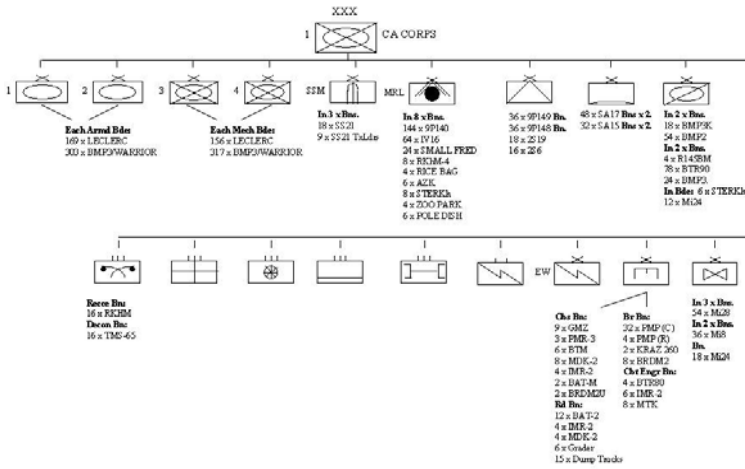


Figure 1-2-4: 1 Corps

8. **CA Brigades.** Each brigade has six manoeuvre battalions. One of them is light infantry (BTR90). Three are CA Armoured (in the armoured brigades) or CA Mechanized (in the mechanized brigades). In all other respects, the CA brigades are identical.

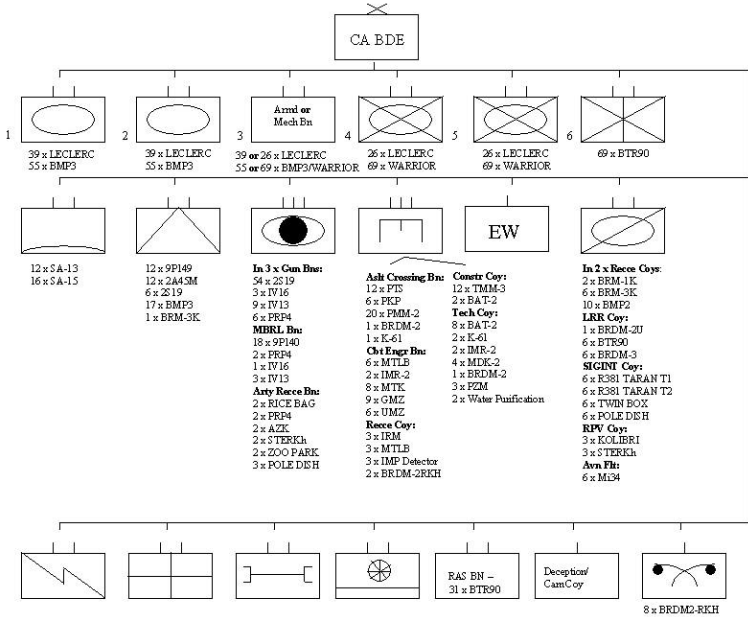


Figure 1-2-5: CA Brigade

9. **CA Battalions.** Each battalion has five manoeuvre companies. Three are CA Armoured (in the armoured brigades) or CA Mechanized (in the mechanized brigades). In all other respects, the CA battalions are identical.

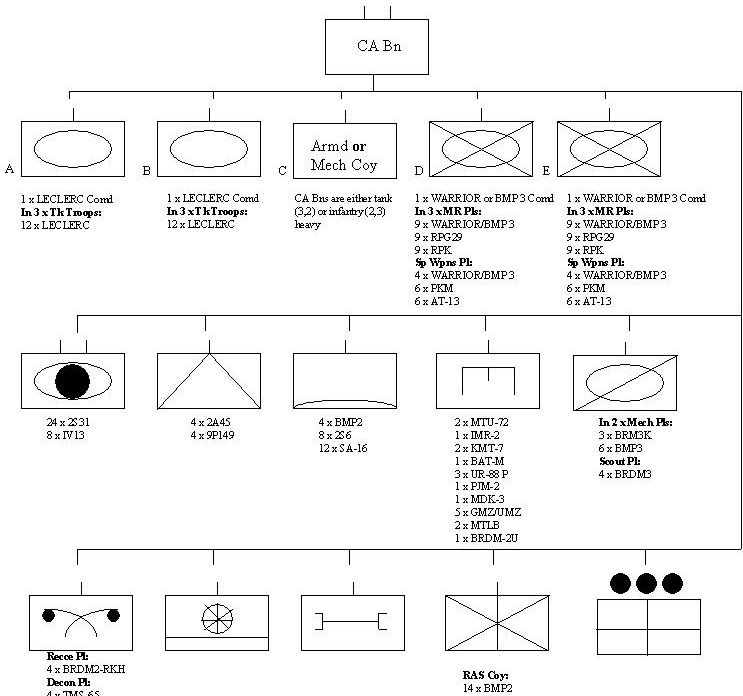


Figure 1-2-6: CA Battalion

10. **Light Infantry Battalion.** These battalions have exactly the same organization as those in the TARTAN Army PGD other than they are equipped with BTR90 instead of BTR60.

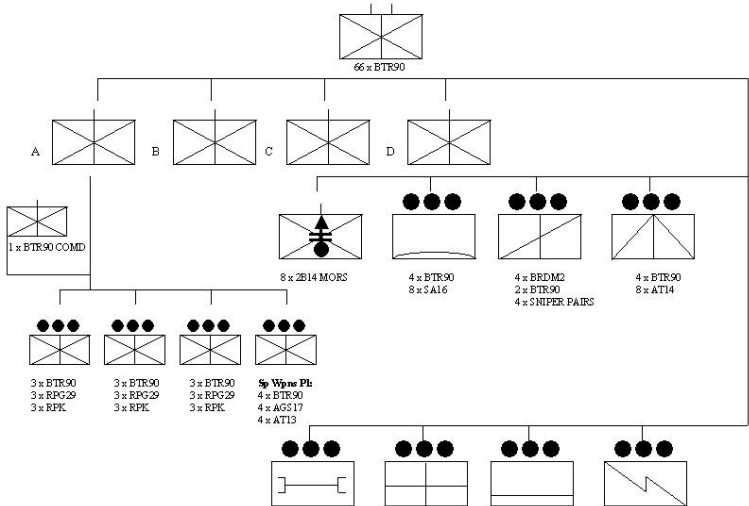


Figure 1-2-7: Light Infantry Battalion

11. **2 LEMGO Corps.** 2 Corps is identical in structure to that of the TARTAN Army Composite Corps. Its divisions are also the same structure as the TARTAN PGD.

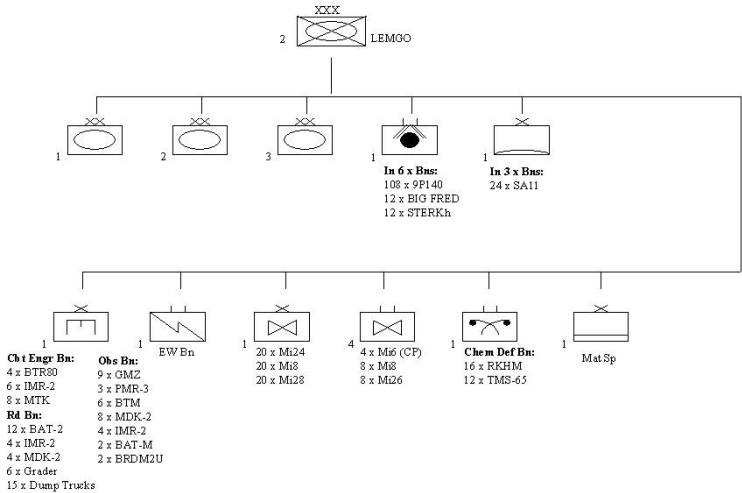


Figure 1-2-8: 2 LEMGO Corps

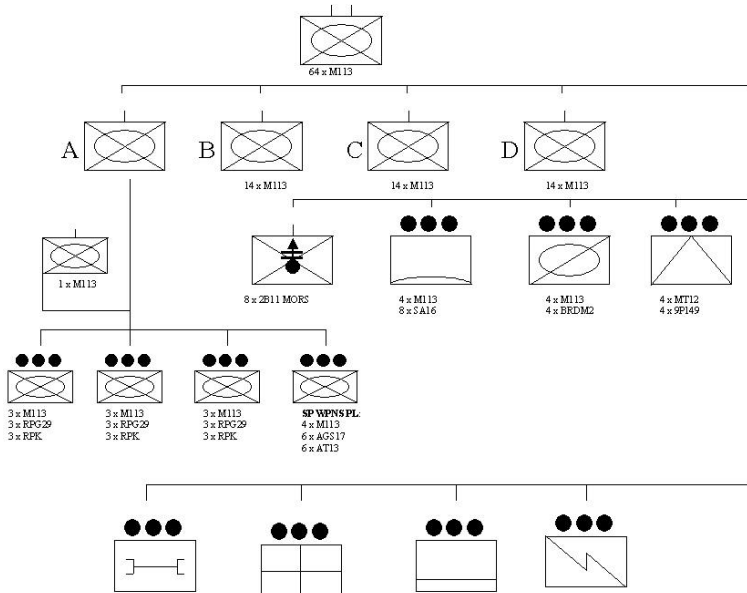


Figure 1-2-11: Motorized Battalion

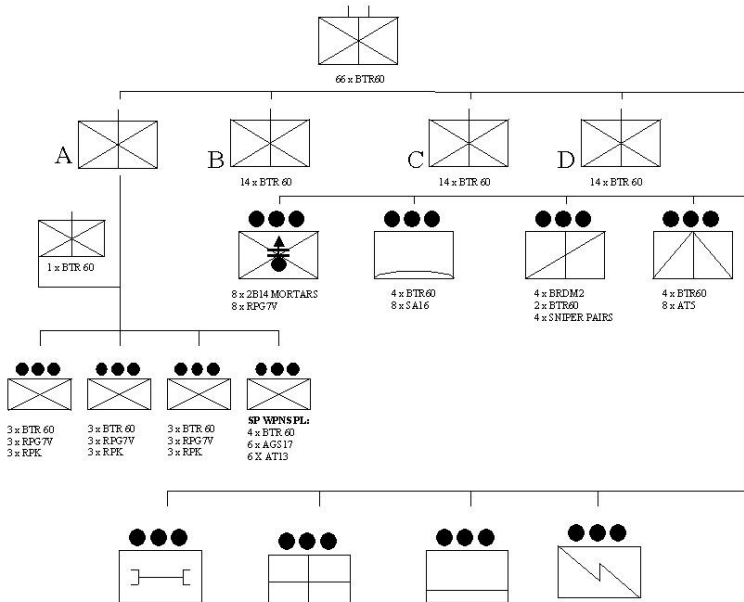


Figure 1-2-12: Light Infantry Battalion

Land Force Threat Force Model

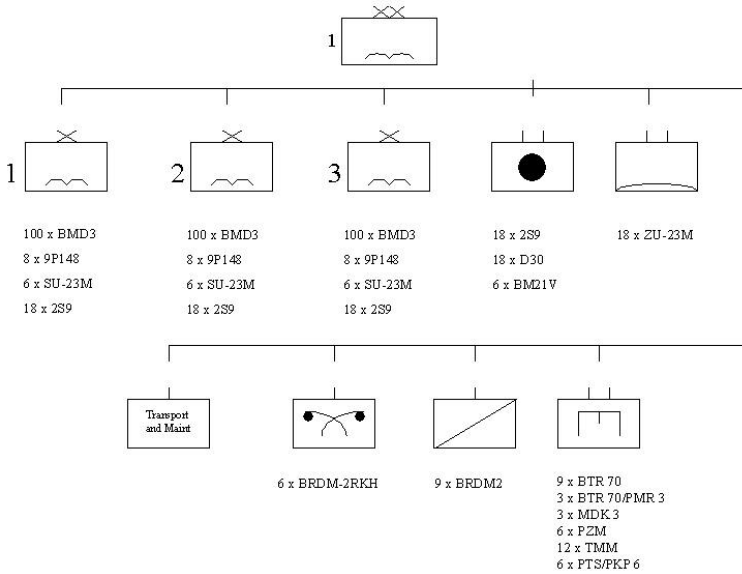


Figure 1-2-13: 1st Airborne Division

SECTION 2
LEMG0 AIR FORCE

12. **Introduction.** The LEMGO Air Force has an air group of three strike wings, an air group of four ground attack wings, an air group of three air defence wings and a transport aircraft wing.

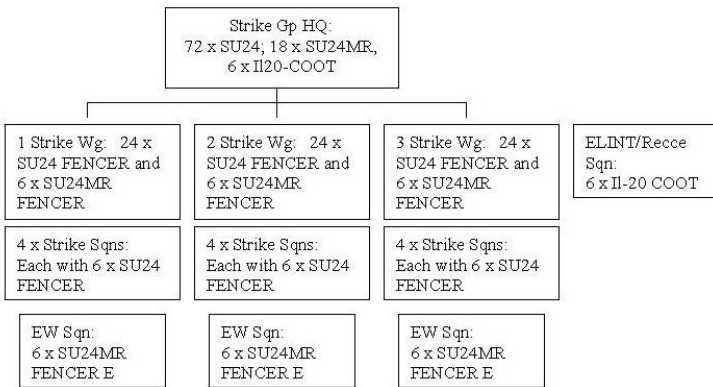


Figure 1-2-14: Strike Group

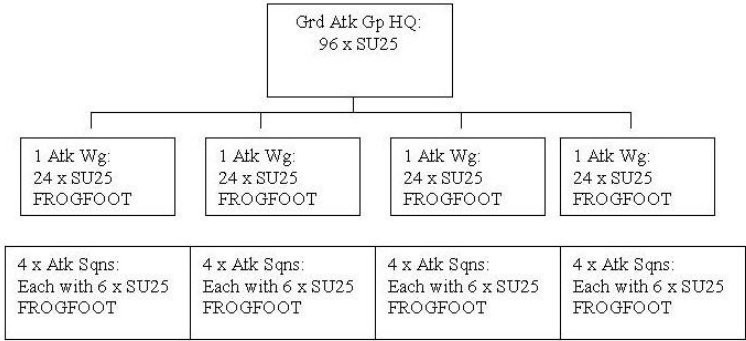


Figure 1-2-15: Ground Attack Group

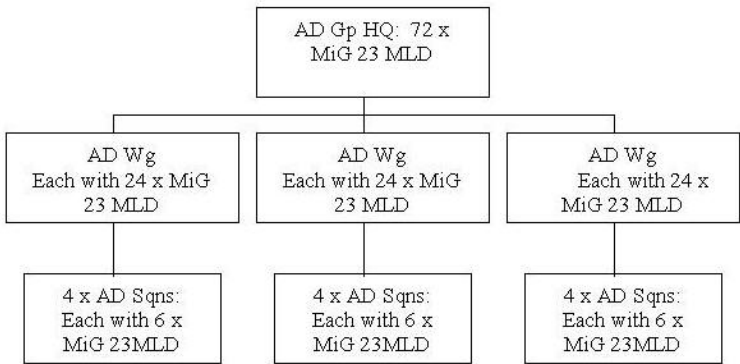


Figure 1-2-16: Air Defence Group

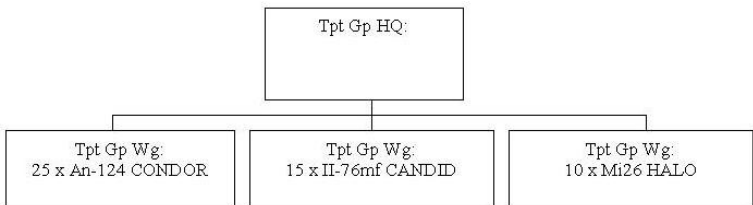


Figure 1-2-17: Transport Group

PART 1—CHAPTER 3 STROMIA ARMED FORCES

1. **Introduction.** The STROMIA Armed Forces are based on a single motorized division, a small Air Force of one wing and a Navy, comprising largely of submarines and patrol/missile boats. There is also a small Special Purpose Force and an Internal Security Force, similar to a paramilitary police organization, which has direct links with the TARTAN inspired VENTORA Freedom Fighters Army(VFFA).

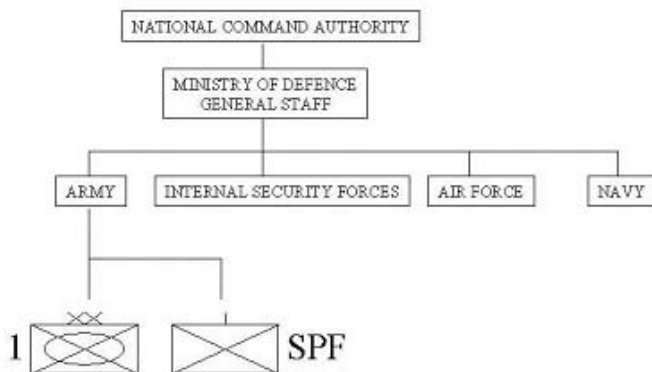


Figure 1-3-1: National Command Structure

1 MRD	Div HQ	NIKSIC
	Arty Bde	PODGORICA
	Engr Bde	DANILOVGRAD
	Recce Bn	DANILOVGRAD
	Avn Bn	GOLUBOVCI
	AT Bn	ZABLJAK
	Div CS/CSS	PODGORICA
		1 Bde
		PODGORICA
		2 Bde
		IVANGRAD
		3 Bde
		KOTOR
SPF Coy		RUDINE
Navy	SSG Sqn	HERCEGNOVI
	Msl/Ptl Boat Sqns	HERCEGNOVI; MILDCER
Air Force		PODGORICA

Figure 1-3-2: Peacetime Locations of STROMIA Armed Forces

SECTION 1 STROMIA ARMY

2. **Introduction.** The STROMIA Army has a division of three brigades, largely conscript with a professional/regular cadre. The division is motorized and is based on 60s–70s exercise Warsaw Pact equipment. The Army has no offensive Nuclear, Biological and Chemical (NBC) capability. The special purpose forces (SPF) are under Army command.

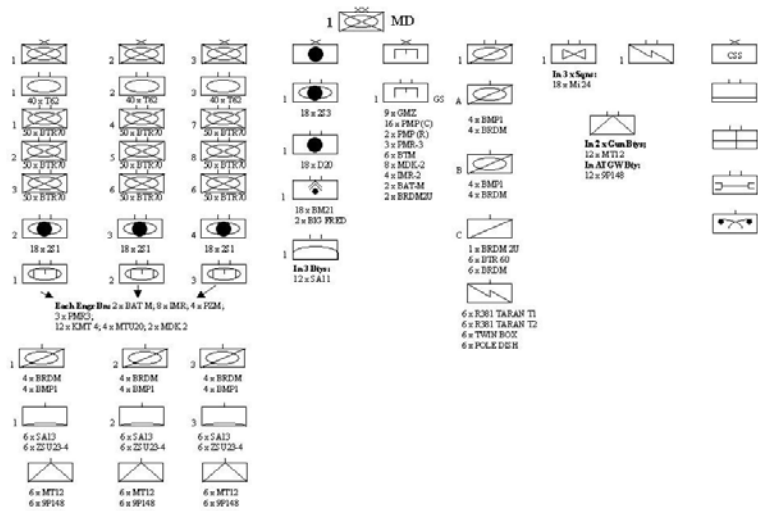


Figure 1-3-3: 1 Motorized Division

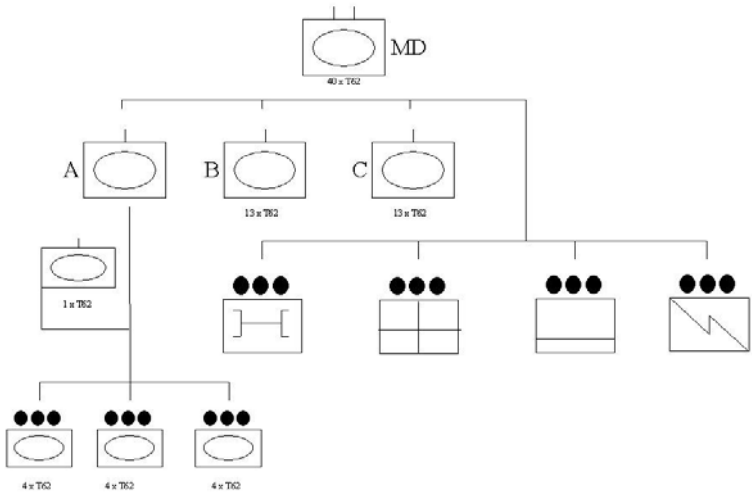


Figure 1-3-4: Tank Battalion—MD

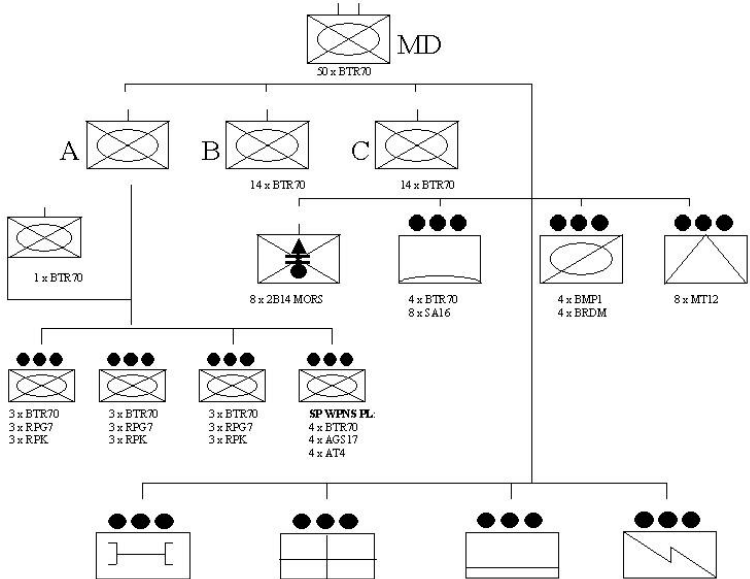


Figure 1-3-5: Motorized Battalion—MD

SECTION 2 STROMIA AIR FORCE

3. **Introduction.** The STROMIA Air Force has one wing of 70s/80s exercise Warsaw Pact aircraft as follows:

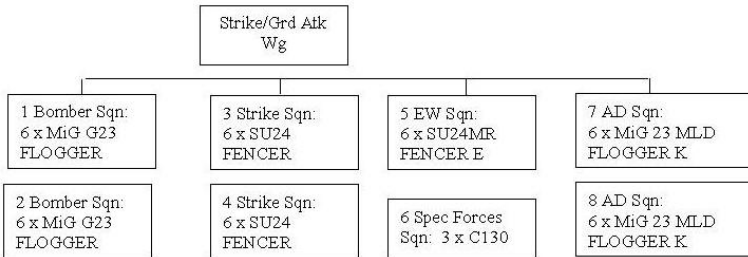


Figure 1-3-6: STROMIA Air Force Strike/Ground Attack Wing

SECTION 3 STROMIA NAVY

4. **Introduction.** The STROMIA Navy has one squadron of diesel electric submarines and one squadron of missile patrol boats. It has no maritime air capability.

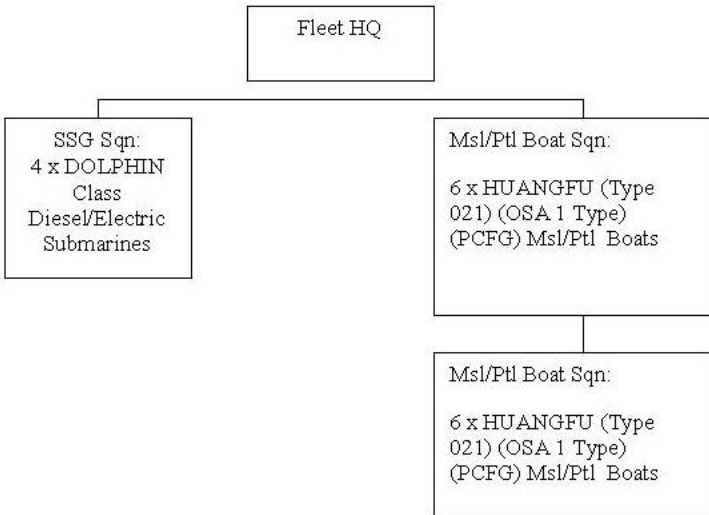


Figure 1-3-7: STROMIA Navy Fleet HQ

**PART 2—CHAPTER 4
DOCTRINE AND TACTICS**

I never underestimate the enemy ... I look at his capabilities and assume he has them until we find out differently.

—General N. Schwarzkopf, 1991

**SECTION 1
THE TWO-ARMIES CONCEPT**

1. **The ‘Two-Armies’ Concept.** Given the problems of organizing, training and, above all, financing all units and formations to meet the highly demanding requirements of future war, the TRIPLE COMPACT Alliance has adopted a "two-armies" concept, Basic and Mobile Forces.
2. **Basic Forces.** These comprise those formations (corps, division and brigade) stationed forward and mobilization reserves in the interior. The Armies of TARTAN and STROMIA are all Basic Forces, whilst LEMGO has one Corps of Basic Forces.
 - a. **Organization.** Both forward and reserve formations are manned largely by conscripts, with the exception of 1 Armoured PGD of the TARTAN Army, which is regular/professional. The PDG is the clearest manifestation of the power and interests, of the President of TARTAN. This division, although under Corps control, is directly subordinate to the TARTAN Ministry of Defence (MOD), which in turn is led by the president’s most loyal supporters. It is the force that will ensure the president remains in power. It has been used in that role to put down three coup attempts and two regional uprisings. These uprisings were put down in a particularly cruel manner (chemical attacks, loaned from LEMGO, were used on several occasions in one uprising). Some of the forward units, particularly in low threat areas, are manned at only 65–75 % in peacetime, though they are fully equipped. These have a modified version of the full training programme and practice mobilization procedures

regularly, with their reservists receiving refresher training. Currently, the Basic Forces are organized into cheap, small, simple and easily handled divisions and brigades. There are seven divisions of Basic Forces, four armoured and three motorized divisions (MDs). LEMGO has a Corps of three armoured divisions and TARTAN has the PGD. All armoured divisions are identical in structure (but not equipment), having three armoured brigades each with two tank, two motorized and one light infantry battalions. Of the MDs, two are in TARTAN and one in STROMIA. These MDs are identical in structure (but not in equipment), having three motorized brigades each with one tank and three motorized battalions.

- b. **Employment.** The Basic Forces perform the less demanding wartime missions. In defence, they absorb, disrupt and slow down or halt the enemy attack, shaping the battlefield and winning time for countermoves. In the offensive, they pin and wear down the enemy and provide protection for the flanks of major offensive efforts and for quiet sectors. In both phases of war, they may be used to provide reserves to meet enemy deep thrusts or air or sea landings.

3. **Mobile Forces.** These comprise a smaller proportion of the total ground forces than the Basic Forces and all are named as "CA" formations and units. Only LEMGO has a corps of Mobile Forces, with four CA brigades. They are the cutting edge. In peacetime, the bulk of the mobile forces are stationed centrally, ready to deploy to any area of military operations as required. Some brigades in the corps, however, are deployed forward in peacetime to areas of high levels of threat in order to stiffen the Basic Forces there and provide formations fully capable of operational manoeuvre.

- a. **Organization.** The Mobile Forces contain a high proportion of volunteer, professional soldiers and officers. All formations are fully equipped with the latest types and are fully manned in peacetime. They undergo a full and demanding training programme, including frequent formation level field

training exercises, and they are kept at a high level of combat readiness. Formations are larger, more complex and more flexibly structured than the traditional, triangular divisions in other parts of the TRIPLE COMPACT. The numbers and types of subordinate elements will be varied to suit the mission.

- b. **Employment.** The Mobile Forces perform the strategically and operationally decisive missions, supported by the Basic Forces. In the defensive, they conduct the major counter-attacks and offensives. In the offensive, they conduct deep operations with decisive goals. The bulk of TRIPLE COMPACT's long-range combat capabilities are held in LEMGO's mobile forces, and it is expected that, in consequence, the TRIPLE COMPACT will win the struggle for information and fire superiority in the areas where they are committed. Infantry battalions from the LEMGO 1 Corps have served with the United Nations (UN) in Europe and Africa where they were noted for their high level of professionalism. However, they were accused of brutality in Central Africa and the TRIPLE COMPACT High Command has stated that it will not send troops to support future UN operations.

- c. **Command and Control.** To increase flexibility and responsiveness within drastically shortened times, and for reasons of economy, the LEMGO Army's 1 CA Corps has removed the divisional level of command between corps and brigades. Progress in communications and the now high level of automation in command, control, communications, computers and intelligence (C4I) has made this possible. Great attention has been paid to electronic counter-countermeasures (ECCM) to ensure continuity and security in command, control and communications (C3), with frequency hopping, burst transmission and automatic retuning in the face of jamming all being employed to degrade electronic attack.

Level of War	Traditional Relationship	Current Relationship	
Strategic	Theatre of Military Operations	TRIPLE COMPACT Alliance	
Operational–Strategic	Army Group	<u>Basic Forces</u>	<u>Mobile Forces (LEMGO only)</u>
Operational	Army	Corps	CA Corps
Tactical	Division	Armoured Division/MD	CA Armoured/Mechanized Brigade
Tactical	Regiment	Armoured Brigade/Motorized Brigade	CA Armoured/Mechanized Battalion
Tactical	Battalion	Motorized/Tank Battalion	CA Armoured/Mechanized Company
Tactical	Company	Company	

Figure 2-4-1: Levels of Combat and their Related Command Levels

SECTION 2 THE PRINCIPLES OF THE TRIPLE COMPACT

4. **Selection and Maintenance of the Aim.** In selecting the aim of any combat action, TRIPLE COMPACT commanders are taught to emphasize the destruction of the enemy. Tactical commanders will have their aim closely defined by senior commanders and they will have little latitude to vary it. TRIPLE COMPACT commanders at brigade and battalion level will be expected to demonstrate much greater initiative as to how to achieve their aim—a style of mission command.

5. **Surprise.** Surprise is considered an increasingly important component of victory. Regulations lay down a mandatory requirement for commanders at all levels to complement all operational and some tactical plans with a deception plan. In the defensive, surprise confers the initiative on the attacker, and disrupts and unbalances the defender, enabling TRIPLE COMPACT to impose its style of warfighting on the enemy. In the defence, it enables TRIPLE COMPACT to wrest the initiative from the attacker and thus goes some way to negating the enemy's superior strength. Pre-emption is seen as a vital component of surprise in all situations.

6. **Activeness and Speed:**

- a. **Significance of the Initiative.** TRIPLE COMPACT considers that all the strengths of a good defensive position are outweighed by the advantages of possession of the initiative that an attacker will have. An attacker dictates the course of events and usually has better morale. TRIPLE COMPACT endeavours to maintain an offensive state of mind in its commanders.
- b. **Constant Pressure.** Offensive action must be pursued around the clock, regardless of weather. Where necessary, momentum is maintained through the acceptance of casualties, as physical losses are more acceptable than the loss of time, which is seen to be the most precious commodity in modern war.
- c. **Speed.** In the offensive the creation of speed by high **tempo** operations will unbalance the enemy and disrupt his C2 arrangements, paralysing commanders and isolating forces for subsequent destruction. Bypassing is preferred to assaulting, with the transition to the pursuit being sought as early as possible. In the defence, emphasis is placed upon rapid regrouping and reaction by reserves. In both phases of war, great stress is placed upon the speedy reactions of air, missile and artillery strike systems and the use of air mobility to carry the battle to the enemy's depth.

- d. **Commander's Initiative.** Commanders are made aware of their superior's concept of operations and are expected to seize any opportunity to further his aims. Nonetheless, while the "how" will often be left to subordinates, the "when" and "where" will still tend to be closely controlled.

7. **Concentration:**

- a. **General.** Success stems from the concentration of superior force at a decisive time and place. Importantly, TRIPLE COMPACT does not just examine relative numerical strengths; it also considers the ratio of forces to space, particularly when a defender is overstretched. Thus a defender with adequate force density will be difficult to overcome unless by massive application of firepower to lower the force density prior to tactical manoeuvre. Conversely, a defender stretched to cover an excessive sector can be defeated by an attacker with little or no numerical superiority, but possessing the initiative and freedom to concentrate his efforts at the chosen point of attack.
- b. **Ratios.** TRIPLE COMPACT will accept a ratio of 1.5:1 in the strategic offensive, as long as 3 or 4:1 can be achieved at the operational level. At the tactical level (division/CA brigade and brigade/CA battalion), 5 or 6:1 is sought against a prepared enemy on a main axis (although this does not mean that the attack will be unimaginative and attritional), while 3:1 could be acceptable on a secondary axis, against a partially prepared, or over extended defence.
- c. **Achieving Correlation of Forces.** TRIPLE COMPACT follows five complementary approaches to the problems of concentration to achieve the requisite correlation of forces in the offensive:
 - (1) **Manoeuvre.** In the offensive, given operational surprise, an incompletely

prepared and unbalanced enemy will be destroyed in a series of meeting engagements. In defence, manoeuvre is even more important, as a superior enemy cannot be defeated in an attritional struggle. Only manoeuvre to create counter-concentrations, surprise and aggressive countermoves will bring success.

- (2) **Deception.** An enemy must be persuaded, through deception and feints, to concentrate his forces on false axes, thus reducing his combat density on the chosen axes.
 - (3) **Concentration of Fire.** The use of preparatory fire and electronic attack, coupled with precision weapons, will reduce a defender's strength. It will also disrupt an attacker, making him vulnerable to countermoves. At all levels, a commander must be allocated sufficient resources necessary for success.
 - (4) **March Separately, Fight Together.** Manoeuvre units will advance rapidly from dispersed locations and converge at the last minute in the chosen sector, choosing to attack from the line of March. The aim is to achieve surprise, focusing on time and not space. The most dramatic method is the use of air mobility.
 - (5) **Dispersal.** Concentration areas are large to minimise the effect of enemy strikes.
- d. **Maintaining a Favourable Correlation of Forces.** To maintain the correct correlation of forces, TRIPLE COMPACT will aim to disrupt and slow down any enemy attempts at regrouping once a break-through has occurred.

8. **Action Throughout the Enemy's Depth.** The need to attack the enemy simultaneously throughout the entire depth of his deployment is an established TRIPLE COMPACT principle. Key to destabilizing the defence are the disruption of enemy C3I and logistic support, the fixing of operational reserves and the early seizure of vital ground in depth. This requires the early use of tactical manoeuvre. Associated with this principle of simultaneity is the identification of the enemy's centre of gravity (COG), which will be the decisive point for the application of force. Both sides' COGs are likely to be focused on groupings of key weapons systems and their associated C3I. Therefore, main and subsidiary axes have largely been replaced by areas for the concentration of effort (main effort), with main forces operating against and within the enemy's depth. Thus, as part of simultaneous action throughout the enemy's depth, CA battalions will often be sent out as raiding or forward detachments (FDs). Even with TRIPLE COMPACT in defence, the attackers plans are vulnerable to strike into his depth, with success being achieved only if the attacker is prevented from mastering the area of long-range combat.

9. **Realism.** TRIPLE COMPACT is acutely aware of the danger of overtasking, while undertasking is considered unacceptable. The successful commander is the one who best balances the risks he faces so that he can achieve his aim whatever countermove the enemy may undertake. Essential to this are effective recce and flexible deployment of forces.

10. **Coordination/Groupings.** All TRIPLE COMPACT commanders are taught to regard themselves as CA commanders, as only this approach brings success. In LEMGO's 1 Corps in particular, where all arms are integrated into the battalion structures, working and training together, commanders can fully understand their strengths and weaknesses and staffs become accustomed to coordinating their actions. In Basic Forces, all arms groupings at battalion level (BGs) are commonly used, but only take place on deployment from peacetime locations.

11. **Preservation of Combat Effectiveness of own Troops.** TRIPLE COMPACT is insistent that victory is only achieved if friendly losses are held to an acceptable level while the enemy's are not. Therefore the mass army concept has been abandoned in favour of a qualitative approach. TRIPLE COMPACT currently sees four solutions to the problem:

- a. **Offensive Action.** A surprise, in-depth offensive pursued at a high tempo will prevent the enemy from organizing his defence and effectively utilizing long-range weapons. Even in defence, offensive action against enemy C4I and deep strike systems will be critical to reduce losses and maintain an effective, balanced posture.
- b. **Protective Measures.** Passive protection measures such as camouflage, concealment, the use of deceptive groupings, dispersion, the use of night and bad weather to cover movement and security (especially electronic) are considered crucial to survival at all levels of war. The enemy's attention must be diverted away from what should be his primary areas of concern, and stereotyping in the planning and execution of missions should be avoided at all costs. Considerable stress is placed on technological counter-measures to attack. Coupled with these defensive measures, active measures to disrupt enemy strike and fire capabilities all help preserve TRIPLE COMPACT's combat effectiveness.
- c. **Restoration of Combat Effectiveness.** After devastating strikes, the restoration of combat effectiveness is achieved by combining relatively unscathed elements with composite detachments, which themselves have been formed by amalgamating badly attrited units.
- d. **Logistic Support.** TRIPLE COMPACT has devised a logistics system that can cope with fast moving operations where boundaries are not clearly defined.

SECTION 3 MANOEUVRE THINKING

12. **General.** TRIPLE COMPACT sees future war as being inevitably one of manoeuvre. This perception has strengthened some of its previous tenets, but it has also led to new thinking. The

fundamentals of manoeuvre warfare as identified by TRIPLE COMPACT are as follows:

- a. **Command and Control.** Senior commanders will closely coordinate the actions of subordinates to exploit the decisive use of concentrated missile, artillery and aviation assets, although a fast moving and changing battlefield will mean that commanders at all levels will have to use their initiative. Tactical, all arms groupings will be created (as they already exist in LEMGO's 1 Corps), to ensure that subordinate commanders can meet any challenges without pausing to wait for reinforcement.
- b. **Designation of a Main Effort.** Commanders will have to indicate clearly the area of main effort.

13. **Focus on Enemy, NOT Terrain Objectives.** The main effort will be directed towards the destruction of the enemy's main grouping (i.e., the cornerstone of his fighting power). At the tactical and operational levels this will almost always be the enemy's means of controlling and waging long-range combat.

14. **Act Faster than the Enemy can React.** TRIPLE COMPACT believes that the winner in the battle for time will be the victor because enemy reactions will become increasingly ineffectual.

15. **Bold, Decisive Action.** Success will only be achieved by taking the battle to the enemy, especially in his depth. TRIPLE COMPACT intends to attack the enemy's COG aggressively, taking appropriate risks to seize the initiative.

16. **Avoid Strength, Attack Weaknesses.** Although the destruction of key enemy groupings is normally the aim at the tactical and operational levels, it is not approached in an attritional manner. By exploiting the enemy's weaknesses his C4I and logistic system can be attacked, splitting his groupings into non-cohesive elements that can be destroyed in detail. This does not conflict with the need to be decisive and concentrate on a main effort as the way to the enemy's main grouping will usually be through weak spots.

17. **Interdependence of Firepower and Manoeuvre.** Concentration of fire makes it possible to generate manoeuvre, while manoeuvre makes it possible to bring fire to bear at critical points.
18. **Use of Reserves to Achieve a Decision.** Reserves, which may be airmobile, can be used to break an enemy that is on the brink. New reserves will always be created.
19. **Command from the Front.** Command should be exercised from the front, with control from rear headquarters, to give the commander a personal feel to make correct decisions in a timely manner.
20. **Avoidance of Stereotype.** Predictable actions will not only fail, but could also result in unjustified and unacceptable losses.
21. **Assessment of TRIPLE COMPACT Alliance Capabilities.** In summary, TRIPLE COMPACT advocates manoeuvrist thinking. LEMGO and to a lesser extent, TARTAN (especially the PGD), possess the combat power to manoeuvre successfully and adopt the current doctrine. STROMIA (1 MD), with groupings of 'three' and T62s/BTR70, is the least capable of implementing such a doctrine and is more likely to adopt set drills and 'norms' when confronted with a difficult tactical problem.

SECTION 4 ORGANIC GROUPINGS

22. **General.** If the Basic Forces are TRIPLE COMPACT's shield, the Mobile Forces form the sword. They are designed to deliver heavy moves in the pursuit of deep operations, though where necessary, elements may be used to stiffen the defence on the main axis of an enemy attack. While their main role is to provide the cutting edge of offensive or counter-offensive action, the Mobile Forces are not structured purely for the offensive. As all battles and operations are seen to comprise a mix of attack and defence and to involve broad manoeuvre with open flanks, dedicated AT elements are included at all levels from battalion upwards; these are now CA groupings, with organic tank, mechanized infantry, artillery and AD assets. Each unit and formation is designed to operate independently where necessary, having all the combat and service support required to ensure sustainability when detached from the parent formation. The

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Basic Forces brigades, although not grouped in peacetime to the same extent as Mobile Forces, can form similar, albeit less effective BGs. TRIPLE COMPACT regards it as axiomatic that any decentralization of decision making, any empowerment of tactical commanders to use their initiative to achieve broad goals must be matched by appropriate organizational structuring. Such commanders must be given the means with which they can fulfil their mission without having to wait on reinforcement from above if their independence is to have substance.

BASIC FORCES

23. **Battalions/Brigades:**

- a. **TARTAN—1 Armoured PGD; LEMGO—2 Corps Armoured Divisions.** All battalions and the armoured brigades in these armoured divisions are identical in structure and operate on the principle of "3, 4, 5", i.e., three platoons in a company, four companies in a battalion, five battalions in a brigade. Whilst the tank battalions have little integral support, the infantry have mortars, recce, AD and AT assets. Battalions are usually grouped in combat with a mix of tank and infantry companies, as BGs, with engineers attached from brigade. They also have the organic ability to undertake airmobile actions with their light infantry battalions. All of these units are starting the process of transition to Mobile Forces. Brigades are commanded by lieutenant colonels, with battalions commanded by majors or senior captains.
- b. **MDs (TARTAN and STROMIA).** In accordance with the principle that Basic Forces will be utilized in less demanding wartime missions, the groupings of both TARTAN and STROMIA MDs are simple and traditional (based on the old Warsaw Pact formations). Battalions and brigades in these formations are identical in structure and operate on the principle of "3, 3, 4", i.e., three platoons in a company, three companies in a battalion, four battalions in a brigade. Whilst the tank

battalions have little integral support, the infantry have mortars, recce, AD and AT assets. It is unusual for these battalions to operate in all arms groupings, although tank battalions can be split up to provide each motorized battalion with a company of tanks. Brigades are commanded by lieutenant colonels, with battalions commanded by majors or senior captains.

MOBILE FORCES

24. **The CA Battalion.** Non-linear combat increases the importance of sustained, independent actions by units and sub-units fighting on separate axes or isolated sectors, and of the flexibility, imagination and initiative of commanders at all levels. In future war, TRIPLE COMPACT has come to believe that overall success will depend on the capabilities and actions of the smallest component of tailored force structuring—the CA battalion. It requires rapid penetration into the depth and wide use of outflanking and envelopment manoeuvres to deliver moves against the enemy's flanks and rear. Basic Forces battalions were not really up to meeting these demands. It had long been the practice to reinforce standard battalions to execute independent missions, but handling such ad hoc groupings often proved to be beyond the knowledge, experience and, indeed, the capacity of their commanders. Recognizing this, TRIPLE COMPACT has made the battalion the basic CA unit in the Mobile Forces. The new tank and mechanized battalions are well-balanced entities that are composed of elements that live and train together in peacetime, instead of being hastily thrown together in battle. They possess considerably more combat power (the equivalent of two Basic Forces battalions), a more flexible structure and greater sustainability than before, enabling them to conduct independent or semi-independent actions over significant periods, on an increasingly lethal battlefield. They are now commanded by experienced, staff-trained lieutenant colonels, selected for qualities of imagination, initiative and flexible minds, instead of the mere captains or junior majors in Basic Forces battalions. They are capable of acting immediately as forward, raiding or outflanking detachments without requiring much or any reinforcement.

25. **The CA Brigade.** Whilst the Basic Forces brigades in MDs have three motorized battalions and one tank battalion, TRIPLE COMPACT came to believe that this structure was relatively inflexible, and dissatisfaction was expressed with the need to weaken a

sub-unit if a CA grouping was to be formed by reinforcement from another. Moreover, the Basic Forces brigades lack enough organic recce, artillery, AD and combat and service support to take on a truly independent role. The new style brigades are a radical departure in force structuring. They are lower formations, not units. They are distinguished from divisions by greater tailoring to achieve superior land mobility, flexibility and sustainability at a lower level than before. They have about the same combat manoeuvre strength as two Basic Forces armoured brigades, but almost the same combat and service support as a Basic Forces division. This reflects the demands of the fragmented, non-linear battlefield. They combine the high firepower of artillery for long-range combat with the shock power of strong tank and mechanized infantry units and the organic ability to undertake airmobile actions (with their light infantry battalions). Greatly strengthened AD and engineer complements will increase survivability and capability for manoeuvre. In this context, the provision of short-range AD within the AD battalion will improve the survivability of artillery, logistics and command elements, which will no longer have to rely totally on the area coverage of medium range systems. Noteworthy innovations are the inclusion of an EW company, a deception/camouflage company, a separate light infantry battalion for use in the airmobile, anti-landing/raiding or CA reserve roles and the formation of a CA AT battalion. In addition, these brigades each have an integral light infantry battalion specifically for air assault and rear area security tasks.

26. **The LEMGO CA Corps.** The new LEMGO 1 CA Corps is a higher (i.e., operational) formation. The Corps comprises four manoeuvre brigades (totalling over 650 tanks, over 1,200 armoured infantry fighting vehicles (AIFVs) and 400 armoured personnel vehicles (APCs) and is roughly equal in manoeuvre strength of four to five Basic Forces MDs (an MD has some 120 tanks and over 450 AIFVs), or two to three armoured divisions (armoured divisions have over 300 tanks, over 450 AIFVs and nearly 200 APCs). It contains significantly more artillery and AD assets than those divisions plus army troops, not to mention the very strong EW and aviation components. These disproportionate increases reflect the growing importance of indirect precision fire (including the delivery of remote mines and jammers), just as the considerable rotary wing aviation element reflects the increasing significance of the third dimension in non-linear, fragmented combat. In pursuance of the deep operations theme, the Corps is supported by Army level airborne forces, including a sizeable Special Purpose Forces (SPF) element. The new

corps is a large, complex formation, but the TRIPLE COMPACT Alliance believes that improvements in C4I will make it sufficiently controllable and flexible to be managed even on tomorrow's battlefield.

SECTION 5 RECONNAISSANCE

27. **General.** TRIPLE COMPACT has always regarded recce as the most important element of combat support. In future war, it will be even more critical than in the past, given the increased range, accuracy and responsiveness of modern weapons systems. As well as growing in importance, recce has changed its relationship with combat systems. In the past, recce collected data, which was then collated, analysed and evaluated to turn it into intelligence. The resulting intelligence was then disseminated upwards, downwards and sideways as appropriate and used in the formation of operational and tactical plans and for targeting purposes. This process often took a long time. Victory in long-range combat depends on a much more intimate link between recce and fire systems than existed in the past. For this reason, recce is becoming intimately linked with fire delivery systems and the old, sequential operation of recce and combat elements is giving way to simultaneity. TRIPLE COMPACT recce is tasked to gather three types of information.

- a. **Enemy Force.** Information on the location, strength, composition, and intentions of the enemy. The focus is on precision guided munitions (PGM), chemical/nuclear delivery means, headquarters communications nodes, sensors, artillery, AD and aviation.
- b. **Topographical.** Information on routes, obstacles, key terrain, etc.
- c. **NBC Contamination.** Identify contaminated areas, the type of contamination and the limits of the area.

28. **Recce Problems.** TRIPLE COMPACT identifies three particular problems facing recce in future war:

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- a. **The Non-linear Battlefield.** Combat will develop very unevenly and spread over wider areas than in the past. Neither units or formations will enjoy secure flanks or rear areas. Friendly and enemy forces will become intermingled and situations will develop and change with great rapidity. Recce must be able to give timely warning to commanders of rapidly developing threats. The intermingling of opposing forces will obviously greatly complicate the problem of targeting, especially for indirect fire systems. Developing an Identification Friend or Foe (IFF) system that will operate reliably without allowing any possibility of the enemy jamming or reproducing it is a major TRIPLE COMPACT research and development task.
- b. **Completeness.** As weapons systems become more and more capable, so the requirement for their accurate location (and thereafter destruction) grows. Today, TRIPLE COMPACT believes that, for an attack to have a good chance of success, it will generally be necessary to pinpoint 70–80 % of possible targets and 90–100 % of the most critical ones.
- c. **Data Processing.** At the same time as the battlefield is becoming more and more complex and the requirement for intelligence greater and greater, the number of sources and agencies at work producing information is growing. An enormous amount of data pours into Command Posts (CP) and this has to be turned into intelligence and targeting data very rapidly indeed. Just as important is the speed of processing, for the side that acts faster will win the crucial battle for time, forced TRIPLE COMPACT into the use of automated and semi-automated systems to preclude time-lags.

29. **Recce Principles.** TRIPLE COMPACT staffs and collectors stress the following principles in intelligence work:

- a. **Purposefulness.** At each level, all recce assets must work within a coordinated recce plan using each to its full potential.
- b. **Continuity.** Recce must be continuous, by day and night and in all weather, and the plan that drives it must be updated as the situation changes.
- c. **Aggressiveness.** Acquiring intelligence will always be a struggle and the recce battle must be waged aggressively, whether in attack or defence.
- d. **Timeliness.** Only intelligence received in good time will enable commanders to adjust their plans to a changing situation and thus retain or seize the initiative.
- e. **Security.** TRIPLE COMPACT is well aware that the scale of its recce effort and the general and specific areas and objectives targeted may enable the enemy to learn a lot about intentions and plans. Every effort is made to conceal the scale, missions and targets of the recce effort.
- f. **Accuracy and Reliability.** TRIPLE COMPACT's own enthusiasm for deception breeds a fear of being deceived. An effort will always be made to confirm the information provided by one source with the findings of another type of collector.
- g. **Integration.** Increasingly, recce assets are required not merely to locate targets but to guide weapons onto them and analyse the impact of their strikes. Moreover, many of these targets will be moving and thus transient targets of opportunity. This requires the vertical integration of some recce systems with strike/fire systems.
- h. **Reserves.** In this, the information age of warfare, commanders are expected to retain a recce reserve, and, when that is expended, to create a new one.

30. **Types of Recce Zones.** Different levels of command are assigned recce and engagement zones as follows:

- a. **Zone of Detailed Recce and Deep Fire Destruction.** The depth of this zone is determined by the effective range over the line of contact of the weapons systems commanded by the headquarters (however, artillery can be deployed forwards in direct support of recce in the counter fire/counter sensor battle). The width of the zone is that of the unit's or formation's boundaries.
- b. **Zone of Immediate Fire Destruction.** This is the zone in which most of the unit/formation's weapons can be brought to bear, where the enemy is generally engaged immediately.
- c. **Zone of General Recce.** Within this zone, the headquarters must be able to monitor enemy activity sufficiently to ensure that its own plans are not disrupted by unexpected enemy moves. For this reason, the zone overlaps boundaries.
- d. **Rear Recce Zone.** Headquarters have to monitor enemy activity in their own rear areas, especially the use of air landing, diversionary or bypassed elements.

31. **Lines of Fire Coordination.** These lines are used to separate the recce and engagement zones at each level. Subordinate headquarters will not engage targets beyond such a line. The superior headquarters may designate targets for its assets within its subordinate's zone of deep fire destruction and will inform the latter accordingly, freeing the lower echelon to concentrate on other targets.

32. **Operational Level Missions.** An operational formation's intelligence priorities may well become missions for collectors in tactical formations operating in the enemy's depth. These are locations and activities of:

- a. Formation headquarters, Recce–Strike Complex (RSC) control centres and communications centres/nodes.
- b. Intelligence gathering and sensor assets.
- c. Nuclear and precision weapons.
- d. EW systems.
- e. AD weapons, radars and control centres.
- f. Airfields and forward operating sites.
- g. Artillery groupings and their C3.
- h. Major enemy groupings.

33. **SPF and Human Intelligence.** All TRIPLE COMPACT Alliance members use strategic human intelligence (HUMINT) assets based in VENTORA and are from that ethnic background. Many of them are integrated with Vento Freedom Fighters Army (VFFA). LEMGO and STROMIA SPF units conduct deep recce at the strategic level.

34. **Tactical Level Missions.** In addition to meeting army/corps requirements, divisional and brigade recce will be concerned with more local threats, targets and opportunities. Priorities will be:

- a. Enemy brigade, battalion and RSC CPs and communications.
- b. Precision weapons, helicopter Forward Operating Bases (FOBs), Multi–Barrelled Rocket Launchers (MBRLs).
- c. ADs.
- d. Other artillery and mortars and their fire plans.

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- e. The strength and dispositions of enemy defences, the location and composition of attack groupings and reserves and their routes and waiting areas.
- f. The positions and nature of field defences.
- g. The extent and effectiveness of obstacles, both natural and emplaced, and possible crossing points.
- h. The identification of usable routes for manoeuvre units.

35. **Recce Brigade (LEMGO Mobile Forces 1 Corps).** The brigade has four battalions, two of which are motorized with a mixture of BMP3K and BMP2, and two light motorized with BMP3 and BTR90. At Corps level these battalions are generally used as Recce Groups (RGs) and Deep Recce Patrols (DRPs) on operational level missions.

36. **Recce Battalions (Basic Force Divisions and Mobile Force CA Brigades).** The recce battalions of all the Basic Force divisions and the Mobile Force CA brigades are almost the same in size and structure (two motorized companies, a long range recce company and a signals intelligence (SIGINT) company). In addition, the armoured divisions (TARTAN and LEMGO) and the Mobile Force CA brigades have a remotely piloted vehicle (RPV) company and an aviation recce flight:

- a. **Motorized Companies.** The two motorized companies of the recce battalion may either operate as company-sized RGs or be broken down into platoon-sized recce patrols (RPs). motorized recce will operate right across the formation front up to a depth of 50 km and to the flanks as well, in fluid situations where flanks are open.
- b. **Long-range Recce Company.** RPs from this company operate in greater depth than the motorized companies—up to 100 km on occasion. Patrols either infiltrate in their BMPs, BTRs and BRDMs or are inserted by helicopter or even parachute.

- c. **The Radio and Radar Direction–Finding and Intercept Company.** The SIGINT company can intercept and direction–find (DF) high frequency (HF) ground wave stations out to about 80 km, and very high frequency (VHF) to 30–80 km (using TARAN T1 and T2). VHF DF may sometimes be good enough to target MBRLs. Radar DF (TWIN BOX and POLE DISH) can be effective from 25 km out to 50 km, depending on terrain screening, and location will often be accurate enough to target a MBRL strike.
- d. **RPV Companies.** These companies have six RPVs—see equipment at Part 3.
- e. **Aviation Recce Flight.** The flights have six light recce helicopters (GAZELLE or Mi34). Helicopters are frequently used by engineer and chemical troops to assess routes and obstacles and areas of contamination behind the forward line of own troops (FLOT).

37. **Recce Companies (Mobile Force CA Battalions, Basic Force Brigades).** Mobile Force CA battalions and Basic Force brigades have an organic recce company of two platoons with 8-13 vehicles. They can operate as RPs, Separate Recce Patrols (SRPs) or Forward Patrols (FPs) out to 25 km.

38. **Recce Platoons (Motorized Brigades and Light Infantry Battalions).** These consist of 6–8 vehicles. In addition, ordinary motorized platoons may be used as RPs or Combat Recce Patrols (CRPs). Battalions may deploy a variety of RGs. A scout vehicle on the axis of advance is the absolute minimum, and as the battalion approaches the enemy a FP will usually form part of the march security grouping.

39. **Types of RGs.** A grasp of the terminology used to describe TRIPLE COMPACT ground RGs is vital to an understanding of their tactics. The following terms are used:

- a. **RG or Recce Detachment (RD).** An RG may be formed from units of the recce brigade or battalion.

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It is used during mobile phases of operations on the main axis, or to recce key objectives in depth. Company-sized RGs are most common. Battalion-sized RDs are used to recce objectives which it may be advantageous to seize and hold for some time, e.g., a river crossing. RGs and RDs send out their own RPs and thus enable these platoon-sized elements to operate more independently of the main force and for longer periods. RGs and RDs are often grouped with engineer and chemical recce sections.

- b. **RP.** A platoon-sized element which may be reinforced by engineer and NBC recce teams. RPs are sent out by recce battalions and companies and by RGs and RDs.
- c. **SRP.** A platoon-sized element sent out by and reporting directly to the lower formation or unit chief of recce. It may be reinforced by engineer or chemical recce. SRPs may operate 10–25 km ahead of march security elements. They will be deployed on open flanks.
- d. **CRP.** A platoon-sized element deployed from and reporting to a battalion headquarters, which is acting as the Advance Guard of a brigade advance. Again, it may include engineer or NBC recce troops. CRPs used in close contact with the enemy normally operate no deeper than their parent battalion can support them by fire.
- e. **FP.** A platoon-sized patrol sent out by a vanguard as a march security element. It is not primarily a recce element, but while carrying out its primary mission will also be able to provide intelligence on the enemy for the headquarters which deployed it. As it is a security element, it usually moves on the road being used by the main body.
- f. **Patrol Section (PS).** A vehicle with a recce mission. PSs may be the only recce 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 PS to the limit of visibility ahead of them (400–1,200 ms).

- g. **DRP.** A DRP operates independently in the enemy’s rear area. It is almost certain to come from the CA Corps recce brigade or division/brigade, long-range recce companies. DRPs are usually section strength and are particularly targeted on PGMs, headquarters and reserves.

40. **Engineer.** It is common practice to reinforce RPs with an engineer element. 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.

41. **NBC.** All sub-units are responsible for continuous monitoring of their own NBC state. In addition, chemical defence sub-units can provide specialist recce teams. They may operate from their own vehicles (BRDM–RKh or RKhM) or travel in a patrol’s vehicles.

42. **Artillery.** Most artillery battalions have some form of battlefield surveillance radar; some with a range of 25–30 km. The most important target acquisition means are, however, found in the Mobile Forces CA brigade, artillery recce battalion. This has a radar battery equipped with battlefield surveillance radars and, more significantly the ZOO PARK system, which can locate artillery and mortars accurately enough for counterbattery purposes. The POLE DISH radar DF equipment can be used to target enemy radars (especially AD radars).

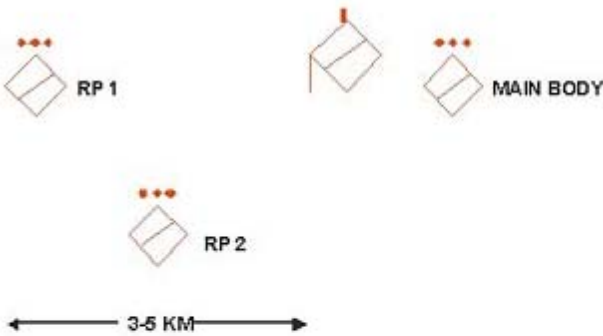


NOTES:

- a. This is the standard formation for any patrol, whether RP, SRP, CRP or FP.
- b. Engineer and NBC recce is not found in all patrols. Alternatively, the former may take the form of a couple of sappers in a patrol vehicle.
- c. The separation of the scout vehicle from the commander’s will be determined by the visibility at the time.

Figure 2-4-2a: March Formation of a Reconnaissance Group

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NOTES:

- a. The RG is formed from a recce coy, reinforced by a sapper sect and a chemical recce sect.
- b. Two RPs have been deployed to cover a frontage of 6 km or more. The third recce platoon provides a reserve.
- c. Each RP and the main body will deploy a scout vehicle in front. The sapper will move with RP 1 on the main axis, but 2 sappers will be in one of RP 2's vehicles.
- d. The chemical recce will be in the main body.
- e. RDs can be battalion size.

Figure 2-4-2b: March Formation of a Patrol

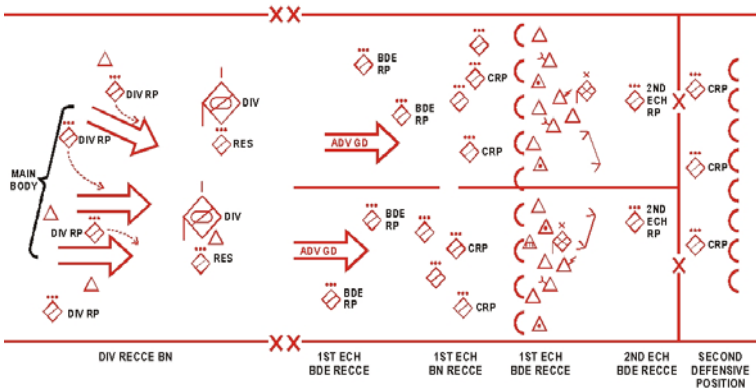


Figure 2-4-3: Reconnaissance of a Division Establishing a Defence

43. **Circumstances for Recce.** The combination of RGs and techniques used within a division/brigade area will vary with circumstances. The following paragraphs outline the organization of recce during different phases of battle.

- a. **Recce in the Advance.** When advancing to contact and penetrating an enemy covering force a TRIPLE COMPACT division/brigade will cover its front with PSs, each with a 2–3 km sector. An RG will probably advance on the main axis; the remainder of the front will be covered by RPs.
 - b. **Recce During the Battle in the Enemy’s Depth.** As a major attack is launched on the enemy’s main defences, recce elements will stand ready, immediately behind the assaulting troops. When exploiting a breakthrough, units and sub–units will operate with open flanks and additional CRPs, FPs and RPs will be generated to cover them.
 - c. **Recce in the Defence.** In the defence, there is considerable emphasis on the use of static OPs. If defending out of contact with the enemy, a CRP and/or FP may be pushed forward. Depth battalions may also deploy assets into the intervals between defence lines.
44. **Recce Tactics.** The most common methods of conducting recce include observation, raids, ambushes and patrols.
- a. **Observation.** Observation is, of course, the most common recce technique in all forms of battle. Observation posts (OPs) are most commonly deployed in more static phases of the battle. They may be reinforced with engineer and chemical recce troops and, at night or in bad weather, are often supplemented by listening posts.
 - b. **Battlefield Surveillance Radars and EW.** Within Mobile Forces and the armoured divisions of the Basic Forces, each motorized recce platoon is equipped with a radar. Many of their artillery battalions also have radar, with the result that there is a plethora of such battlefield surveillance means. Being mounted in armoured vehicles, these are usually pushed well forward. Those DF and intercept systems that are mounted in MTLBu

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(TARAN series) will also deploy close to the line of contact.

- c. **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 infantry troops. Specialist RGs may also be tasked with raids deeper into the enemy rear, against CPs or high priority targets (HPTs).
- d. **Ambushes.** The value of recce ambushes is increasingly stressed. Sub-units may be specifically tasked to lay an ambush to capture prisoners, documents, etc.
- e. **Patrols.** In open, mobile forms of warfare which TRIPLE COMPACT expects to dominate the future battlefield, OPs, and perhaps raids and ambushes may be less significant sources of intelligence than patrols sent out by marching units.
- f. **Irregular Forces/HUMINT.** Irregular forces (VFFA) and HUMINT can be tasked to conduct raids, ambushes, sniping attacks and a plethora of other operations in support of TRIPLE COMPACT ground forces (also see Chapter 6).

Recce Units	Range of Operation		
CA Corps Recce Bde	RDs, RGs, DRPs		>200 kilometres
RPVs	STERKh	60 kilometres	KOLIBRI 180 kilometres
DF	TARAN T1/T2		80 kilometres
Radar	TWIN BOX/POLE DISH		25-50 kilometres
Div/CA Bde Recce Bns	MRC RGs/RPs	50 kilometres	LRRC RPs 100 kilometres
Bde/CA Bn Recce Coys	RPs/FPs/SRPs 25 kilometres		
Bn Recce Pls	RPs/CRPs/FPs 10-15 kilometres		
Ptl Sects	1,200 metres		
DRP	Deep Recce Patrol	FP	Forward Patrol
RD	Recce Detachment	SRP	Special Recce Patrol
RG	Recce Group	CRP	Combat Recce Patrol
RP	Recce Patrol	PS	Patrol Section

Figure 2-4-4: Recce Ranges and Groupings

SECTION 6 ENGINEERS

45. **General.** The role of the engineer troops is to enhance the survivability and mobility of their own forces, whilst degrading that of the enemy. Speed and mobility are considered key factors influencing victory on the modern battlefield at both the tactical and operational level.

46. **Organization for Combat.** Even more than is the case with artillery, combat engineer units do not always deploy as complete entities. The Chief of Engineers at each level will use his resources to form task-orientated groupings in accordance with the CA commander’s concept for battle and his instructions on engineer support. These groupings will often include reinforcement from the senior commander (especially on the main axis) as well as organic assets. They will not be permanent but will be reformed and resubordinated as the operational and tactical situations change.

47. **Movement Support Detachment.** Crucial to the maintenance of momentum is the work of the Movement Support Detachment (MSD).

- a. **Role.** The MSD moves either before or after the vanguard, about two hr ahead of the main body, and improves the axis of advance. It fills in craters or constructs bypasses; constructs bridges over minor gaps and improves the approaches and exits from them; clears and marks lanes through minefields. The task of the MSD is seen as vital to both a rapid advance and to security: if its work is not completed in time, the main body will be forced to halt, bunch onto the obstacle and create a target for precision, artillery or air attack. Once the lead battalion(s) is/are committed to battle, the MSD moves behind or prepares a route for the committal of reserves or echeloning battalions.
- b. **Composition.** An MSD may have motorized and tank troops and AD for protection (the former also providing unskilled labour), tracked diggers, dozers with cranes, dump trucks, tank and truck launched bridges, mine detectors and clearers, trucks with explosives and possible metal trackway and NBC recce.
- c. **Grouping.** An MSD will be organized into two or three sub-groups. They are the recce and clearance group (or an RG and a clearance group) and the road-bridge group. Grouping depends on terrain and the tactical situation. It may be varied during the course of operations.

48. **Mobile Obstacle Detachment.** Motorized sub-units carry mines to create local protective minefields. The Mobile Obstacle Detachment (MOD) is, however, the basic building block of TRIPLE COMPACT's counter-mobility effort. They are formed at every level from unit to operational level grouping and are a standard feature of tactical and operational formation.

- a. **Tasks.** MODs lay minefields, dig AT ditches, carry out demolitions and create other obstacles such as abatis. In defence, they help to prepare the obstacle system and, once the attack commences, they wait concealed to create fresh obstacles on the most threatened directions. Whether on the attack or in defence, they are used to: protect the deployment lines of attacking/counter-attacking forces; cover the flanks of formations/units; fill in gaps which exist or develop within operational or tactical formation; gain time for the mounting of countermoves; help to seal in encircled forces and create deceptive obstacles as part of the overall deception plan. MODs normally work in close conjunction with the ATRs during the course of an operation or battle, their work materially contributing to their survivability and to the stability of defence.

- b. **Composition.** MODs are built around minelayers. Higher formation minelayers can be used to reinforce the MODs of subordinate formations or units as well as to form up to two to three MODs of their own. In addition to minelayers, MODs will have trucks with extra mines, explosives for demolition and the creation of obstacles, and they will often have dozers, road plows and mechanical ditchers for obstacle creation and digging in elements of the ATR.

- c. **Tactics—CA Formations/Units.** In the offensive, the MOD will usually move forward with an ATR, either on an open flank or in a central position ready to deploy to any threatened direction: in the latter case, they usually advance behind the lead battalions to ensure a prompt response to any threat. In defence, they lurk concealed in hides on a threatened axis or flank, or in a central position, often behind the forward battalions. TRIPLE COMPACT considers that the element of surprise is very important in mine warfare. Minefields laid in advance can be discovered by enemy recce and timely measures can be undertaken to overcome

them. It is therefore often more efficient to lay a minefield during the course of a battle, preferably at the last minute, directly in the path of a developing threat. Such use of mines is not only tactically advantageous, but economical in resources: this may be an important consideration when supplies are limited, e.g., when a hasty defence is adopted during operations in the enemy's depth.

- d. **Tactics— Armoured Divisions/MDs.** During a deliberate defence the divisional engineers will initially construct revetments for the tanks and then work on constructing berms and tank ditches forward in the complex obstacle net. The initial time estimate for establishing a deliberate defence is 48 hr. Should engineers have more time, they will also construct dummy positions once the obstacle network and revetments are completed. Dummy positions may be for tanks, AD artillery and C2 elements. The divisional engineers also construct revetments for artillery. The priority of work during a hasty defence is for protective obstacles. If more time is available, they will improve existing obstacles and begin to dig revetments for vehicles. The defence will be supported by tactical and protective obstacles.

- (1) **Tactical Obstacles.** Tactical obstacles are designed to slow, disorganize and canalize the enemy forces. The minefields are intended to break up the enemy's assault and strip away the infantry's supporting armour. These will be complex and consist of berms, tank ditches, and predominantly AT minefields. Up to 50 % of the mines may be buried. The tactical obstacles will be 4–500 m forward of the defence and be up to 300 m deep. These obstacles normally run parallel to the defence and will be laid by divisional engineers. Tank ditches are 2–3 m deep and 2–3 m wide. There will also be 200 m breaks in the belt that will canalize enemy forces. If the

divisional engineers have time they will put another minefield 1,500–2,000 ms in front of the defence. This minefield will be 100-150 ms deep and consist of only AT mines and one or more rows may be buried. Mines will be emplaced in rows with 5-6 ms between mines and 15–20 ms between rows. Minefields or obstacles will not be emplaced within the defence. All obstacles and mine fields will be forward of the defending unit. Turning obstacles are not constructed.

- (2) **Protective Obstacles.** Protective obstacles consist of concertina and mines. The protective minefields are normally up to 200 ms in front of the defending units and 75 ms deep. Infantry companies are responsible for establishing these protective obstacles.
- (3) **Fortifications.** Engineers will construct revetments behind the defending platoons for tanks and AT systems. Tanks and AT systems may occupy these revetments once the main effort has been identified. The revetments will allow the tanks to fight from hull defilade. If time permits, engineers will assist in the construction of the trench lines.

SECTION 7 AT FORCES

49. **General.** While TRIPLE COMPACT has always stressed the importance of anti-tank reserves (ATR), their significance has grown in recent decades; defence must first and foremost be AT in nature. Units and formations will now routinely find themselves with no secure flanks or rear areas, for combat will develop in an uneven, non-linear fashion. Armoured threats and counter threats will often develop suddenly and unexpectedly and therefore, it is important for the CA commander to have in hand assets with which he can execute

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countermoves, without weakening his main grouping. CA Corps and division level AT battalions, along with brigade AT units (with an MOD) provide the economy of force grouping, which is dedicated to meeting armoured thrusts and counter thrusts.

50. **Missions.** The AT units and MOD work together as a team, with the latter under the command of the former. The MOD may, however, be temporarily detached when the level of threat is low, to carry out obstacle creation in support of defending forces, before reverting to its main role.

a. **On the Defensive.** Missions include:

- (1) reinforcing the AT defence of the first echelon on important axes;
- (2) carrying out counter-penetration against armoured groupings that have wedged into the defence, or are penetrating into the depth;
- (3) covering gaps in defensive formation, or boundaries or flanks;
- (4) protecting the deployment lines of counter-attack groupings or raiding detachments/groups;
- (5) gaining time for the mounting of a counter-attack;
- (6) countering air landings; and
- (7) counter-recce.

b. **In the Offensive.** Missions include:

- (1) covering the flanks of attacking groupings;
- (2) repulsing counter-attacks;

- (3) covering the committal of second echelons, or raiding or FDs/groups;
- (4) sealing lines of retreat for encircled forces;
- (5) consolidating captured lines or areas; and
- (6) countering air landings.

51. **Composition.** The importance of AT units and MOD, and the requirement for them to act autonomously, have led commanders to group them with greater mobility and survivability than before. For example, in the CA Corps, the two AT battalions (which may be deployed as a complete formation or deployed as two to four separate groupings) have permanent, integral artillery and AD (2S19 and 2S6). In the CA brigades, the AT battalion has its own artillery (2S19). In the divisional formations, AT units have to have these assets grouped on deployment. However, the composition of AT units and MOD will always be tailored to the mission assigned to the parent unit or formation, the likely strength of the enemy and the terrain.

52. **Helicopters.** TRIPLE COMPACT commonly uses helicopters with AT units at CA Corps and divisional levels. Transport helicopters can rapidly surface-lay a minefield and land infantry strong in manpack AT weapons. Attack helicopters can engage static armour, or execute ambushes against columns. The mobility, regardless of terrain limitations, speed and range of action of these assets fit them well for the task of imposing casualties and a check on the enemy's advance. They are vital in this role in manoeuvre defence, when combating enemy forces in the friendly depth and in fast developing offensive or defensive actions. They are not, however, considered a substitute for ground troops in all circumstances, as they cannot hold ground.

SECTION 8 INTEGRATED FIRE SUPPORT

53. **The Place of Artillery in TRIPLE COMPACT Thinking.** TRIPLE COMPACT has always put the greatest possible stress on the role of artillery in combat. Foreign observers have often been mesmerized by TRIPLE COMPACT's tank and infantry strength, in

particular LEMGO's, but TRIPLE COMPACT has traditionally regarded artillery as the main battle-winner.

- a. **In the Offensive.** In the offensive, artillery was the principal means by which an advantageous force ratio was achieved on chosen sectors, gaps were blasted through the defence, the enemy's tactical reserves were destroyed or disrupted and counter-attacks were repulsed. It was the effective action of artillery that was primarily responsible for creating conditions in which tactical and subsequently operational manoeuvre, could be generated.
- b. **In Defence.** In defence, artillery was the principal means by which the attacker's preparations were disrupted and any force that reached or penetrated the forward edge was repulsed and counter-attacks executed successfully.

54. **Growing Importance.** If anything, the role of artillery has grown in significance as far as TRIPLE COMPACT is concerned. Fire superiority was always regarded as the pre-condition for success in the attack—i.e., the attacker had to be able to execute his fire missions while reliably suppressing counter-fire. It was also the cornerstone of defence, even if it could only be achieved for a limited time at the crucial point in battle. In future war, artillery will be restored to the sort of dominance it enjoyed before the large scale mechanization of armies, thanks to its ability to locate and immediately destroy even individual, moving armoured targets or sensors to depths of 70 km and more (with MBRLs), or even hundreds of km (with Surface to Surface Missiles (SSMs)).

55. **The Basic Principles.** The basic principles in allocating missions and organizing subordination of missile and artillery units are fourfold:

- a. **Centralized Control.** TRIPLE COMPACT believes in exercising control at the highest possible level to ensure maximum flexibility, maximum effort at the decisive point and logistic economy. The ability to manoeuvre massed fires laterally and in depth, made possible by the contemporary

improvements in recce, target acquisition, communications, automated assistance to decision making, weapons' range and lethality, can only be fully exploited with centralized direction. Centralized control does not, however, extend to the details of fire planning in most instances. The senior commander will establish the area for the concentration of effort and the scale of that effort, timings and the target priorities. Lower echelons choose the method and form of inflicting fire damage.

- b. **The Struggle for Fire Superiority.** The Struggle for Fire Superiority is always the first priority task for the missile and artillery troops (in close cooperation with EW and aviation).
- c. **Priority for Support.** TRIPLE COMPACT continually stresses the importance of concentration of effort and the reinforcement of success. Thus, in allocating artillery to subordinate formations and units, an even distribution is reflected in favour of massing support on the main axis. In the attack, resources will be switched from the support of less successful elements, to aiding those making the best progress. In defence, they will bolster the position of those forces in greatest need.
- d. **The Basic Fire Unit.** When employing non-precision ammunition, fired by gun artillery, TRIPLE COMPACT will engage small targets with a single battery. A raiding or outflanking group, or a vanguard or flank guard based on a motorized or tank company, may be reinforced by a battery. Normally, however, the basic fire unit is the battalion, although in MBRL and SSM units, single launchers can be employed to strike point targets with precision or non-precision munitions.

56. **Groupings.** TRIPLE COMPACT artillery is formed into task oriented groupings. The size, composition and level of control of these groupings depend on the strength of the enemy, the mission of the supported unit and whether that unit is on a main or supporting

axis. The aim is to achieve the maximum concentration of fire support at the decisive point on the battlefield.

- a. **Battalion Artillery Group.** The Battalion Artillery Group (BnAG) is only found in the CA battalions of CA brigades; all other Motorized Battalions have mortar batteries. The BnAG consists of the Battalion Artillery Battalion (2S31) and if grouped, assets from the Brigade Artillery Regiment (2S19). It is usually deployed 1–4 km from the FLOT.
- b. **Brigade Artillery Group.** The Brigade Artillery Group (BAG) consists of:
 - (1) **CA Brigade.** Elements of the Brigade Artillery Regiment (2S19 and 9P140) plus assets from the Corps Artillery Brigade and Corps MBRL Brigade, if grouped.
 - (2) **Armoured Brigade.** Elements of the Brigade Artillery Battalion (AS90) plus assets from the Division Artillery Brigade, if grouped.
 - (3) **Motorized Brigade.** Elements of the Brigade Artillery Battalion (2S1) plus assets from the Division Artillery Brigade, if grouped.

57. These groups are used as directed from above, to contribute to the long-range battle (e.g., by suppressing ADs in support of friendly air penetrations, the insertion of airmobile or ground raiding forces or operating forward in support of corps or divisional recon forces in the counter-fire or counter-recon role). Their main role, however, is the fire support of the manoeuvre elements of their formation.

- a. **Division Artillery Group.** The Division Artillery Group (DAG) consists of:
 - (1) **Armoured Divisions.** Two battalions of AS90 and a battalion of MBRL (9P140),

plus assets from the Corps Artillery Group (CAG) if grouped.

- (2) **MDs.** Two gun battalions (2S3 and D30) and a battalion of MBRL (BM21), plus assets from the CAG if grouped.

58. These groups are used as directed from above to contribute to the long-range battle (e.g., by suppressing ADs in support of friendly air penetrations or the insertion of airmobile or ground raiding forces). Their main role, however, is the fire support of the manoeuvre elements of their formation.

- a. **CAG.** A CAG is formed by combining all corps assets, which are:

- (1) **CA Corps.** The LEMGO 1 CA Corps has eight battalions of 9P140 (18 x 9P140 per battalion) and three battalions of SS21.
- (2) **Other Corps.** The TARTAN Corps and LEMGO 2 Corps both have six battalions of 9P140 (18 x 9P140 per battalion).

59. These are used first and foremost, for deep fire missions, to carry on the struggle for electronic fire superiority. Their primary targets will be enemy sensors, artillery, command and control (C2) entities, helicopter forward operating sites, EW facilities and AD systems. They will also manoeuvre massed fires in support of manoeuvre elements, to suppress strong resistance, damage and disrupt reserves and break-up counter-attacks.

60. **Deployment.** TRIPLE COMPACT tends to deploy artillery well forward, especially in the offensive. There are three reasons for this:

- a. The need to reach as deep as possible.
- b. The increase in expenditure norms as range lengthens.

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- c. The time required to relocate artillery (by deploying forward, it can ensure continuity of fire support for attacking units for longer before having to displace).

61. Artillery moves according to the "RULE OF THIRDS". When 1/3 of the artillery's range remains in front of the manoeuvre units, the artillery will move 1/3 of its force forward. Only 1/3 of an artillery unit's assets will be moving at any one time. A bound may be as long as 10 km.

62. **Conduct of Fire.** TRIPLE COMPACT moves artillery batteries, platoons and individual guns within an assigned firing *manoeuvre area* to escape enemy counterbattery fire. As such, the groupings are merely that and one should not expect to see large concentrations of artillery on 'gun lines', unless they are the older towed guns such as D20 or D30; rather, howitzers and MBRLs will be deployed in manoeuvre areas. Within this area, the battery commander selects a primary position and one or more temporary firing positions 300–400 m, or even further away from the previous. Each howitzer fires for three to four min then moves to an alternate position. Each MBRL fires a salvo and then immediately moves to another position, reloading en route. Average reaction times from receipt of fire orders to first round on the ground are as follows:

- a. Mortar battery—1–1.5 min.
- b. Artillery battalion—2–3 min.
- c. MBRL battery—4 min.
- d. BnAG—4 min.
- e. BAG—5 min.
- f. DAG—5 min.

63. **Fire Planning.** Artillery fire is usually the basic means by which a favourable correlation of forces is achieved for the attack. TRIPLE COMPACT calculates scientifically its artillery requirements, in terms of the number of weapons and rounds needed to produce a given effect on enemy targets. TRIPLE COMPACT defines various levels of effect that may be sought by bombardment. The CA

commander specifies the effect required and, on that basis, the artillery commander calculates how many rounds have to be fired to achieve it.

- a. **Harassing Fire.** This is used to inhibit manoeuvre or force the enemy to move and thus provide targets for air attack and to damage enemy morale.
- b. **Neutralization.** Artillery fire at this level inflicts minimal damage, but paralyses the defence during, and for a very short period of time after, the bombardment. This is the minimum acceptable effect if an attack is to succeed and fire has to be timed precisely, to see the attacking troops onto the defended position. Neutralizing fire is usually employed only against an enemy assessed to be weak and when insufficient time is available to artillery recon to establish precisely the enemy's positions.
- c. **Suppression.** Suppression is the effect achieved on a sub-unit by the infliction of about 30 % casualties to men and equipment. It will render the target grouping combat-ineffective for a period of min to hr, as the morale effect of the bombardment will render even the uninjured troops incapable of offering organized resistance, and C2 will be disrupted. TRIPLE COMPACT commanders will normally aim to achieve at least suppression, before subjecting even a hastily defended position to attack by tank and motorized troops.
- d. **Disruption.** By inflicting 25–30 % casualties on an attacking force, TRIPLE COMPACT believes that it will effectively break up an enemy attack.
- e. **Destruction.** Destruction is to all intents and purposes achieved if 50–60 % losses are suffered by an enemy grouping, or 70–90 % of an individual target. The target grouping will cease to exist as a fighting force for up to 24 hr (depending on its morale state, availability of replacements, C2 restoration, etc.). Destruction is seen as the only

worthwhile objective when engaging missile or MBRL units or, increasingly, artillery.

64. **C2.** Artillery commanders will try to collocate with the manoeuvre commanders they are supporting. Artillery Command and Observation Posts (COPs) will be formed at battery and battalion levels using specialized armoured vehicles. Requests for artillery support during a battle are passed over the command net and not the artillery net. Artillery groups will fire only with the manoeuvre commander's approval.

SECTION 9 AIR DEFENCE

65. **Mission.** The air defender's mission is to prevent enemy air action from interfering with the actions of manoeuvre forces (AD requirements are based on the inevitable air superiority of potential United States of America (USA) led coalition forces, and are therefore numerous). Ideally, this is accomplished by destroying enemy air before it can perform its reconnaissance or target acquisition, or deliver its ordnance.

66. **Phases of AD.** AD incorporates three related efforts, involving all services and branches of the armed forces.

- a. **Destruction of Enemy Air on the Ground.** Whenever possible, the fight is taken to the enemy as part of the struggle for electronic–fire superiority. Enemy aircraft are attacked on the ground, air bases are closed, C3I systems and logistic support facilities are destroyed or suppressed. These missions are accomplished against fixed wing aviation by missile troops, the Air Force, EW units and raiding and SPF detachments, groups and patrols.
- b. **Destruction of Aircraft on Distant Approaches.** Aircraft are destroyed before they penetrate friendly airspace; this is the task of longer range surface–to–air missiles (SAMs), EW units and fighter aviation.
- c. **Destruction of Aircraft Penetrating Over Manoeuvre Forces.** This is the joint responsibility

of fighter aviation, EW and the AD of the ground forces.

67. **Resources.** TRIPLE COMPACT has fielded a variety of early warning radars with different but overlapping frequencies for target tracking and missile guidance. As well as weapons of physical destruction, numerous electronic countermeasures (ECM) equipments are also deployed.
68. **Types of AD Organization.** TRIPLE COMPACT recognizes three different methods of organizing AD, in practice using a mix of all of them.
- a. **Point Defence.** Point defence is established on the perimeter of an important target to destroy aircraft on their approach to their mission execution line. Such defence can also be used on likely avenues of approach, to surprise the enemy before he reaches the target. The advantage of this form of defence is that it allows concentration on likely approaches and targets. However, it is only useful against low and very low level attack, as it cannot have an envelope sufficiently large to preclude the launching of stand-off weapons.
 - b. **Linear Defence.** Linear defence is designed to create a continuous barrier to attack well in front of the enemy's main targets. This enables the engagement of attackers on the distant approaches, but it possesses low stability as the enemy can drive a corridor through the line on a narrow axis.
 - c. **Area Defence.** Area defence creates a perimeter round an area, which contains several important targets. Such a defence can be stable and effective, but may not be able to cope with low or very low penetrators making good use of terrain.
 - d. **Point-area or Point-area-line Defence.** This form of defence is generally adopted by TRIPLE COMPACT. This combines the immediate defence of key targets and axes with the creation of a general

umbrella coverage. It forces the air enemy to concentrate and/or to attack at altitudes, where accuracy of weapons delivery becomes problematical.

69. **Air Surveillance.** TRIPLE COMPACT AD radars at all levels are integrated into an overall system, covering all the defended airspace. Most early warning radars are held in SAM units at corps level, allowing higher formation AD commanders to make a rapid and informed assessment of the threat and pass both information and fire missions down to the appropriate fire units.

70. **Tactical AD.** Defence against low to medium level threats is exclusively the province of the ground forces' AD and of attack helicopters in the anti-helicopter role. Deployments will change with the tactical situation and the deployment of supported formations and units.

- a. **On the March.** On the March, air defenders are distributed throughout the March columns. Up to 30 % of weapons conduct air surveillance on the move and all are ready to open fire immediately. Elements may deploy ahead to cover choke points such as defiles or bridges.
- b. **Attack and Defence.** An area point system is created. Special attention is paid to any open flank.
 - (1) **CA Corps.** 2 x SA17 battalions (48 x SA17) and 2 x SA15 battalions (32 x SA15).
 - (2) **Other Corps.** 6 x SA11 battalions (72 x SA11).
 - (3) **Armoured Divisions.** 2 x SA11 battalions (24 x SA11).
 - (4) **MDs.** SA11 battalion (12 x SA11).
 - (5) **Brigades.** CA brigades have a battalion with SA13/SA15, while armoured and

motorized brigades have a SA13/ZSU23-4 battery. Where elements of higher formation AD are deployed within the lower formation's area, their coverage and capabilities are taken into account in deploying organic resources. The SA15s within a CA brigade will cover the entire formation area, but give priority to the defence of the first echelon, the main CP and artillery. Deploying as close as 5 km from the line of contact, the forward batteries will reach up to 7 km over it. Armoured and motorized brigades need divisional or even corps AD (SA11) to give them this sort of cover. Formation level SA13s/ZSU23-4s are used to give point defence for important targets in depth.

- (6) **Battalions.** CA battalions have a battery of 2S6/SA16, while motorized battalions have SA16 platoons. To ensure efficient C2, this is generally the lowest level at which AD is deployed, though detached sub-units (forward or raiding detachments) are often reinforced with some air defenders from either unit or formation. The disposition of unit assets will take into account the coverage and capabilities of any SA11/15 battery, which is in the unit's sector. 2S6s, SA13 and SA16 give point defence, priority going to manoeuvre elements, CPs and artillery. In CA battalions, the 2S6 usually cover the troops on the main axis, as the 2S6 is the most capable system. Some 2S6s may deploy about 1,000–1,500 ms from the line of contact, sometimes even nearer, to be able to hit targets 7 km beyond it.

- c. **Increasing Survivability.** To increase the survivability of AD weapons, they avoid stereotype in their deployment. Weapons are supposed to relocate to an alternative fire position one km distant

after enemy recon aircraft or RPVs have passed nearby and after any engagement, or routinely after 4–6 hr at unit level and after 8–12 hr for formation SAMs. Whenever possible, especially in defence, dummy SAMs are deployed to reduce casualties from AD suppression. Other deception measures include changing emitter characteristics, regulating operating times for radars and controlling their use, camouflage and jamming and the use of smoke.

- d. **Readiness Status.** A constant, high level of readiness to repulse air attacks will wear out crews and equipment. TRIPLE COMPACT has a system of alert states that are proportionate to the threat.
- (1) **Alert State 3.** This is the lowest. Weapons are serviced and checked, but remain switched off and crews are stood down. It requires 30 min to be ready to fire. Most weapons are held at this state in waiting areas or when conducting marches in depth.
 - (2) **Alert State 2.** This means that weapons are ready for action after a short period of preparation and crews are on reduced manning. The time into action is 10-15 min. On the march, most weapons are in State 2, with about 50 % going up to State 1 as the line of contact is approached.
 - (3) **Alert State 1.** Weapons are fully manned and ready for immediate engagement with support systems warmed up and ready to control fire. All air defenders are at this state when units are in pre-battle or battle formation, or when negotiating water obstacles or defiles, or in complicated situations.
- e. **Effectiveness of Tactical AD.** TRIPLE COMPACT believes that the effectiveness of its weapons, expressed

as the probability of a hit with a single missile launch or gun engagement, is as follows:

- (1) SA15—90 %.
 - (2) SA13 and SA16—50 %.
 - (3) 2S6—85 % (missile) 60 % (guns).
 - (4) SA11—75 %.
 - (5) SA17—80 %.
- f. **All Arms AD.** TRIPLE COMPACT does not leave AD entirely to the specialists. All personnel are instructed in aircraft recognition and all sub-units are exercised in firing against low or very-low flying aircraft. Tank and other vehicle mounted heavy machine guns and BMP/Warrior cannons, are considered the mainstay of all-arms AD, but troops are also taught to use small arms, in order to place a box of fire in the path of approaching aircraft.

SECTION 10 COMMAND, CONTROL, COMMUNICATIONS, INFORMATION

71. **Commanders and Staffs:**

- a. **The Commander.** TRIPLE COMPACT exercises the principle of ‘one man command’. This means that all decisions are made by the commander and that he is responsible for all aspects of his command. Everything in the TRIPLE COMPACT system stems from the commander’s decision. All plans flow downward. Initiative is not discouraged but it must be exercised in strict accordance with the senior commander’s plan. However, at the tactical level, junior officers and non-commissioned officers (NCOs) are usually inexperienced and, therefore, cannot be expected to act without instructions. The commander is responsible for the combat capability

of subordinate formations and units, the organization of combat operations, the maintenance of uninterrupted troop control and the successful conduct of combat missions. He clarifies the mission he has received (i.e., determines his formation's place in the senior commander's concept of operations). The commander makes his own intelligence estimate from the data supplied by the chief of intelligence and, with advice from the chiefs of combat and combat support arms and the rear, makes an assessment of his own forces.

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

- (1) **Clarification of the Mission.** The commander must make sure that he understands the senior commander's concept for the operation or battle and his own formation or unit's role in it. Having done so, he will make a time appreciation and, through his Chief of Staff, set in train any measures which are required immediately and issue warning orders to his subordinates.
- (2) **Assessment of the Situation.** His assessment is made in the sequence: enemy forces; own forces; flanking forces and those operating in the enemy's depth; terrain; the air and (where applicable) the NBC situation; weather and time of day. Details of the assessment's content are given in Table 3. Having decided on the possible options open to him, a formation level commander will have his Chief of Staff test the validity of each, using computer modeling or a more traditional

war gaming method. He will then arrive at his decision.

- (3) **Components of the Decision.** The decision will include:
- (a) **The Concept for the Operation or Battle.** The commander will specify: which enemy groupings are to be destroyed, with what resources and in what order; the area/sector of main effort; the organisation of combat groupings and the broad nature of the manoeuvre to be employed. This section will become the most important part of the subsequent order.
 - (b) **Missions.** Missions are laid down for organic and attached formations, units and sub-units.
 - (c) **Coordination.** The commander indicates objectives, phase lines, targets, timings and boundaries.
 - (d) **Measures for Service Support and C2 Organization.** When time is limited, these will be left to the chief of staff. Indeed, when time is very pressing, coordination instructions are also delegated to the staff.

Function	Main Issues Considered	Deductions by Commander and Influence on Plan
1. Clarify the senior Commander's Mission	Senior Commander's Concept of Battle. From Senior Commander's Orders identify: (1) Which enemy he plans to attack and how. What	a. Own unit's role in Senior Commander's plan b. Where to attack and required rate of advance

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Function	Main Issues Considered	Deductions by Commander and Influence on Plan
	<p>percentage of destruction will be inflicted on the enemy</p> <p>(2) His sector of main effort and penetration sector</p> <p>(3) Main targets for precision electronic, artillery and air strikes</p> <p>(4) Combat formation and nature of manoeuvre</p> <p>(5) Own mission, including: aim, immediate and subsequent missions and timings, reinforcing or supporting assets, boundaries, penetration sector, routes and deployment times</p>	<p>c. What percentage of losses will be suffered</p> <p>These deductions guide the commander in planning:</p> <p>d. His own sector of main effort and penetration sector</p> <p>e. His combat formation and manoeuvre plan</p> <p>f. Outline missions for subordinates</p> <p>g. Priorities in planning battle</p>
<p>2. Assess the Situation</p> <p>a. Assess the Enemy</p>	<p>Major elements in assessment include:</p> <p>(1) Composition of enemy force and combat capability</p> <p>(2) Density of enemy forces to depth of immediate and subsequent missions</p> <p>(3) Defence lay-out, including fire and obstacle plans</p> <p>(4) Boundaries, headquarters, COMCENs, logistic sites</p> <p>(5) Morale of troops and personal qualities of command</p> <p>(6) Enemy options during battle, including sector of main effort, counter-attack plans, air strikes</p>	<p>a. Main enemy groupings</p> <p>b. Strong and weak points of defence</p> <p>c. Probable enemy concept of operations</p> <p>d. Enemy's Main Effort</p> <p>These deductions guide the commander to plan:</p> <p>e. Outline plan, including sector of main thrust, and combat formation</p> <p>f. Subordinates' missions</p> <p>g. Combat support plan (including final recce plan)</p>
<p>b. Assess Own Forces</p>	<p>Headings include:</p> <p>(1) Effective fighting strength, including morale</p> <p>(2) Combat capabilities, classified by arm of service</p>	<p>a. General condition of own force</p> <p>b. Any requirement for regrouping. These provide guidance in: selecting sector of main thrust, combat formation, sub-unit missions, plan for deployment</p>

Function	Main Issues Considered	Deductions by Commander and Influence on Plan
<p>c. Assess Flanking Units</p>	<p>Assess their position, nature of operations, missions, including tempo of attack. Includes assessment of and/exploitation echelon lines of deployment and axes</p>	<p>a. Influence of flanking units on air operations b. Priorities of operation with flanks These provide guidance in planning: c. Sector of main thrust (to link with flanking units) d. Measures to coordinate with flanking units</p>
<p>d. Assess Terrain</p>	<p>Terrain is assessed in the sequence: (1) In the assembly area (2) From line of departure to line of contact (3) In depth of enemy position and under the main headings: (a) General Nature of Terrain, (b) Effects on Observation, Fire and Camouflage, and (c) Concealment Possibilities</p>	<p>a. Effect of terrain on accomplishment of mission b. Most favourable axes for operations. These provide guidance in planning c. Sector of main effort and penetration sector d. Routes, deployment lines, objectives second/exploitation echelon committal line, river-crossing sectors e. Terrain of tactical importance</p>
<p>e. Assess Hydrography, Meteorology, Times of Year and Day</p>	<p>(1) Water barrier conditions (2) Weather, including temperature, winds, clouds, fog, visibility (3) Hr of light and darkness and timings</p>	<p>Effect on operations and on employment of various weapons by either side Used as guidance in planning: a. Sector of main thrust, combat formation b. Measures to anticipate changes in conditions, e.g., floods, snow storms, etc.</p>

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Function	Main Issues Considered	Deductions by Commander and Influence on Plan
<p>f. Assess Economic/ Social and Political Conditions in Combat Zone</p>	<p>(1) Possibilities of using local resources, including repair facilities, medical facilities and communications</p> <p>(2) Mood and attitude to war and to own troops, of local population</p>	<p>Effect on combat operations and measures to exploit local resources</p>
<p>3. Selection and Formulation of the Most Appropriate Decision</p>	<p>The commander proceeds to select the most appropriate decisions which is outlined under the following headings:</p> <ol style="list-style-type: none"> 1. Concept of Operations <ol style="list-style-type: none"> a. Which enemy to rout and how, including the percentage of destruction to be achieved b. Main targets to be hit c. Axis of main effort, combat formation, manoeuvre plan 2. Missions of sub-units, including groupings, objectives, axes, timings and the percentage of losses that is acceptable in own forces 3. Cooperation. How to coordinate operations in terms of objectives, plane and time 4. Support. Combat support, C2. <p>The decision, once approved by the Senior Commander, is passed to the staff and forms the basis of the plan, which they produce</p>	

Figure 2-4-5a: The TRIPLE COMPACT Process of Assessing the Situation and Reaching a Decision in Attack

72. **Implementing the Decision.** The decision is reported to the senior commander for his approval. Once this is secured, it is passed to the chief of staff and subordinates for translation into detailed plans and instructions. Detailed and precise orders are issued only for the initial phase of an operation or battle, as enough hard data will rarely be available to allow an accurate forecast of the development of the situation in future war.

73. **CPs.** C2 is exercised through a series of CPs, their numbers and size depending on the level of command. Security of CPs is considered very important and is ensured by a number of measures.

- a. **Siting.** CPs are well dispersed and camouflaged and communications facilities are remotod to lessen the chance of the actual command element being located as a result of enemy DF.
- b. **Defence.** CPs are a high priority for AD. Ideally, they are also placed near second echelon/reserve units to gain protection from ground attack. Engineer support is normally arranged to dig in and camouflage key elements.
- c. **Manoeuvre.** By Canadian standards, CPs are relatively small. They are also very mobile, particularly, at the tactical level and they displace frequently.
- d. **Types of CP.** There are six different types of CP, though not all are formed by lower level units or formations.
 - (1) **Main CP.** At all levels from battalion upwards, this is the principal focus of control. The Main CP is run by the Chief of Staff who directs the formation/unit staff in translating the commander's decision into plans and orders. Main CP coordinates the movement and deployment of units and formations and monitors their combat effectiveness.

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- (2) **Forward CP.** Battalion and brigade commanders like to move with their first echelon on the main axis in offensive operations, to obtain personal observation of key sectors and maintain contact with their sub-unit/unit commanders. They are accompanied by a small group of principal advisers, e.g., the chiefs of operations, intelligence, EW, artillery, AD and engineers.
 - (3) **Alternate CP.** This is established laterally from the main CP, usually commanded by the first deputy commander. It is not a step-up, but a reserve CP, available to assume control if main is destroyed. It is not formed at battalion or company levels.
 - (4) **Airborne CP.** These may be established by commanders of corps, divisions or brigades. They are needed when operations become very fluid and spread over a wide area, and to maintain continuity of control when other CPs are displacing.
 - (5) **Rear CP.** From this CP, the Chief of the Rear organizes logistic support for the concept of operations he receives from Main. He monitors supply states and reports them to Main. He also controls rear area security.
 - (6) **Command and Observation Posts.** The only sort of CP formed by sub-units, COPs will often be formed by battalion and sometimes brigade commanders. Such CPs are kept very small.
- e. CP personnel are divided into three groups, each works a 16-hr shift with 8-hr rest. The CPs are highly mobile, being mounted in armoured vehicles. When Main is moving, continuity of control is

maintained by either handing over to the forward or airborne CP, or, more rarely, to the alternate CP. Usually key staffs will be moved to the new location by helicopter to reduce time spent away from their posts.

- f. **CP Staff.** The staff release the commander from having to solve administrative and technical problems, thereby allowing him to concentrate on the battle.
- (1) **Chief of Staff.** The chief of staff is also the deputy commander. As such, he is the only officer eligible to issue orders and instructions on behalf of the commander, to formations and units. He runs the Main CP and controls the battle during the commander's absences.
 - (2) **Chief of Operations.** The chief of operations prepares warning orders, calendar plans and combat directives. He also prepares some of the calculations required for the commander to make his decision and he plays a key role in planning the operation. He will replace the commander in the event of his incapacitation.
 - (3) **Chief of Recce.** The chief of recce is responsible for preparing the recce plan.
 - (4) **Chief of Combat Arms.** The chief of combat arms is responsible for the conduct of the electronic–fire engagement. In fulfilling this role, he works in close cooperation with the chiefs of recce, operations, missile troops and artillery, army aviation and AD, the deputy chief of signals for EW and the air force commander.

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- (5) **Chief of Signals.** The chief of signals organizes signal communications and the redeployment and relocation of CPs.
 - (6) **Chief of Special Combat Forces.** The chief of special combat forces prepares and implements the plan for operational concealment and deception. He works closely with the chiefs of operations, recce, signals, AD, engineers and chemical defence troops.
 - (7) **Deputy Commander for Rear Services.** The deputy commander for rear services is the commander of logistic assets and rear area security forces.
- g. **Communications.** Brigade signals units provide radio and radio relay communications down to battalion level and for forward, main, alternate and rear CPs. Battalions may operate with all stations on the same net. In this case, with more than 60 or more stations on the same net, strict radio discipline is required to avoid chaos. Radio intercept, DF and jamming pose a large threat to any military operations in the future. TRIPLE COMPACT is aware of this and where possible alternative means of communication are used, e.g., line in defensive areas and along march routes. As a general rule, radio communications are kept to a minimum until contact has been made.

SECTION 11 ELECTRONIC WARFARE

74. **General.** For several decades now, EW has been treated as an integral part of all combat actions. By the 1990s, it had become so important that it was being regarded as the equal to fire in its impact on combat. Major investment has been made in all aspects of EW, from electronic support measures (ESM) satellites through electromagnetic pulse (EMP) munitions and jammers to reducing the vulnerability of equipments to EMP and enemy ECM.

75. **Concepts.** TRIPLE COMPACT sees the electronic struggle as a whole, with victory depending on success in all its areas. The EW staff has responsibility for emission control and communications security, as well as for attacks on enemy systems.

- a. **Intelligence Gathering.** SIGINT and DF are totally integrated into the overall intelligence effort and are used in the main for targeting.
- b. **Offensive Activity.** Offensive activity is concentrated on key systems in the enemy's depth and on the main axis. A careful selection is made of what frequencies can be jammed and at what times.
- c. **Defensive Measures.** Considerable attention is paid in training to operating in an EW environment.
- d. **Deception.** EW is seen as vital to the success of any deception plan. Emitters are used to replicate CPs, traffic control nets, AD zones, etc.

76. **ECM.** The estimated TRIPLE COMPACT goal is for the destruction or disruption of at least 50 % of the enemy's C3I and fire control communications.

- a. **Critical Time.** The critical time is the sum of the time required to complete a sequence of steps: collection and reporting of data; evaluation and decision; issue of orders and preparation; completion of action. The aim of EW is to disrupt the enemy's critical time phasing to the extent that the perishable information on which decisions are based, becomes obsolete and goals cannot therefore be achieved.
- b. **Target Priorities.** Targets are assigned a priority according to their expected relative impact on the battle. These are generally as follows, though they may be altered as the situation develops:
 - (1) Precision delivery means and their associated control systems.

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- (2) Conventional field artillery, air support and AD.
 - (3) CPs, communications centres, OPs and radar stations.
 - (4) Reserves and logistic support.
- c. **Methods of Engagement.** When a target is located, a command decision is made at division/CA brigade level or above, as to whether it should be exploited for intelligence purposes, jammed or destroyed. Destruction is usually preferred, but it depends on the accuracy of the position fix and the availability of a suitable weapons system.

77. **Intelligence Gathering.** Essential to the success of EW is the timely collection, collation and interpretation of intelligence. Every effort is made in peacetime to build up the enemy's electronic order of battle and in wartime, all sources contribute to the picture, though the main ones are electronic intercept and DF. They are organized as follows:

- a. **TRIPLE COMPACT Army/Corps Assets.** TARTAN and LEMGO can deploy ESM satellites with 10 m resolution for strategic intelligence gathering and they are controlled at National level. TARTAN Corps and LEMGO's 2 Corps both have EW battalions and LEMGO's 1 CA Corps has an EW brigade. The LEMGO Air Force also has ELINT aircraft (COOT).
- b. **Divisions.** Armoured and MDs do not have integral EW assets and have to rely on Corps assets. Their recce battalions contain a SIGINT company.
- c. **CA Brigades.** CA brigades have an EW company and their recce battalions contain a SIGINT company.
- d. **All Units.** Radio sub-units are tasked against communications from corps to division, and radar

elements against enemy airpower. All CA brigade and division artillery regiments also deploy a ground radar locating system. Intercept and DF posts, both brigade, division and corps, are set up very close to the line of contact, within 3–6 km for VHF and 10–30 km for HF groundwave.

78. **Jamming.** Deliberate use will be made of conventionally generated EMP to defeat enemy emitters. Other methods used are as follows:

- a. **Radar.** TRIPLE COMPACT has not deployed active jammers against battlefield radars, presumably because destruction is preferred and their high-radiated power and directional nature, make their accurate location relatively easy. However, corps EW units do deploy jammers against enemy proximity fused rounds.
- b. **Radio.** There will be active radio jamming from the corps EW units. Most elements will be deployed in direct support of formations to attack UHF, VHF and HF groundwave nets. Tactical and operational-tactical jammers deploy well forward, within 3–6 km of the line of contact, or 10 km for HF groundwave.
- c. **Computers.** Attacks on enemy computer systems through virus implant are viewed as a force multiplier of potentially decisive significance. Every attempt will be made in peacetime to introduce bugs into the software of potential enemies, adding a whole new dimension to the principle of surprise.

SECTION 12 LOGISTICS

79. **The Nature of the Logistic System.** TRIPLE COMPACT commanders believe that there will be no continuous front line in the next war. Instead, combat will have a highly fluid, dynamic character and will spread over a wide area. On this sort of battlefield, TRIPLE

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COMPACT does not consider wholly appropriate, the traditional logistics system whereby forward divisions/brigades collect supplies from dumps to the rear and evacuate rearwards their casualties and damaged equipment. Rather, they insist that formations must be prepared to live off mobile stocks (and captured supplies and stores), at least for a few days, and not depend on constant resupply from higher formation. Medical and repair facilities must move well forward to work in areas where there has been heavy fighting and casualties are concentrated. Combat is also expected to take place round the clock (with the cover of darkness becoming an increasingly illusory advantage for logisticians). There are consequently increased demands on logistic support and for a higher level of operational security for logistic units. To prevent identification and attack, their resupply logistic units are prepared to move almost as frequently as the combat units they support, and other logistics elements (workshops, hospitals, etc.) are organized to keep up with and support the combat troops.

80. **The Supply System.** It is considered essential to maintain stock levels at or near the norm for as long as possible in all formations and units. This means that when interdiction, enemy countermoves or even the rapid pace of operations interferes with or even cuts the logistic cord, formations can continue combat action by eating into their mobile stocks until such time as resupply lines are reopened.

81. **Supply Priorities.** The usual order of priorities for supply is:

- a. precision munitions;
- b. petroleum, oil and lubricants (POL);
- c. technical material;
- d. conventional 'dumb' ammunition; and
- e. food, medical supplies, clothing.

82. **Ammunition Supply.** In terms of complexity as much as of the weight to be moved, ammunition supply, particularly artillery ammunition, is normally the biggest headache facing TRIPLE COMPACT logisticians. It will normally amount to well over half the

total tonnage (depending, of course, on the intensity of combat: the table used to be as high as 70–80 %, but precision munitions have significantly reduced the amount which needs to be moved). Getting the right number of the right calibre and type of rounds to the right place at the right time will be a challenging task, especially where the routes available are limited in number and have suffered battle damage or route denial.

- a. **Holdings.** To simplify logistic planning and standardize ordering and issuing procedures, TRIPLE COMPACT uses accounting units called ‘units of fire’ (UF), comprising a given number of rounds per weapon. All the ammunition held by the brigade is in the form of mobile stocks, replenished daily to maintain established levels. This ensures ready availability, ability to weather an interruption of supply or an unanticipated increase in consumption, possession of an emergency reserve and the ability to cope with highly mobile operations.

- b. **Artillery Supply.** Once the commander has made his plan and designated the groupings to be supported, his Commander Missile, Rocket and Artillery Troops works out a fire plan and the resulting ammunition requirements. The Chief of Missile and Artillery Armaments then designates ammunition dumps to supply the ammunition and coordinates its delivery with the Chief of the Rear and the recipient units. The Chief of the Rear provides the transport for delivery. Ideally, there will be time for corps transport to deliver ammunition to brigade artillery regiments before the attack. This ‘supplementary reserve’ preserves the lower formation’s ‘mobile reserves’ intact.

- c. **Expenditure.** In defence on the enemy’s main axis, a division/CA brigade will expect to expend over 3 x UF per day, whether the defence is prepared or hasty. With the widespread use of precision munitions, TRIPLE COMPACT anticipates a considerable reduction in the number of rounds required to achieve the suppression or destruction of

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many targets. On the other hand, artillery is expected to destroy a higher proportion of enemy weapons than previously and is now responsible for the delivery of most remotely delivered mines (RDMs) and remote jammers. Tank ammunition expenditure is likely to be at a rate of about 1-1/2 x UF per day against a defending enemy and in a meeting battle, with much less in other forms of action, but it is less of a problem, requiring about one third of the lift required for the artillery. Small arms and AD ammunition, mines, explosives and other natures pose very much smaller lift problems, their weight being almost insignificant compared with that of artillery and tank combined. The total size of the ammunition supply task amounts to shifting about 2,500/2,000 tonnes for each first echelon division/CA brigade per day, when engaged in breaking through a prepared defence, about 2,000/1,600 tonnes for a hasty defence and over 1,400/1,120 tonnes for a meeting engagement.

Location	Arty	Tk	IFV	ATGM	SAM	SAA
With Weapons –	1	1	1	1	1	1
In Bn Tpt –	2	2	2	2	4	1
In Div/Bde Tpt—	2	2	2	2	2	1
Total	5	5	5	5	7	3

Figure 2-4-5b: Ammunition Holdings in “Units of Fire” (UF) within a Division/CA Brigade

83. **Fuel Supply.** The fuel supply problem is more easily controlled than that of ammunition, despite the fact that it will sometimes account for over half the total weight to be moved. Firstly, the number of different types of fuel and lubricants which have to be moved is very limited, compared with the many forms of ammunition. Secondly, captured stocks can be utilised.

- a. **Holdings.** The POL accounting equivalent to the UF is the ‘refill’, the amount of fuel carried in a vehicle’s internal fuel tanks. The road range of most TRIPLE COMPACT A and B vehicles with one refill, is approximately 500 km. A division/CA

brigade normally carries 3 x refills of diesel (including the vehicles' initial fill), with another three at corps level and two or three times that at Army level.

- b. **The Supply System.** The bulk of fuel required by an Army will have to be transported by road in tankers then bowsers, since tactical pipelines are not deemed feasible given the terrain.
- c. **Consumption.** TRIPLE COMPACT planners believe that each division/CA brigade will need around 200/160 tonnes of fuel per day to maintain itself in the field, with expenditure rising to over 500/400 tonnes daily in the attack or meeting engagement. With almost 600/480 tonnes already in the vehicles and a further 1,500/1,200 carried in unit and higher formation transport, a division/CA brigade has enough stocks for three to five days of combat.

84. **Equipment Maintenance, Recovery and Repair.** Recovery and repair of damaged materiel plays a crucial part in the sustainability of TRIPLE COMPACT formations. Rapid repair, rather than the provision of replacement equipments, is the basic means whereby combat strengths are maintained. TRIPLE COMPACT expects up to one third of all AFV 'kills' to prove irreparable. Of the remainder, it expects to put back into action within one to two days.

- a. **The System.** The system is based on the accomplishment of repair as far forward as possible, with repair facilities being moved to the scene of combat rather than waiting for damaged equipment to be evacuated to them. Priority is given to light repairs taking a maximum of three hr.
 - (1) **Unit.** The battalion maintenance platoon recovers casualties to a damaged vehicle collection point. The unit repair shop, located nearby, then classifies them and does as many light repairs as it can, before

following the combat elements to their next area of battle.

- (2) **Brigade.** The brigade maintenance unit moves forward to an area conveniently located near the scene of the heaviest fighting and sets up repair points for armoured fighting vehicles (AFVs) and artillery, and for other vehicles. It will tackle the light repairs left undone by unit, and in the unlikely event that these are completed before they move on, it will begin on medium repairs. Even brigade assets will, however, expect to move two, or even three times in a day, if the advance is very swift, though the damaging effect that such frequent moves may have on repair rates, can be lessened by leapfrogging elements forward. If the formation is conducting manoeuvre defence or withdrawal, efforts will concentrate on recovery and repair of lightly damaged vehicles and the destruction of those left on the battlefield.
- (3) **Division/CA Corps.** Organic assets are limited to a single maintenance battalion in divisions. Within LEMGO's 1 CA Corps, there is one battalion each for armoured vehicles, wheeled vehicles and artillery. Recovery assets are integral to maintenance units. Working in the corps area, there will be substantial Army assets, the numbers depending on the importance of the axis and the severity of the fighting that is anticipated. These will deploy to points convenient for the various damaged vehicle collection points, established by the lower formations and will carry out as many repairs as possible before the momentum of the advance demands their forward displacement. They try not to fall back more than 60–80 km from the line of

contact. In defence or withdrawal, they will concentrate on evacuation and repair of lightly damaged vehicles.

85. **Medical.** The medical system is designed to return as many soldiers as quickly as possible to duty, and, apart from emergency life saving treatment, priority is given to those men who can be put back into action.

- a. **The System.** Medical units move forward with the troops they are supporting, setting up facilities in areas where heavy fighting is taking place.
- b. **Unit.** All battalions have a medical platoon capable of setting up a Battalion Aid Post (BAP). The BAP gives life saving treatment, though stabilization and evacuation are its main functions.
- c. **Brigade.** In armoured and motorized brigades, medical companies are allocated from their parent division medical battalion, as Dressing Stations (DS). Each company can man 3 x DS, which can handle up to 150 casualties in 24 hr. CA brigades have their own integral medical battalion, which can establish 9 x DS and can handle up to 400 casualties in 24 hr.
- d. **Corps.** In all cases, serious surgery and extended care, are practiced only at the operational level at corps field hospitals. Where these do not exist or where it is not practical, serious surgical cases are sent direct to the civilian hospitals of the parent country. The field hospitals are deployed in the corps rear, 60–80 km from the line of contact. One is deployed in support of every division/CA brigade in contact. A further two to four separate field hospitals are kept as a medical reserve, to deal with the sudden influx of mass casualties, which will result from enemy surge operation and/or deep strikes.

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Logistics Element	Brigade		Battalion	
	Attack	Defence	Attack	Defence
Supply, Ammunition and Fuel Points (1)	20–40	25–45	4–6	6–10
Technical Observation Point and Recycling Repair Group	>8	>10	1–2	2–4
Assembly point for damaged vehicles	15–30	25–45	–	–
Medical—DS (brigade)/BAP (battalion) (2)	10–20	10–20	2–4	5–6

Figure 2-4-6: Deployment of Tactical Level Logistic Units (average distances in km from the line of contact)

NOTES

1. There should be more than 40 km separating formation and unit supply points, even during a rapid advance which will tend to stretch supply lines.
2. BAPs will allocate Casualty Collecting Detachments (CCDs) with armoured ambulances to sub-unit sectors.

**SECTION 13
NBC AND SMOKE OPERATIONS**

NBC

86. **Nuclear and Biological Weapons.** TRIPLE COMPACT has no nuclear weapons and it is believed that their biological weapon research has yet to produce an offensive capability. However, biological weapons are of increasing interest to TRIPLE COMPACT. Medical and pharmaceutical research is expected to bring effective prophylaxis within reach in two to three years, or possibly sooner, so it is currently not seen as a threat. Biotechnology has opened up the possibility of speedy and covert production of significant quantities of agents tailored to task and of vaccines for the protection of friendly

forces. *Potentially*, a key strategic or operational capability, biological warfare (BW) is not yet seen, however, to have tactical value.

- a. **Definition.** BW agents are living micro-organisms which are intended to cause disease or death in man, animals or plants and which depend for their effects on their ability to multiply in the victim. It is this capacity for self-multiplication that distinguishes them from inanimate chemical agents and makes them more effective casualty producers. BW agents fall into four broad categories.
- (1) **Bacteria.** These are microscopic, unicellular organisms that, when used as BW agents, may cause disease in man, animals or (rarely) plants. They can be cultured on simple nutrient sources and produced in bulk. A few bacterial agents (e.g., anthrax) can form spores, a resting form which will germinate in favourable conditions.
 - (2) **Rickettsia.** These microscopic, unicellular organisms are similar to bacteria. The majority are strict parasites that can grow only in the living tissues of a suitable animal host. They are generally more difficult to produce in bulk than bacteria.
 - (3) **Viruses.** Viruses are the smallest and simplest of the micro-organisms. All are strict parasites that grow only within the tissues of a suitable animal or plant host. They can be produced in cell cultures or by harvesting tissue from an infected host. Viral BW agents could be developed against man, animals or crops.
 - (4) **Fungi.** Fungi are large micro-organisms that are somewhat more complex than bacteria. They can be cultured on simple nutrient sources and produced in bulk.

Like bacteria, some species produce toxins.
They are best suited as anti-crop agents.

- b. **Mode of Attack.** Surprise is an essential feature of BW. This can take two forms, ideally in combination. The agent should be difficult to identify and, following identification, be difficult or impossible to treat effectively within an acceptable time scale. There are many methods of dissemination depending on a number of factors. Some means are outlined here, but the list is not exhaustive.
- (1) **Sabotage.** Covert action by SPF or state-sponsored terrorist groups (e.g., the VFFA) can be used to contaminate water supplies and/or food stuffs. Aerosol sprays can be disguised as lighters, fly-sprays, deodorants, etc., and used to attack indoor personnel.
 - (2) **Area Attacks.** Insect vectors can be used to spread disease amongst animals and possibly thence to people. Aerosol attacks can either be on or off-target. Delivery systems could include everything from vehicles, crop sprayers or boats for covert attacks, through to more obviously military means such as aircraft, low observable RPVs or missiles.

87. **Chemical Weapons.** In contrast to biological weapons, chemical weapons (CW) are seen as essentially tactical weapons, though their area of employment (e.g., against logistics installations or sea and air bases [SPODs/APODs]) could have operational effects. Their casualty-producing effect, particularly against troops ill equipped and/or trained to defend against them, can be very great over a substantial area. At least of equal importance, persistent agents will significantly disrupt, degrade and above all slow down, all forms of military activity, without creating collateral damage which will inhibit friendly manoeuvre. The main effect of CW is to reduce the momentum of operations and greatly to increase the stress on troops.

- a. **Stockpiles.** Only the LEMGO Armed Forces have a CW capability (Army SSMs). Estimates of TRIPLE COMPACT's holdings vary, but they are said to amount to a minimum of 2,000 agent tonnes. "Release authority" is held by the LEMGO Minister of Defence, but would be delegated to the Army Chief of Staff on outbreak of hostilities.
- b. **Currently Fielded Agents.** Those agents known to be available are as follows:
 - (1) **Blood.** Hydrogen Cyanide (AC) is a highly non-persistent, fast acting agent whose effects depend on inhalation. Blood agents will be used on targets that are to be attacked immediately following the chemical strike, as they disperse very rapidly and create no downwind hazard.
 - (2) **Vesicants.** Mustard (H), thickened mustard and lewisite (L) are persistent to very persistent agents. Although these agents are not lethal, they will cause large casualties and over burden medical services and force troops to operate in full IPE.
 - (3) **Nerve.** TRIPLE COMPACT fields four traditional nerve agents, the non-persistent Sarin (GB), semi-persistent Soman (GD), persistent thickened Soman (VR-55) and VX. All are highly toxic, and will be used to prepare ground for an assault (by troops wearing full IPE), or for harassing, e.g., GB. The others are used according to the persistence required to deny enemy ground or equipment. TRIPLE COMPACT has introduced two new nerve agents, N5 and N7. These are binary agents with, respectively five to eight times toxicity of VX and ten times that of GD.

- (4) **Delivery Means.** TRIPLE COMPACT stresses a combination of surprise and massive concentration of agent. TRIPLE COMPACT can hit targets throughout the enemy's tactical and operational depth using the SS21 SSM. Since the LEMGO Army has three battalions each with 18 x SSMs, this is a key HPT.

88. **NBC Defence Operations.** The TRIPLE COMPACT have adequate stocks of chemical protective clothing and medical treatment kits. There is a mixture of both permeable and impermeable chemical clothing in the TRIPLE COMPACT military. Protective masks will protect against all agents in their inventory. Chemical defence units are located at most levels throughout corps units. The 1 TARTAN Corps has a Chemical Defence Battalion, with a company in each of its three divisions. LEMGO's 1 CA Corps has a Chemical Recce Battalion and a Decontamination Battalion, an NBC Recce Company in each CA Brigade and an NBC Recce Platoon and a Decontamination Platoon in each CA Battalion. LEMGO's 2 Corps has a smaller Chemical Defence Battalion and an NBC Company in each division (as does the Airborne Division). STROMIA has a single NBC Recce Company in its MD. Division chemical defence companies have a primary mission of performing decontamination. Chemical recce units are also used as mobile weather stations. Chemical warning messages, indicating friendly use of CWs are not used by TRIPLE COMPACT. Chemical warning signs are usually of old Soviet/Warsaw Pact design.

SMOKE OPERATIONS

89. **General.** The TRIPLE COMPACT will use smoke to conceal the movement of friendly troops. Smoke is normally used to blind the enemy and conceal the deployment of chemical agents. Almost all combat vehicles are equipped with smoke grenade launchers and many have engine exhaust smoke systems.

90. **Types of Smoke Usage.** TRIPLE COMPACT identifies five ways in which smoke can be used.

- a. **Signalling.** Coloured smoke grenades, shells and bombs are used to indicate targets, mark boundaries or axes, indicate the end of phases of a fire plan or to transmit such other information as is desired by the commander.

- b. **Blinding.** Blinding smoke is delivered directly in front of known or suspected weapons or OPs (especially observers with Laser Target Designators who can direct precision air or artillery strikes) for critical periods. It is believed to reduce weapons effectiveness by up to ten times and thus reduce casualties from those weapons by 90 %.

- c. **Concealing.** Concealment smoke is used to cover an area or screen a line from observation and aimed fire. It is said to reduce weapons' effectiveness by a factor of four and to reduce casualties by up to 60–80 %. It has the added advantage that it forces attack helicopters or other low flying aircraft to fly above or round the screen, exposing themselves to AD weapons that could not otherwise have engaged them. The use of concealment smoke is usually combined with that of corner reflectors, chaff and other anti–radar measures to defeat radar as well as optical and infrared (IR) target acquisition. Tactically, it can be employed in several ways:
 - (1) **Area Smoke** is used to conceal a grouping in a waiting area or a target such as a CP, missile launcher, logistics dump or bridge.

 - (2) **Smoke Screens** may be laid on successive lines to cover the advance and deployment or extrication from combat and withdrawal of combat elements. Such screens may be echeloned many km in depth. Screens may also be used to cover march routes, e.g., in defiles or when a column is halted by remote mining, or to conceal a move from one area of terrain cover to another.

- (3) **Area/Screening Smoke.** A combination of concealing smokes can be used to cover lengthy and vulnerable operations such as river crossings or tactical minefield breaching/gap crossing over a period of several hr.
- (4) **Decoy.** Smoke screens are seen as a quick, easy and effective means of creating uncertainty in the enemy. Decoy smoke can direct enemy attention and fire away from the point of main effort, especially if it is used to conceal the true scale of a feint attack. By causing the enemy to disperse his fire and misuse his reserves, it effectively reduces the density of the defence at a critical time. It can also be used to disguise the true withdrawal route in manoeuvre defence.
- (5) **Recce.** Smoke can be laid prior to an attack to induce the enemy to fire into it in anticipation of an imminent blow. Having used this expedient to locate enemy weapons, the fire plan for the real attack can be amended.

91. **Obscurants.** TRIPLE COMPACT makes full use of all obscurants, both natural and artificial, to conceal its activities and to defeat aimed fire.

92. **Smoke Generating Capabilities.** TRIPLE COMPACT smoke technology has kept pace with potential enemy recce and guidance systems. Most generating means can now produce bi-spectral smoke which will have a major impact on thermal imagers and laser systems. Millimetric Wave (MMW) chaff is employed against MMW Terminally Guided Sub-Munitions (TGSMs), both in AFV defensive aid suites and in dispensers deployed by the chemical troops for area protection. Current smoke generators include:

- a. **Artillery.** As in Western armies, artillery is used to fire white phosphorous (WP) rounds (which have a

moderate degrading effect on thermal imagers and a major one on lasers). It is as well to remember, too, that the dust created by bombardment creates considerable obscuration of its own.

- b. **Aircraft.** Smoke bombs or pots, dropped by fixed or rotary wing aircraft have increased significance, as combat has become more dynamic and fast developing. They are used in the enemy's depth, to cover flanks, neutralize ADs on fly in routes, etc. A medium lift helicopter can carry 24 BDSH 15 pots which, dropped at 200 m intervals, will create a 5 km long screen in two min.
- c. **Smoke Pots.** TRIPLE COMPACT still makes considerable use of smoke pots.
- d. **Specialist Vehicles.** Although primarily a decontamination equipment TMS-65 is very often used to generate huge quantities of smoke, either stationary or on the move. For instance, two TMS-65 can create a 1.5 km impenetrable screen 400 ms high for five min with a wind speed of 3 ms per second. This creates only visual smoke
- e. **AFVs.** All tanks and most infantry fighting vehicles (IFVs) can generate optical-defeating smoke through their exhaust systems. A platoon can produce a screen which will cover a battalion frontage for four to six min. In addition, their forward firing smoke grenade dischargers can produce a bispectral screen up to 300 ms ahead of the vehicles.

SECTION 14 AIR ASSAULT AND AIRBORNE FORCES

AIR ASSAULT

93. **General.** Given the payload/range limitations and vulnerability of helicopters, most air assaults are confined to the

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tactical and operational–tactical depth of the defence. The most important role of an air assault will be to act as a raiding detachment or group. Other missions include:

- a. Seizure of vital ground.
- b. Block or fix enemy reserves.
- c. Preventing withdrawals.
- d. Vertical envelopment.
- e. Deception.
- f. Seizure of an airhead.
- g. Counter–penetration.
- h. Air Assault troops may also be used in defence as anti–air landing forces.

94. **Air Assault Organizations.** There are no dedicated air assault organizations in TRIPLE COMPACT, although LEMGO’s Airborne Division is used in this role. Ordinary motorized troops in the MDs are very unlikely to be employed as air assault, although the light infantry battalions in the armoured divisions/CA brigades, can be employed in this role, more commonly for shallow penetration operations. The size of the force will depend on the mission, its planned duration and the available lift. A battalion, with its own combat support elements combined with supporting helicopter and close air support (CAS) sorties, could be expected to hold out for 18–24 hr.

95. **Mounting.** Local and limited air superiority is a pre–requisite for the launching of air assault operations. The company or battalion designated to conduct the air assault will move to a mounting area (up to 3 square km for a company or 20 square km for a battalion). The mounting area may be in the depth of the deployment, but will never be nearer than 20–30 km from the line of contact, so that it is out of range of all but the longest range artillery. Main and alternative pick up points will be designated for the helicopters. A company will require 10–15 min to mount and a battalion 25–30 min.

In view of the time required, especially in the latter case, ground and AD of the mounting area is vital, and smoke cover will also be provided where possible.

96. **Deployment:**

- a. Once airborne, the helicopters will form up into three groups:
 - (1) The Forward Group will comprise those forces necessary to seize and protect the landing zone (LZ). A company group will normally use a platoon and a battalion detachment two platoons, or even a company. In either case, the forward group will have attached engineers, manpack SAMs and possibly anti-tank guided missile (ATGM), an artillery observer and/or a forward air controller (FAC) and perhaps recce troops.
 - (2) The Main Body comprises the rest of the assault/landing force.
 - (3) The Support Group consists of recce, ECM and attack helicopters, to suppress enemy ADs and provide fire support for the seizure of the objective and to break up counter-attacks. Attack helicopters fly ahead and to the flanks of the battle formation, prepared to do battle with either ADs, or enemy attack helicopters.
- b. **Fly-In.** The Fly-in Route will be selected to take full advantage of gaps in the enemy's low-level AD coverage and of protective terrain features. The flight corridor is usually 2-4 k wide and will usually be within a corridor created by suppression of enemy air defence (SEAD) in support of air operations. The Flight is usually executed in single file, though a large landing force could fly in double file. TRIPLE COMPACT prefers to penetrate at

very low level (10–15 ft) or, with heavy lift helicopters, at low level (up to 50 ft). Flight speed is generally 60–80 knots which, allowing for manoeuvre in flight, permits an average speed of 2 km per minute. The forward group flies 10–20 min ahead of the main body. Artillery, ground aviation and EW will suppress known and suspected enemy ADs, on and to the flanks of the fly-in, beforehand. The safe passage of the air assault force is assisted by the designation of a number of lines to coordinate movement. These include:

- (1) **Line to Check Fire of Friendly Air Defenders.** This will be just before the rear boundary of the ADs concerned.
- (2) **Line to Check Own Artillery Fire.** This line must be short of the relevant artillery group's locations. The last salvo fired will usually be smoke, after which there will be no friendly fire until the assault/landing force has crossed the line of contact.
- (3) **Line of Deployment into Attack Formation.** At this line, in a fashion analogous to the tactics of ground units, helicopters deploy from column into landing formation.

- c. **LZs.** LZs for landing forces with no vehicles are on, or as near to the objective as the tactical situation will allow. If the Airborne Division is used in this role, airborne troops in BMD armoured vehicles may land some distance from the objective and rely on a concealed ground approach to achieve surprise.

97. **Landing.** A company needs a LZ with an area 2 k x 2 m, with a primary and alternate dismounting point. A battalion detachment needs a LZ 5 km x 5 km, within which there will be two to three dismounting points and alternates. Alternative dismounting areas are needed, in case the forward group discovers mines or concealed obstacles. The Forward Group will land and, supported if

necessary by the attack helicopters, clear the LZ of any enemy. Simultaneously, defenders take up fire positions and the engineers recce the area for mines or other obstacles. These will be cleared where possible, or their positions marked if this would take too long. Any attached recce troops (or a patrol from organic resources) will set off immediately to recce the route along which the landing force will approach the objective (and subsequently provide guides from the rendezvous (RV). The forward group covers the main body landing, along with accompanying attack helicopters (and possibly artillery and ground attack strikes). A company will require five min to land its men and equipment; a battalion needs 10–15 min. Combat attack helicopters and CAS aircraft will provide cover for the duration.

98. **Mission.** If the mission is to seize and hold ground, the objective will be taken as quickly as possible and consolidated. In the case of a raiding mission, the destruction of the target will be followed immediately by a rapid withdrawal. The raiding force will then follow one of three courses, as ordered. It may move straight away to execute a subsequent raid or ambush. It may go to ground to reorganize and perhaps await helicopter resupply, or it may move to a mounting area for extrication by helicopter.

99. **Recovery.** The transport helicopters return to friendly territory as soon as the landing has been accomplished: it is far too dangerous to remain in the area to extricate a raiding force from the LZ used for the attack. A proportion of the attack helicopters will escort the withdrawal, the rest remaining on call for 20–40 min to provide support for the landing force.

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

- a. **Rifle Company with a Mortar Platoon:** 4 x Mi8; 3 x Mi26. Ten to fifteen min required loading the heavy equipment.
- b. **Rifle Battalion and Reinforcements:** Up to 20 x Mi8; 17–18 x Mi26. It may take up to 30 min to load.

AIRBORNE

101. **General.** Airborne troops are used for operational and strategic missions. Their very existence can be expected to exert a powerful negative influence on the enemy, inhibiting his planning and deployment. A key precursor to the mounting of Airborne operations is air superiority, even if only for the mounting and deployment phases. Missions for parachute assaults include, in approximate order of importance depending on the operational situation:

- a. Seizure of vital ground.
- b. Destruction or disruption of higher level C3.
- c. Destruction of key AD systems and key weapon systems (WMD).
- d. Destruction or neutralisation of key reinforcement ports and airheads (SPODs/APODs).
- e. Block routes.
- f. Destruction or disruption of key industrial facilities.
- g. Destruction of logistics installations.
- h. Disruption of enemy transportation infrastructure.
- i. Seize an airhead or a port.
- j. Support irregular force operations (VFFA).

102. **Airborne Organizations.** As with air assault forces, the size of an airborne assault is tailored to missions requirements. Major determining factors are the enemy strength, especially in main battle tanks and aircraft, whether and for how long ground has to be held and, inevitably, the lift available.

- a. **Raiding Groups.** A raiding grouping would likely be quite small; perhaps a group of a BMD company with some AD and a mortar or artillery battery, or perhaps a battalion-sized detachment for deeper

raids. A battalion with its supporting elements could probably hold out for 12–24 r The mounting area would be around 20–30 km from the forward edge of the battle area (FEBA).

- b. **Larger Operations.** Airborne brigades, or the entire division, could be deployed to secure operational and/or strategic objectives in depth (100–300 km deep). Such a force would be expected to hold until link up for 24–48 hr, but are less likely at divisional level, due to the huge level of resources required to launch them. The one exception might be on the outbreak of hostilities when the division could be launched to execute coup de main operations. Should the formation be dislodged, it would revert to a raiding force to harass the enemy rear areas. An alternative would be to establish an airhead with an airborne raiding group and then fly in (air land) the bulk of forces. A suitable airfield (or stretch of straight highway) would be 2,000 m long. Insertion of long-range recon patrols (LRRPs) would commence 24 hr before the main drop (P-hour). SEAD must be effective 20–50 km either side of the air corridor and around the drop zones (DZs) and local air superiority effective, at least temporarily. Such an operation could be underway within 30 hr and the use of at least four main airfields, in order to allow some dispersion, would be used to mount the operation. All available transport aircraft (CONDOR, CANDID) and helicopters (HALO) in the LEMGO Air Force would carry 5,620 troops in one lift (this does not include vehicles, etc.). An operation to drop the entire division would therefore require several round trips and is therefore unlikely without the use of civilian aircraft in an air-landing role.

103. **DZs.** When selecting DZs, TRIPLE COMPACT usually adhere to the principle that they should be as near as possible to the objective, in order to maximize the surprise effect and cut to a minimum the time available for the enemy to react. It must be noted, however, that the equipping of airborne units with BMD makes it

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possible to land some distance from an objective (e.g., with strong ADs) and yet attack it after only a short period. DZ characteristics are as follows:

- a. **Numbers.** TRIPLE COMPACT does not use separate DZs for personnel and heavy drop. Instead, elements secure the DZ and establish standing patrols. Then equipments are dropped followed by their crews. A battalion will use only one DZ. A brigade will preferably have three, one for each sub-unit, though it may make do with two or even one. A division requires at least one per brigade and may use as many as six to nine (including alternate DZs), which are seen as necessary for any operation planned some days in advance (as in the case with large-scale, strategic missions).
- b. **Dimensions.** A battalion DZ could be as small as 1.5 x 1 km, while a single, brigade DZ would need to be about 6 x 1 km.
- c. **Separation.** In a brigade drop, battalion DZs should be separated by up to 5 km, and there should be 5–15 km between brigades. This minimizes and localizes the effectiveness of any enemy countermeasures.
- d. **Pathfinders.** Pathfinders may precede the drop by as little as 20–25 min.

104. **Speed of Insertion.** It is usual for the division to use two ingress routes. Dropping heights are 600–800 m, but a tight grouping on the ground and speedy clearing of the DZ is achieved by the simultaneous use of multiple exits. A battalion can be put down and organized, ready for action, in as little as 45 min by day, longer by night. (BMDs do not need to be dropped on stressed platforms, due to their special suspension and the use of retrorockets. Each vehicle has a homing device to enable its crew to find it).

105. **Tactics.** Clearing their DZs, TRIPLE COMPACT airborne troops employ the same tactics as motorized troops. Of course, being in the enemy depth, speed and surprise are even more important to

them than to motorized units. They will generally try to avoid contact with the enemy until they reach their objective, though raiding parties may be detailed en route to accomplish incidental missions. The point is stressed, however, that BMD equipped units are quite capable of conducting meeting battles and may even be given the task of covering the main axis of the main advance. Whatever role they are performing, airborne troops will certainly display a higher level of initiative, skill and aggression, than ordinary motorized troops, both in attack and defence.

106. **SPF.** While electronic and air (including RPV) recce will provide most intelligence on the enemy's operational depth, there will often be a desire to confirm their results by human observation to preclude the possibility of being deceived. There will also be recce tasks such as the capture of PWs for interrogation, or the maintenance of continuous observation of some key feature or installation that can only be done by patrols. TRIPLE COMPACT therefore places strong emphasis on information gathering by SPF. Such forces are also used to vector airstrikes (often with laser designation for missiles) and they have a secondary sabotage role. They can also be expected to deploy during the period prior to hostilities, in order to help equip, train and command the VFFA on offensive missions in the enemy's rear areas, against his key installations and it is assessed that if they invade VENTORA, this is exactly what TRIPLE COMPACT Alliance SPF forces will undertake (see Chapter 7).

SECTION 15 URBAN WARFARE

107. **Background.** TRIPLE COMPACT forces will seek to avoid urban warfare where possible, especially offensive operations. However, it is expected that if they achieve some, or all of their strategic goals before the full deployment of any USA led coalition forces, they could be expected to use their Basic Forces to defend what VENTORAN possessions they had captured, by defending large towns and cities. This will make them less vulnerable to enemy air attack on a large scale and much more difficult for a coalition force to extricate them by force alone. They have no special urban warfare units, although some units (the SPF, the LEMGO Airborne Division, light infantry battalions and motorized battalions in the MDs) are trained in that type of warfare.

108. **Types of Built-up Area.** TRIPLE COMPACT divides urban areas into four classifications. A city has a population of 100,000 or more and a perimeter of over 25 km; a large town's population is 50–100,000 and its perimeter is 15–25 km; a small town has fewer than 50,000 inhabitants and a circumference of under 15 km; anything smaller is a village or hamlet. The last two types are seen to pose lesser problems in fighting in built-up areas (FIBUA), not merely because their small size will swallow up fewer troops but because their layout is easier to master and they contain fewer large, strongly built, defensible buildings. On the other hand, large towns and cities contain many steel-reinforced concrete buildings such as municipal offices, hotels, factories, apartment blocks and multi-storey car parks that are resistant to bombardment and thus make excellent centres for defence. They often contain elaborate underground systems (sewers, amenities, tunnels and metros), which add a dimension to manoeuvre and combat. Older ones also frequently have complex street plans that can be confusing and well suited to defence. The problems involved in dealing with larger areas are thus very much more difficult than those of the smaller, requiring different techniques.

109. **Characteristics of FIBUA.** Fighting in large built-up areas, and to a lesser extent in small towns and villages, is characterized by the following.:

- a. **Consumption of Resources.** FIBUA tends to require large numbers of troops methodically to clear the area, yet it is difficult to make superior numbers tell as there is little scope for manoeuvre and deployment. It also leads to high casualties and a sharp increase in the expenditure of ammunition and other items of supply, thus imposing considerable additional burdens on the rear services.
- b. **Thermo-Baric or Fuel-Air Explosives (TB or FAE).** TRIPLE COMPACT does, however, expect that its extensive use of TB or FAE will help significantly to reduce both casualties and ammunition expenditure compared with historical FIBUA. Munitions relying not on the effects of fragments to cause casualties to the enemy but on blast waves which are unaffected by cover from high explosive (HE) fire and which are particularly lethal in confined spaces will greatly ease the capture of

even the strongest buildings. Manportable munitions are available in quantity and are issued to infantry units engaged in urban operations. TRIPLE COMPACT appears to have no qualms about the use of such weapons.

- c. **Fragmentation of Combat.** Fighting degenerates rapidly into local battles by small groups. Centralization of C2 rapidly becomes impossible and it is necessary to give sub-units, even down to platoons, a large measure of tactical autonomy.
- d. **Complicating Factors.** Destruction caused by bombardment, fires, mined obstacles and booby traps, combined with limited observation and fields of fire limit manoeuvre, hinder the application of effective fire and pose great coordination problems (on top of those already existing thanks to communications blind spots).
- e. **Rates of Advance.** Rates of Advance tend, for all the above reasons, to be very low.

110. **Avoidance of FIBUA.** Because of its characteristics, TRIPLE COMPACT prefers to avoid major offensive FIBUA battles wherever possible:

- a. **By-passing.** If it can, TRIPLE COMPACT will endeavour to by-pass a built-up area, at least with the first operational echelon. It may, however, be forced to try and capture a town or city because it is vital ground (e.g., an economic or political centre, a transportation hub or port), because it is unavoidable as a result of the spread of urbanization or because it is necessary to protect an exposed flank. If an area held by the enemy is by-passed, it will be masked by a flank detachment. The decision to attack or by-pass will be taken at corps level or above.
- b. **Preempting the Defence.** If the operational commander decides that a built-up area has to be taken, he will try to prevent the enemy from

preparing strong defences. This can be accomplished by achieving surprise, with a rapid rate of advance bringing his forces to the area before the defender has time to react effectively. Alternatively, the enemy can be prevented from occupying the town or city by using airborne, air assault or FDs to block the approaches and thus prevent reserves or withdrawing forces from entering the area. Meanwhile, TRIPLE COMPACT will endeavour to destroy his main body in a series of meeting battles. Another form of preemption is for an air assault force (preferably in BMDs), or a FD, to penetrate rapidly, by-passing as yet unprepared opposition, in order to seize vital ground in the urban area before it can be prepared for defence and then await the arrival of the main forces. (Airborne forces may be used in this way to conduct a raid on a government or military C3 centre to decapitate the enemy's political or military leadership).

- c. **Massive Bombardment.** TRIPLE COMPACT may well follow some historical precedents and seek to destroy a town or village through intense land and air bombardment with HE, TB/FAE and incendiary munitions, reckoning that a force moving in immediately after its termination would face little or no organized resistance. This option would, of course, consume vast quantities of ammunition (unless the target was very small) and may be impractical in manoeuvre warfare where logistics impose considerable constraints. The time required to clear routes through the devastation could also outweigh the possible savings in casualties.

ATTACKS ON VILLAGES AND SMALL TOWNS

111. **General.** There will be three circumstances in which TRIPLE COMPACT might find it necessary to attack, rather than to bypass, a village or small town:

- a. **Blocking Position.** Where a built-up area straddles a through route that will be needed, for instance in a valley, it will often have to be cleared.
- b. A web of defended villages within mutual supporting distance may be the enemy's chosen method of denying progress across an otherwise obstacle-free plain. Some key villages will have to be taken to open up possibilities for generating tactical or operational manoeuvre.
- c. High value targets such as headquarters or key logistics facilities will be sited in built-up areas. They will be the objective of raiding detachments or groups.

112. **The Tactical Problem.** Small built-up areas consist generally or entirely of buildings of light construction. There are often relatively large open areas between buildings and streets. The defence will usually start with small combat outposts 1 km or so outside, on routes leading in, or perhaps in the village outskirts. It will be all-round defence, usually with a centre of resistance inside the village/town, based on whatever substantial buildings exist (e.g., a church or municipal offices). Resistance may well be light and fragmented if the enemy has had no time to prepare, and even when preparation time has been adequate, the enemy will often lack enough troops to mount a serious defence of anything other than the centre of resistance.

113. **The Attack.** TRIPLE COMPACT stresses a speedy seizure from the march where the defence is light and/or ill prepared. Often, a systematic clearing will not be necessary, especially in the case of a raid: a quick dash to take the centre of resistance before the enemy can react is the ideal. Where there is a prospect of more serious resistance, the following course is adopted.

114. **Organization.** FIBUA assault detachments and groups may be formed if the enemy is believed to be in strength and well prepared. Against a hasty defence, however, it is considered inadvisable to lose time through regrouping, though it will be resorted to if the attack fails initially and has to be renewed as an attack from a position of close contact.

115. **The Advance Guard.** The vanguard will clear combat outposts and establish an overwatch position (preferably reinforced with medium artillery in the direct fire role). The main guard, supported by the vanguard, artillery and possibly attack helicopters and the use of smoke will then establish a foothold in the edge of the built-up area to provide a place for troops to enter the locality which is covered from enemy fire. A small village (about two to four streets) may then be cleared by the advance guard alone. A larger one will require the committal of additional troops from the main body, probably passed through the lodgement. Then the erstwhile advance guard will either become the second echelon or it will assume responsibility for a sector.

116. **The Main Body.** Elements of the main body, usually tank-heavy to leave as many motorized troops as possible for the clearance action, are used to conduct an envelopment of the built-up area and set up blocking positions to prevent the enemy from reinforcing and to destroy any defenders as they attempt to withdraw. Forces used to take the village or small town may be committed either through the advance guard or possibly used to mount a flank attack if the enemy has concentrated his resources against the latter.

117. **Combat Support.** Troops in lightly constructed buildings are quite vulnerable to artillery fire, particularly if they have not been given time to prepare houses properly for defence. A short but intense bombardment will drive the defenders into cellars and lower morale so that an attack which follows immediately on its conclusion will be greatly aided. To ensure a rapid exploitation of the effects of fire, assault troops may often approach within normal (i.e., open country) safety distances. DF support, preferably conducted by medium artillery, is considered essential for house clearing, so some SP guns will be attached to assault companies (up to a battery on the main axis). Smoke cover is also necessary to minimize casualties: smoke pots, grenades and mortar laid WP will be used extensively to conceal both attacks on defended houses and infantry using infiltration tactics. WP and thermite rounds may also be employed to create fires which will force the withdrawal of defending troops and provide further smoke.

ATTACKS ON LARGE TOWNS AND CITIES

118. **The Tactical Problem.** The defence is expected to depend on centres of resistance, i.e., linked blocks of buildings of very strong construction, ideally steel reinforced ferro-concrete. Between these, strong points consisting of groups of two to three buildings will be held. These will be mutually supporting and organized for all-round defence. The main line of resistance may well follow the line of a natural obstacle (rivers and canals being particularly difficult to force in built-up areas owing to the nature of their banks and the fact that they are everywhere overlooked). There may also be a citadel (strong point) into which area the defender will concentrate for a final stand. Given time to prepare, TRIPLE COMPACT expects the enemy to prepare an elaborate system of obstacles to stop armour (especially at intersections and across parks and wide streets) and to separate tanks from infantry. Some structures will be demolished to create fields of fire for ATGM and other weapons, others will be reinforced to withstand bombardment (particularly isolated, sturdy buildings which make good strong points). Communications routes will be reconnoitred and prepared through terraces ("mouseholing" from attic to attic) and using covered trenches, sewers and tunnels.

119. **Forms of Attack.** As with smaller built-up areas, TRIPLE COMPACT will try to take a large town or city from the march. In the event of this failing, or if intelligence has shown the area to be well defended, an assault from close contact with detailed preparation will be mounted from the lodgement seized by forward elements. In either case, the attacking forces will try to advance rapidly and deeply on axes suited to armour (e.g., through-routes, wide streets, parks) to prevent the enemy from organizing his defence on favourable lines and to fragment the defence into uncoordinated segments. Where possible, FDs will infiltrate to establish themselves on an identified main line of resistance and/or the citadel before the enemy has fallen back to man them for defence. They will often act in cooperation with air assault troops conducting vertical envelopment. Meanwhile, first echelon units and sub-units will try to bypass strong points (often using subterranean envelopment) to maintain momentum. By-passed areas are neutralized with artillery and sealed off using minimal first echelon elements: they will then be reduced by the second echelon. The remainder of this sub-section will deal with the attack with detailed preparation.

120. **Recce.** Thorough recce is even more important than ever in FIBUA. During the approach to a defended town or city, TRIPLE COMPACT will hope to build up a picture of the defence from agents, DRPs, SIGINT and formation RPs. Detailed street maps, plans of sewers and utilities tunnels and aerial photography will be provided where possible. As built-up areas provide excellent concealment, however, much will depend on tactical RPs and dedicated recce units and sub-units will be reinforced to cope with increased demand. Expensive recce by battle will often prove necessary, especially on the main line of resistance. At all levels, commanders will conduct a personal recce before mounting an attack.

121. **Organization for Combat.** Invariably, FIBUA degenerates into a series of sub-unit actions with C2 at higher levels becoming weak at an early stage. Therefore, TRIPLE COMPACT stresses the importance of forming CA assault detachments and groups that are capable of operating autonomously to achieve their objectives.

- a. **Assault Groups.** Assault groups are the basic building blocks in FIBUA. They comprise a motorized company reinforced by: a tank platoon; a self-propelled (SP) howitzer battery (preferably 152 millim); two to four mortars; two to four ATGMs; two to four AT guns; up to a sapper platoon and some chemical defence personnel for smoke generation. The precise strength of each assault group will depend on the importance of its axis and on the terrain.
- b. **Break-down of Assault Groups.** Each assault group will be organized into some or all of the following sub-groups:
 - (1) **Recce and Obstacle Clearing Sub-Group.** Some sappers and riflemen, possibly with a dozer and/or mine plough tank will recce the structure of obstacles and the objective and clear or widen passages through the former and, if necessary, open an entry point in the latter with shaped charges.

- (2) **Fire Support Sub-Group.** Tanks, IFVs, SP howitzers, machine-guns, grenade launchers, rocket-propelled grenades (RPGs) and snipers are used to suppress all known or suspected fire positions in the objective and adjacent structures to cover obstacle clearing and the assault: SP gun and/or tank fire may be used to open an entry point for the assault group. Chemical troops will usually be available to create smoke in greater quantities than is possible using smoke grenades: it is used for deception as well as to cover the assault and any attempt at infiltration.
 - (3) **Assault Sub-Group.** Usually of platoon-size with TB/FAE munitions, this group is used to clear the objective.
 - (4) **Cut-Off Sub-Group.** Where possible, a cut-off sub-group will infiltrate into the enemy rear to engage any enemy attempting to withdraw from the objective and to intercept a counter-attack force.
 - (5) **Reserve Sub-Group.** This will be of platoon or section strength. It may reinforce the assault force in dealing with a large building and/or help to consolidate on the objective.
- c. **Artillery.** About 50 % of available artillery will be decentralized to assault groups for use in the direct fire role (a 44 kg 152 mm round makes a much better entry point into a building and shakes the defenders much more than a high velocity tank round). In keeping with the fragmented nature of combat and because of problems of target identification and clearance of buildings, most of the remaining artillery is used in direct support of assault detachments and in forming unit level artillery groups. Heliborne OPs and the infiltration of OP parties with RPs will be important to ensure

the accurate engagement of targets. Higher control of artillery is still retained in order to prevent uncontrolled destruction of buildings and the 'rubbling' of routes, making manoeuvre impossible .

- d. **Engineers.** Extra engineers are always needed in FIBUA. MSDs are needed for each main street to clear rubble and bridge gaps. Sappers in large numbers are needed to help manoeuvre by: clearing passages through minefields and other obstacles; breaching walls and railings to aid covered movement through courtyards and gardens (as streets are best avoided), mouseholing from house to house in terraces or large buildings; disposing of booby traps and demolition charges on bridges and in underground passages; demolishing defended structures or creating entry points. They will also be important in obstacle creation (above and below ground) in anticipation of counter-attacks and for the provision of water.
- e. **Chemical Defence.** Smoke is required in considerable quantities to cover manoeuvre and attacks.
- f. **AD.** The main air threat will be to artillery deployed in open spaces, to reserves concentrating or moving forward and to manoeuvre away from the line of contact. Often, there will be a surplus of air defenders after these are protected.
- g. **Logistics.** There will be considerable extra demand for ammunition, especially tank HE, small arms, RPG rounds, grenades, explosives, TB/FAE munitions and man pack radios.

122. **Echelonning, Frontages and Objectives.** These will all be radically different from combat in the open:

- a. **Echelonning.** Formations may well attack in a single echelon with a relatively small CA reserve and ATR. This will enable them to press forward on as

broad a front as possible, maintaining pressure on the entire defence. At unit and sub-unit levels, however, the attack is always deeply echeloned. Even assault groups form a reserve.

- b. **Frontages.** Where opposition is strong and systematic clearance is necessary, an assault group will be allocated a single street, with a platoon working up each side. A Basic Forces brigade could be responsible for 2–3 km and a MD, twice that if by-passing is permitted.
- c. **Objectives.** Assault detachments of two to three assault groups are allocated an immediate objective, perhaps one to two city blocks or a single strong point, and thereafter a direction of further advance.

123. **Air Support.** Problems of identifying friendly from enemy forces virtually precludes CAS, even by attack helicopters, save for attacks on isolated buildings and across open spaces such as parks. Most offensive air effort is devoted to suppressing enemy reserves, headquarters and logistic support, and to escort and shoot-in air landings in the enemy rear. BAI is, however considered vital to prevent the enemy from reinforcing and resupplying the defenders and air recce is also very important. The use of PGMs with laser target marking is a practical solution and can be expected.

124. **C2.** Problems of observation to get a coherent picture and in communications will beset every level of command: the higher the level, the worse the problem. TRIPLE COMPACT copes with this in several ways:

- a. Responsibility is devolved downwards along with resources.
- b. Commanders move well forward to keep a personal grip on the battle and to urge subordinates on. Even assault detachment commanders and their supporting artillery commanders will be as close as 200–300 m from leading sub-groups. Unit and formation commanders will move on the main axis but will often despatch trusted staff officers to

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- maintain a vicarious grip on elements on subsidiary axes.
- c. Orders are very much more detailed than in open combat.
- d. Detailed and Alternative Signals Plans are prepared, making extensive use at lower levels of such visual signals as coloured smoke, VERY lights and of runners where radio and line cannot be relied on.

DEFENCE OF LARGE TOWNS OR CITIES

125. **Operational Considerations.** TRIPLE COMPACT foresees the likelihood of having to fight for major urban centres, to deny a port or transportation hub to the enemy or to protect an important administrative or economic centre. The decision as to which will be defended will be as much political as military and taken at the strategic level. It does not follow, however, that steps to prepare a large town or city for defence can be put off until orders are received from higher command. Plans are worked out in advance and resources gathered to implement orders as soon as they are received. It takes up to two weeks to make such an area truly defensible and hasty preparation is seen usually to be ineffectual. In planning the defence of a city, TRIPLE COMPACT foresees an operation developing in three phases, though the rest of this section will go into some detail only on the final one:

- a. **Forward Defence.** Satellite towns and villages and industrial sites should be held for as long as possible to inflict delay and keep open road, rail and air links with the rear.
- b. **Perimeter Defence.** TRIPLE COMPACT likes to make a stand on the perimeter, both to exploit to the full the plentiful concealment and long-range of weapons using it and to ensure that the enemy cannot seize the city from the march or even to insert FDs to destabilize in advance the defences within the city. Ideally, the enemy can be defeated outside by a well organized defence and counter-

attack. Failing that, he can at least be canalized in a direction favourable to the defence. The enemy will also be forced to deploy his main forces to break into the urban area and to use up precious time in organizing a storming. The aggressive action of strong reconnaissance detachments in this and the previous phase will be considered necessary to reveal the enemy's grouping and concept in advance and to hamper the actions of FDs.

- c. **Defence within the City.** A favourable defensive line will be selected that offers maximum protection and observation to defending troops and denies as much as possible of the latter to the attacker. Thus the main defence will include such features as: river or canal lines, or embankments or cuttings where these are formidable obstacles; open areas like parks or marshalling yards that give good fields of fire; hills and structures which dominate large areas; strongly constructed buildings which offer good protection from both indirect and direct fire and the possibility of mutual support; concealed routes to allow for manoeuvre by defending and counter-attacking forces. The entire urban area in front of the main defensive position will be used as a security zone, the manoeuvre defence of which will: wear down the enemy (who will be unable to bring his full weight to bear as effectively as in the open); win time for preparations to be completed and draw the enemy into a fire pocket or at least determine his axis of main effort; conceal the forward trace of the main defensive position. Looking towards the time when the main defensive position will be breached, switch and depth positions will also be prepared for defence and a particularly strong feature may be designated as a citadel and prepared for a final stand.

126. **Organization for Combat.** In defence, no less than in attack, combat will rapidly become fragmented. Unit and even sub-unit commanders, let alone those at formation level, will find that limited observation and unreliable communications will hamper their ability to exercise control. It is therefore necessary to form CA groups

capable of autonomous action down to company, and often even to platoon level.

- a. **Battalions.** Motorized and light infantry battalions may be reinforced with up to a howitzer battalion, a tank company, a composite AT battery, a sapper platoon and chemical defence smoke generators. The level of reinforcement will depend on the importance of the axis and the nature of the terrain. The same considerations will determine the composition of the company groups that defend individual strong points or are earmarked for the counter-attack role.
- b. **Armour/Anti-armour.** Tank and AT units and sub-units will generally be broken up to reinforce motorized/light infantry battalions. There will, however, be some open areas where they can be used conventionally in defence and counter-attack. These will not always be on the line of contact. Possible LZs for enemy heliborne assaults must be denied and air defenders and a predominantly armoured grouping can do this.
- c. **Artillery.** Up to 50 % of field artillery will be decentralized to battalions, mainly for use in the direct fire role. Most of the remaining assets will be concentrated in DAGs/BAGs, though unit artillery groups may be formed to cover axes on which formation groups cannot bring down fire because of terrain masking.
- d. **Engineers.** Most sappers will be deployed with battalions. There will, however, be a need for MSDs to open routes blocked by rubble created by bombardment and remote mining. Some MODs will also be required both to counter enemy penetrations and to help prepare depth and/or switch defence lines. Special parties will also have to be formed for fire fighting as conflagrations are a frequent hazard in FIBUA.

127. **Echelonning and Organization.** As in the offensive, defence swallows up a lot of troops if it is to be effective.

- a. **Echelonning.** It is usually very difficult for the attacker to achieve momentum in FIBUA, at least where the defender is well prepared and has an effective density. On the other hand, the latter implies a short frontage as few weapons can utilize to the full their effective ranges. Large scale counter-attacks are precluded by the terrain, but small ones mounted immediately after a position is lost will often be successful. These considerations generally lead to formations deploying in a single echelon with a small CA reserve and anti-landing reserves (ALRs) as required by the amount of open space in the depth. Brigades will often deploy in one echelon if on a minor axis or two on a major one. CA or reinforced motorized/light infantry battalions will usually deploy in two echelons to allow for the mounting of quick local counter-attacks, though lack of resources may prevent the retention of anything other than a reinforced platoon-size reserve on a subsidiary sector.

- b. **Organization.** The basic building block of defence is the company/platoon strong point. These are grouped into battalion centres of resistance. Each is organized for all-round defence and ideally prepared to fight for a considerable time in encirclement. The frontage and depth of each will depend on the mission (i.e., whether on a major or minor axis and whether in the covering force or, if in the main defensive position, in the first or second echelon); on the strength of the grouping; and on the terrain. Typically, a platoon strong point will comprise one to two sturdy buildings, preferably with basements or semi-basements, located at a crossroads, on a street corner or overlooking a bridge or open ground. A reinforced company strong point will consist of one large, four storey or higher building or one to two blocks or groups of buildings with mutually supporting platoon positions. Its frontage will thus vary from 200 or so ms up to about 600 ms

with a depth of 200–400 m. A battalion centre of resistance will comprise two to three strong points in one or two echelons according to the significance of the axis. In the main defensive position, centres of resistance form a continuous line without significant intervals between units. In the security zone, only main routes are strongly defended, with obstacles, ambushes, patrols and snipers used to delay attempts to outflank individual strong points and centres of resistance or centres of resistance.

128. **Strong Points.** Locations are chosen both for their tactical importance and, wherever possible, for their good fields of fire. Where the latter are unavoidably short, it is considered necessary to provide several tiers of weapons to produce the volume of fire necessary to defeat attack. Strong points and centres of resistance are always organized for all-round defence:

- a. **Obstacles.** All approaches are covered by mines and wire and tank approaches are also denied by dragon's teeth or cratering. To the flank or rear, some obstacles will be portable to allow for rapid withdrawal, or for the ingress of counter-attackers.
- b. **AFVs and Heavy Weapons.** Some will be emplaced within buildings and well protected and camouflaged: (Multi-storey car parks are ideal fire positions as they give excellent protection, freedom for manoeuvre of defending weapons and good fields of fire.) Others are dug in outside with two to three alternative positions for each (preferably enfiling the approaches to the buildings).
- c. **Infantry Troops.** Some troops will be dug-in in gardens or the street. Others will be positioned in buildings, utilizing semi-basements and all floors to provide multi-layered fire positions: attics are used to site mortars, anti-aircraft machine guns (AAMGs) or handheld SAMs. Buildings are prepared for defence in the following way. Doors and windows are blocked with sandbags, bricks or earth filled and covered furniture and embrasures are created in these and in the walls (including false

ones to draw fire). Floors and firing positions are reinforced to reduce the effects of collapse as a result of shellfire. Stairways are removed or covered in wire to complicate clearing, communications between floors subsequently being done by ladders; outside fire escapes are wired and booby trapped. To reduce the effect of flame attack, combustible materials are removed or covered in earth, moveable shields are placed in front of embrasures and a 15–20 cm high earth wall is built in front of the entrances to underground shelters to defeat napalm. Basements are made into shelters against bombardment, storerooms, medical points and CPs. Everyone should have two exits, going in different directions, with at least one being in the form of a covered passage whose exit is beyond the reach of collapsing rubble. Ground floor exits are given blast-proof protection and lead to a communications trench. Communications between platoon strong points are mainly by underground passages (which may also be used to deliver surprise fire from the rear against attackers).

129. **Engineer Tasks in Defence.** Built-up areas can be transformed into fortresses, but only at the expense of much time and effort. There will rarely be enough engineers on hand to accomplish all tasks and they will need extra manpower. Cities provide a wealth of local resources for ditching, creating obstacles, etc., so resources or materials will not be a problem. Engineer tasks are as follows:

- a. **Implementation of the Obstacle Plan.** This will include demolitions, AT ditching and the creation of hedgehogs and dragon's teeth on likely approaches: wire and anti-personnel mining will protect them against enemy sapper demolition/clearing parties. Parks, squares and other open spaces as well as streets will be denied to the enemy, and those within the defence itself (and not in use as artillery fire positions) will be covered with anti-landing obstacles and/or anti-helicopter mines to prevent vertical envelopment. The obstacle plan will protect all strong points, canalize the enemy into fire pockets and cover gaps between strong points (along

with patrols, ambushes, snipers and artillery/mortar fire). Extensive booby trapping may also be used to hamper enemy consolidation of captured buildings, and booby traps and mines will similarly complicate the enemy's use of houses, etc., not prepared for defence.

- b. **Clearing Fields of Fire** by demolishing buildings, walls or trees will be necessary, especially to provide long shoots for AT weapons.
- c. **Creating Fire Positions.** Digging guns or tanks into buildings is a skilled task requiring sappers. They will also be needed to create artillery emplacements in squares, gardens, courtyards and parks for artillery used in the indirect fire role. Engineer protection, camouflage and AD will necessarily substitute for manoeuvre in ensuring the survivability of much of the artillery in FIBUA.
- d. **Improving Communications.** Terraced houses or rooms in large buildings are interconnected by mouseholing. Separate buildings are joined by communications trenches. Underground routes (e.g., sewers, utilities tunnels, drainage ditches) may need to be improved and signed (or blocked if unwanted by the defence and useable by the enemy.)
- e. **Improving Survivability.** Shelters need to be dug or improved (together with access routes) and structures reinforced to withstand fire.
- f. **Fire Fighting Teams** will be needed to extinguish or contain conflagrations.
- g. **Route Opening.** Manoeuvre, already restricted by the very nature of the built-up area, will become even more problematical with bombardment and the collapse of buildings. Strong MSDs will be needed to keep routes open for resupply, counter-attacks and redeployments.

- h. **Rapid Obstacle** Creation will require MODs to prevent the attack from gaining momentum.

130. **Conduct of the Defence.** TRIPLE COMPACT believes that a static defence is doomed to failure, however well prepared. It therefore puts great stress on the following.

- a. **Recce.** It is important to determine the timing, direction and strength of impending enemy attacks. Constant recce is necessary to reveal these in conditions where the terrain aids concealment. TRIPLE COMPACT makes widespread use of stay behind patrols (both within and outside the city) and will insert recce, fighting and ambush patrols into the enemy depth, often utilizing underground routes.
- b. **Stubborn Defence** of strong points and centres of resistance is necessary to win time for countermoves and provide a pivot for counter-attacks. No withdrawal is allowed without the express order of the senior commander, even in the face of encirclement. Stubborn defence does not, however, imply stolidity. Frequent manoeuvre within both strong points and centres of resistance is used to confuse the enemy, ensure adequate counter concentration against attacks and to set-up counter-attacks.
- c. **Countermoves.** TRIPLE COMPACT believes that speed and surprise matter more than finesse and strength in counter-attacks in an urban environment. An enemy disorganized by the process of clearing a building or strong point, unsure of the geography of the area and possibly running low in ammunition is more likely to be thrown back with heavy casualties by an early counter-attack by local reserves than by a set-piece later. There is therefore an emphasis on battalion and brigade level reserves, organized as assault groups and detachments, over those at formation level. TRIPLE COMPACT is also known to practise manoeuvre defence even within a main defensive position: a strong point may be lightly held to reduce casualties from bombardment and

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abandoned as the attack comes in, relying on immediate counter-attack rather than static defence to ensure possession at the end of the fight. Both at unit and formation level, commanders are also expected to take calculated risks to redeploy reserves and troops from passive sectors for both counter penetration and counter-attack tasks. The concealment offered by the terrain and the time the enemy requires to organize attacks even if he detects such a move are believed to make bold manoeuvre possible and effective.

- d. **Aggressiveness.** TRIPLE COMPACT does not believe in leaving the enemy in undisturbed possession of his gains. Attempts will be made to infiltrate back into captured areas to harass the enemy, get artillery OPs into favourable positions and even to re-establish a position in the enemy's depth or to counter-attack from the rear.

131. **C2.** The defender will benefit from a lengthy preparation time to improve his communications. The civil telephone network will be exploited and additional land line can be deeply buried to protect it from the effects of bombardment. Thorough recce will also reveal the requirement for radio rebroadcast facilities. Nevertheless, communications will be put under great strain and will be subject to interruptions, so commanders place themselves well forward on the main axis, where possible in CPs; this will apply even at division/brigade level, commanders to exert a personal influence on their subordinates.

132. **Logistics.** Every effort will be made to ensure that each individual strong point and defended area and the city itself is sufficiently well supplied to meet the heavy demands of urban combat without its need for early resupply. At every level, fighting in encirclement is a possibility that must be catered for.

SECTION 16 ATTACK AVIATION AND AIR

133. **Attack Aviation.** Helicopters are used primarily in an offensive role, but they may be used in a defensive role as well. They

are assets TRIPLE COMPACT uses to strike deep into the enemy's rear area.

- a. **Assets.** TARTAN 1 Corps and LEMGO 2 Corps both have an attack aviation brigade, each with three battalions (20 x Mi24 HIND, 20 x Mi8 HIP, 20 x Mi28 HAVOC). In addition, they each have a support battalion with 4 x Mi38 CP helicopters, 8 x Mi8 HIP and 8 x Mi26 HALO for transport/utility. All armoured and MDs have a battalion of 18 x Mi24 HIND. LEMGO's 1 Corps has a large attack aviation brigade of six battalions. Three battalions have 18 x Mi28 HAVOC each, a further two battalions have 18 x Mi8 HIP transport/utility and there is a sixth battalion with 18 x Mi24 HIND.

- b. **Army Aviation Mission Assignment.** Army Aviation can perform a range of missions and tasks. These can be broadly divided into four main categories, which are usually associated with aircraft role and weapons load.
 - (1) **Fire Support Missions.** Aircraft in the fire support role will be expected to engage a range of targets, primarily targeted against the enemy COG. This COG is likely to be enemy C2 and sensors, since a USA led coalition is likely to be C2 and sensor dependant. The target list could also include enemy tanks, artillery, AT and other armoured weapons; personnel in strong points and in combat or approach march formations; enemy airborne assault forces, airmobile units or sub-units; raiding and recce units; suppression of ADs; and destroying helicopters in the air and on the ground.

 - (2) **Transport Missions.** The type of support tasks performed by transport helicopters at tactical levels will involve the following: carrying sub-units; evacuating wounded

and sick; delivering logistic supplies; and replenishment of ammunition and fuel. The Mi8 is the most commonly used and heavy lift is provided by the Mi26 which can transport two BMDs or about 80 airborne troops or 20 tonnes.

- (3) **Recce Missions.** Light helicopters (e.g., Gazelle) will conduct route and NBC recce and surveillance of the forward edge or open flanks. On occasion, attack helicopters may also be used in the recce role, and pairs may be used for armed recce missions.
- (4) **Deep Raids.** Increasingly, the actions of Army Aviation are extending beyond the contact battle. The improved performance and survivability of both fixed and rotary wing aircraft enable them to conduct small and large-scale raids to the depth of the operational zone of defence to strike the important targets that seek protection through remoteness. Usually, such raids are conducted by a mixed force of ground attack aircraft and helicopters.
- (5) **Special Missions.** A number of helicopters will be assigned to special missions including the following: C2; liaison and communications; adjusting artillery fire; airborne FAC duties; aerial minelaying; and laying smoke screens for deception/concealment purposes.

- c. **Aviation Capabilities.** TRIPLE COMPACT calculates the capabilities of aviation support based on a number of variable criteria: mission performance time; depth of: combat operations; mathematical expectation of the number of destroyed or suppressed targets; load-carrying capacity of the helicopter; the number of targets located or reconnoitred; the number and size of

minefields laid; etc. TRIPLE COMPACT believes that its aviation assets can fully support a unit's combat operations to the full depth of its assigned mission, though only units on the main axis can expect to receive strong air support. Of course, the following calculations of capabilities do depend greatly on TRIPLE COMPACT's control of the air and effective suppression or avoidance of ADs.

- d. **Tactics/Capabilities.** Attack helicopters frequently fly forward of the attacking forces and will work in companies (groups of four as hunter-killer teams). Helicopters will use pop up tactics to fire into an engagement area (EA). All helicopters will fly at least in pairs. Helicopters are also used to insert special operations forces in the enemy rear as well as to move troops and supply laterally on the battlefield. One group of attack helicopters, operating in one sortie against the target, can expect to destroy 10–12 tanks in the open or 6–8 tanks dug-in. One pair of medium lift transport helicopters (Mi8) can carry 48 combat-equipped men to a target area. In the recce role, one helicopter can reconnoitre two to three areas (covering 50 square km each) in one sortie. In the minelaying role, one pair of medium lift transport helicopters can lay a minefield covering 1,300 m x 30 or more (though more usually, three would be used to lay a three row minefield).

134. **Fixed Wing Support.** Fixed wing aircraft are integrated into ground force battle plans and they are used primarily for battlefield air interdiction (AI), but this is only possible when air parity or better is achieved, since otherwise, aircraft will be especially vulnerable to enemy operational AD assets such as PATRIOT and ship based systems. While TRIPLE COMPACT forces have limited numbers of modern aircraft, they can be expected to surge sorties early in a conflict. The sortie rate will drop off as attrition takes place, because of limited repair and resupply facilities and expertise.

- a. **C2.** All fixed wing aircraft are controlled by the TRIPLE COMPACT National Air Forces, which will plan bombing missions, recce missions, troop transport,

ground support missions and air interdiction missions. Each corps and division/CA brigade can request air support through their integral Air Force liaison personnel that can work with corps, division and CA brigade commanders in requesting missions. Forward tactical air controllers will be well forward, controlling all ground support air operations.

- b. **Tactics.** TRIPLE COMPACT recognizes that, while SAM defences can be avoided, or at least exposure to them limited, by careful routing and low flying, enemy fighters cannot easily be evaded if controlled by airborne warning and control systems (AWACS). AWACS has effectively closed the gap beneath ground-based radars which in the past was exploited by attack aircraft, thus forcing the latter to fight their way to and from the target rather than try to avoid the defence. Fighter-bomber design therefore stresses high speed and manoeuvrability and such aircraft now carry short-range air-to-air missiles (AAMs) for self-protection as well as offensive stores. There is, in fact, less and less difference in performance between advanced fighter-bombers and fighters, with either being usable (albeit with some limitations) in the other role. The weapon load is becoming the major differentiating factor rather than aircraft type, though obviously air superiority fighters lack terrain following radars for low level penetration and fighter-bombers do not have radars suitable for beyond visual range (BVR) engagements. In the event of a BVR attack, the latter have to rely on radar warning receivers (RWR), decoys and manoeuvre to defeat the attack while closing to short range.
- c. **AI.** Fixed wing aircraft are used primarily for battlefield AI. Aircraft in the AI role will be expected to engage a range of targets, primarily targeted against the enemy COG. This COG is likely to be enemy C2 and sensors, since a USA led coalition is likely to be C2 and sensor dependant. AI targets are normally lines of communication, CPs, sensors, troop assembly areas, logistic and industrial facilities. When AI missions are flown,

they will normally fly between 9,000 and 14,000 ft. The more experienced pilots will fly between 4,000 and 8,000 ft. AI is conducted to prevent the timely, organized committal of enemy tactical second echelons and reserves to battle, to hamper and delay tactical regrouping or the establishment of defensive positions in the operational–tactical or tactical depth and to interfere with logistic support. AI missions can be accomplished through obstacle creation (e.g., the destruction of bridges or aerial mining), by direct attack or, preferably, by a combination of the two: air strikes are considered especially effective when launched against columns which have been halted and become bunched on an obstacle. AI will be the principal means by which enemy operation–tactical and tactical manoeuvre will be restricted and delayed. In keeping with the principle of economy of force, it is executed against targets beyond artillery range, and this reduces the problem of coordination with the ground forces. Together with the destruction of enemy deep fire and C3I, it is the principal form of offensive air support (OAS), whether in attack or defence, at least as far as the Air Force is concerned. (This is not to deny the role of Army Aviation in AI. Improvements in attack helicopter performance now permit their use, usually in cooperation with ground attack aircraft, beyond the line of contact. Army aviation now expects to conduct raids even, on occasion, into the operational–tactical depth).

- d. **CAS.** CAS comprises air action against enemy forces in close proximity to the line of contact. It may be used against targets on the line of contact, but this is not generally favoured for fixed wing aviation especially, unless used in conjunction with laser target marking and the launching of PGMs from ‘stand off’ platforms (used by SPF for example). Smoke and dust, the intermingling of friend and foe and the rapidly changing trace on the line of contact all combine to reduce the effectiveness of strikes and increase the risk of fratricide. Besides, such usage hardly exploits the characteristics of tactical or even ground attack aviation

and adds little to the weight of fire put down by artillery. This form of employment will usually be limited to emergency situations or to assisting units which are in the depth (friendly or enemy) and lack strong artillery support (as is the case, for instance, with air-delivered forces, FDs or, in some cases, ALRs). When they fly a CAS mission, they will normally fly between 1,000 and 3,000 ft. Only the most experienced pilots will fly CAS missions. CAS is best used to strike targets which cannot be efficiently engaged by artillery, either because of problems of precise target location or because of terrain masking or because the target is moving or dispersed: CAS poses formidable problems of coordination, needing to be tied in not only with friendly AD but also with the artillery fire plan and ground forces manoeuvre. Most CAS tasks will be performed by Army Aviation, which is equipped, organized and trained primarily for this mission. Attack helicopter units in particular are seen to be capable of providing rapid and intimate fire support, especially at night, in conditions of poor visibility and in difficult terrain or a confused situation. Helicopters have other advantages over high performance aircraft. They can concentrate and often manoeuvre undetected for an attack more easily than fixed wing aircraft, though even they are not able to escape the attention of recon satellites or AWACS. They can conduct ambushes and deliver large numbers of mines. Helicopter pilots are also held to be more capable of evaluating battlefield conditions rapidly and exactly.

135. **Operating Bases:**

- a. **Fixed Wing.** Each aviation wing should have two to three airfields, including one Main Operating Base (MOB). A proportion of MOB's are multi-functional, being able to support the actions of bomber and transport as well as all forms of tactical aviation. Usually, two thirds of all airfields are active bases and one third are alternative. In the theatre as a whole, probably 35 % will be permanent bases, 35 % will be deployment fields and 30 % will be manoeuvre/alternative fields for dispersal in the face of

attack or for the use of temporary groupings. (Normally, aircraft do not, where possible, recover to the bases whence they mounted their mission and reserve fields are needed for redeployment from other sectors and/or from the depth to create groupings for surge operations). In emergency, highway strips can also be used for recovery or for transit to proper bases. The aim is to ensure survivability of air assets through a combination of manoeuvre and dispersal, keeping a reserve of airfields for surge operations. Extensive use is also made of deception to enhance survivability. Between one-third and one-half of all bases may use dummies to divert enemy reconnaissance and attack effort: of course, dummy fields can be activated as the situation demands. During deep offensive operations, the problem of acquiring forward bases will become significant, and TRIPLE COMPACT puts stress on their seizure, intact if possible, by airborne, air assault or FDs. These, and suitable highway strips, will be restored/improved by engineers. In defence, when the enemy is mounting an effective offensive counter air (OCA) operation, bomber aviation and much of the fighter-bomber and long-range fighter forces will, if possible, be held rearwards to gain protection from depth.

- b. **Rotary Wing.** Attack helicopters normally deploy in companies or battalions to forward operating sites which move forward with the advance or rearwards during withdrawal. For protection, they are usually sited out of range of potential enemy long range MBRLs (i.e., no closer than 60 km from the line of contact). In defence, forward operating sites will generally be found within the deployment area of second echelon divisions (i.e., 80–100 km from the line of contact). Based on the capability of a sortie consisting of four aircraft, operating in support of a brigade or CA battalion, it is expected that the following capabilities would be planned for: up to 16 enemy helicopters destroyed at one to two locations; or the suppression of a tank (or motorized infantry) company in the open or two platoons in a strong point; or one to two brigade CPs neutralized;

or delaying the advance of a tank (motorized infantry) battalion for a period of up to three hr (if there are no detours on the route). Up to a maximum of five to seven times this capability can be expected for specific tactical level situations (including the occasional overlap between the tactical and operational levels).

SECTION 17

TACTICAL MARCH PROCEDURES

136. **General.** To move his forces, a TRIPLE COMPACT Commander will adopt two different types of march formation: the Administrative March and the Tactical March. The Administrative March is used when enemy contact is considered unlikely. Vehicles will be grouped together in packets determined by speed and movement capability, rather than true combat groupings. However, even in the Administrative March, tactical requirements are still uppermost in a TRIPLE COMPACT commanders mind. Traffic control points will be set up to control march organization and security patrols and AD assets will be deployed in order to ensure maximum force protection. When a TRIPLE COMPACT commander considers enemy contact likely, he will order the march to adopt a tactical posture. This new march formation is called the Tactical March.

137. **Aim.** The Tactical March allows a commander to deploy rapidly from column, in pre-formed groupings tailored for combat, directly into battle.

138. **Definition.** The Tactical March formation normally begins in an assembly area, where formations and sub-units 'shake out' from their Administrative March and carry out any last minute maintenance, logistic and administrative tasks. The march itself is characterized by both a high rate of movement and tight control by the Commander, who normally insists on radio silence until contact with the enemy is established. There are two main factors that define the march: March Security and March Organization, both fundamental to the March's effectiveness.

139. **March Formation.** There is no stereotypical march formation but will be determined by the following factors:

- a. mission,
- b. terrain it will move through,

- c. meteorological conditions,
- d. the nature of the enemy threat, and
- e. his own capability.

140. **March Security:**

- a. **Advance Guard.** The primary element of March Security within the Tactical March formation is the Advance Guard. This is a tank or motorized battalion/BG, which moves ahead of the Main Body, along the main brigade axis. The roles of the Advance Guard are:
 - (1) To prevent an attack from striking the main body before it can deploy.
 - (2) To drive back enemy recce.
 - (3) To clear minor opposition from its axis.
 - (4) If strong opposition is met—to seize a favourable line to support the deployment of the Main Body into battle.

However, if the formation is equipped with modern surveillance and target acquisition (STA) assets and their situational awareness (SA) is good (such as CA units/formations), there is little reason to use an Advance Guard except as part of a deception plan, since they can manoeuvre straight into the attack against a known enemy.

- b. **Structure.** The Advance Guard consists of three main components:
 - (1) **Combat Reconnaissance Patrol.** A CRP is a platoon-sized element which is usually reinforced with either NBC, engineer recce, artillery C2 and perhaps EW.
 - (2) **Vanguard.** A company-sized element which is usually reinforced with an artillery or mortar battery, AT elements and engineers.

- (3) **Main Guard.** This is a tank or motorized battalion/BG minus, either from the second echelon of a first echelon brigade, or a battalion/ BG from a second echelon brigade. It is minus because it has given up the assets that form the CRP and Vanguard.
- c. **Action on Contact.** If the Advance Guard makes contact with an enemy element, it will try to brush it aside. If the CRP and/or Vanguard cannot move the enemy, it will fix the enemy in place to allow the main guard to pivot to an enemy flank or rear and destroy it. This is known as **FIX—PIVOT—DESTROY**. The same routine is used between the Advance Guard and the Main Body.
- d. Other March Security Elements are:
 - (1) **Forward Patrols.** FPs are the most common form of March Security and can be found throughout the Tactical March formation. Thus, the Vanguard of first echelon battalions Advance Guards, Main Guards, Forward Detachment (FDs), etc., will all probably be led by FPs. Although these patrols have a secondary recce function, their primary mission is force protection. They operate close to the Main Bodies of the Tactical March, (generally between 1–2 km ahead) and travel along the Main Body’s actual route. The majority of FPs are normally platoon-sized and may have either NBC or engineer recce assets included within the grouping. However, the FP can be as small as a scout section, or indeed a single scout vehicle.
 - (2) **Flank Security Patrol.** Flank security patrols (FSPs) can be deployed in appropriate tactical security situations. Normally, they will comprise of a motorized/tank platoon, which may be reinforced with Engineer and/or NBC recce assets.

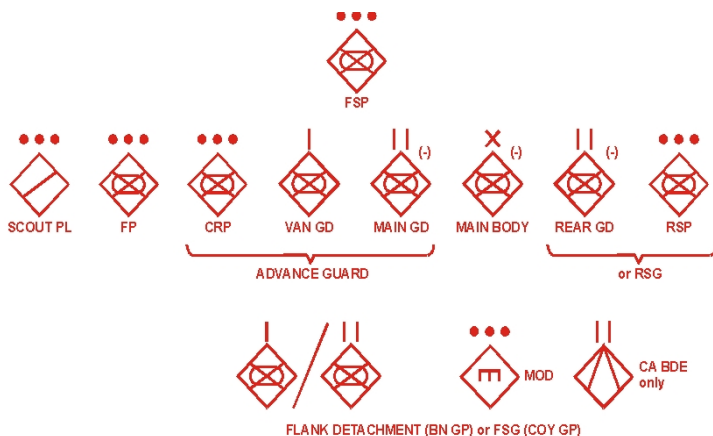
- (3) **Rear Security Patrol.** Rear security patrols (RSPs) can be deployed in the appropriate tactical security situation. Normally, they will comprise of motorized/tank platoon, which may be reinforced with Engineer and/or NBC recee assets.
- (4) **Scout Section/Scout Vehicle.** This is the minimal March Security element. A scout section or vehicle may be sent ahead of the CRP/FP to act independently. Scout Sections are also frequently deployed on the open flanks of sub-units.
- (5) **Rear Guard.** Rear Guards have a similar role and are similar in size to that of the Advance Guard formations. However, full Rear Guards are only deployed when there is a serious threat from the rear or where elements are conducting a withdrawal.
- (6) **Rear Security Group (RSG).** If the threat to the rear is weak, then a RSG may deploy instead of a full Rear Guard.
- (7) **F flank Detachments.** A Flank Detachment is normally a company grouping found on the flank nearest the enemy. It is usually augmented with AT, engineer (MOD) and AD assets. If the threat is especially great, an AT Battalion may be deployed. Flank Detachments can either move in bounds from one blocking position to another, or March in parallel (5–10 km laterally) with the head of the Main Body of the formation.
- (8) **F flank Security Group.** Flank security groups (FSGs) are deployed on a potentially threatened flank but where the threat does not warrant a Flank Detachment. An FSG may be reinforced with AT/engineer (MOD) assets.
- (9) **Movement Support Detachment.** (See Engineer Operations). Engineer assets will

provide a MSD for each axis that is being exploited. The composition of each MSD will vary according to the importance of the axis and the problems that it expects to encounter. Its primary mission is to enhance freedom of movement.

- (10) **Mobile Obstacle Detachment.** (See Engineer Operations). The MOD will come under the control of the AT unit, subsequently, the MOD will be found in a Flank Detachment or with the Anti-tank Reserve (ATR). Its primary mission is the laying of man-made obstacles and the enhancement of natural obstacles to restrict the freedom of movement of the opposing forces.

- e. **March Security Principles.** Once in a combat zone, stronger March security elements will be deployed, including the use of FDs to conduct close or deep battle operations ahead of the main formation. If a meeting battle, attack against an ill-prepared or extended enemy, or pursuit is anticipated, the leading echelons will normally be tank heavy. Artillery groups CAGs, DAGs, BAGs and BnAGs also usually move in the first echelons at the appropriate level, so that if required, rapid fire support can be provided to the lead elements of the formation. Additionally, MSD, tailored to the ground and the level of enemy route denial, will immediately follow behind either the forward March security elements or the Advance Guard battalions. At both the operational and tactical levels, ATR and MOD will move to a threatened flank or forward with the March's Main Guard, ready to deploy to either flank if required.

141. Figure 2-4-7 shows an example of how security elements of the Tactical March *may* be deployed. It is only an example, as there are many variations the TRIPLE COMPACT Commander can use to protect his forces.



NOTES:

1. ALL ELEMENTS ARE ILLUSTRATED, BUT NOT ALL MAY BE DEPLOYED AT THE SAME TIME.
2. FULL REAR GUARDS ARE ONLY DEPLOYED IN WITHDRAWAL OR IF THERE IS A SERIOUS THREAT FROM BEHIND.
3. COMPOSITION IS ILLUSTRATIVE ONLY.

Figure 2-4-7: Elements of Tactical March Security

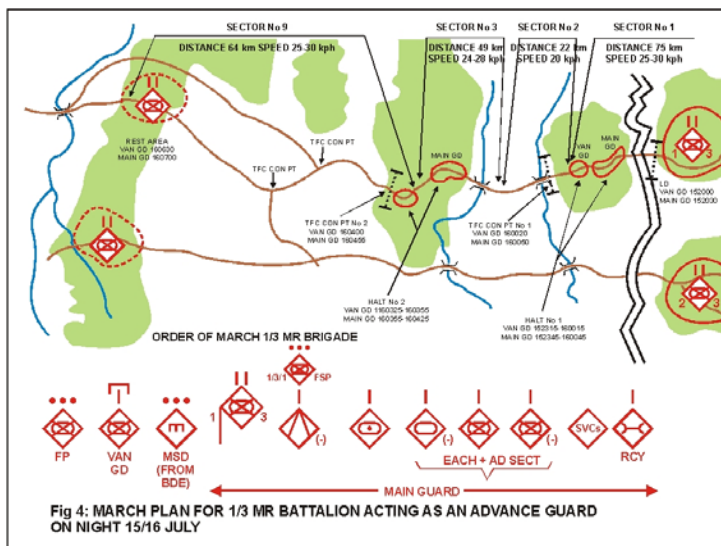


Figure 2-4-8: March Plan for 1/3 MR Battalion Acting as an Advance Guard on Night 15/16 July

142. **Planning Factors:**

- a. **Routes.** In normal terrain, a brigade will move within a zone of up to (CA brigade 25 km, motorized/armoured brigade 10 km) wide. Wherever possible within this zone, a brigade will normally advance on two routes, with an additional one or two more being identified, in case the enemy denies the original ones. The existence of these alternate routes minimises any delay and disruption likely to be caused by enemy action. Additionally, lateral routes are normally recce'd, and even improved so that axes can be shifted rapidly in the interests of tactical manoeuvre. In normal terrain, a battalion/BG mostly advances along a single route until it begins to deploy into battle formation. However, the battalion/BG commander will have identified a secondary route in case the enemy is able to deny him further progress on his original axis of advance.

- b. **Intervals and Road Space.** The standard interval between vehicles within columns in the Tactical March is 25–50 m; 100 m separate companies, whilst 3–5 km separates battalions/BGs from other packets within a brigade Main Body. Larger intervals separate other major groupings. The Advance Guard usually travels up to 30 km in front of the Main Body while within the Advance Guard itself, the Vanguard is normally approximately 5-10 km from the Main Guard. All told, a battalion/BG acting as an Advance Guard will require approximately 25 km of road space in the Tactical March formation. In addition, a brigade advancing on two routes, will have a total depth from 100–190 km. Table 6 indicates TRIPLE COMPACT planning distances when moving in the Tactical March formation.

Grouping	Distance	Remarks
Brigade Recce	Operates <i>up to</i> 20–30 km in front of Advance Guard	
Advance Guard	Advance Guard Operates <i>up to</i> 30 km in front of Main Body	<ol style="list-style-type: none"> 1. CRP if deployed, <i>may</i> operate 3–5 km in front of Vanguard 2. FP, if deployed, <i>may</i> operate forward of the CRP, but within 1–2 km 3. Vanguard <i>may</i> move 5–10 km in front of Main Guard 4. Advance Guard <i>likely</i> to cover a total distance on the ground of approximately 25 km
Main Body	Distance covered on the ground <i>from</i> 45–100 km	Distance between battalion–size groupings will be <i>approximately</i> 3–5 km. Between brigade–size groupings approximately 5–10 km

Figure 2-4-9: Planning Distances between Groupings Within the Tactical March Formation

143. **Order of March—Brigade Main Body.** The relative placing of manoeuvre units and artillery will vary greatly with circumstances. Some general principles still apply, however. If the brigade is advancing on the division or CA Corps main axis, the division or CA Corps assets, such as DAG/CAG would be moving forward within that particular brigade. Similarly, if the brigade faced significant water obstacles in its advance, then it would be augmented by extra assault crossing and bridging assets, which would travel well forward within the formation. In addition, the following principles still apply:

- a. **Brigade Forward CP.** Usually moves at or near the head of the column in between the Main Guard and the head of the Main Body, always on the main axis.

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- b. **Brigade Main CP.** Moves on the main axis (usually after the artillery).
- c. **Artillery.** Generally moves well forward so that it offers timely support to the advanced units.
- d. **AD.** Distributed throughout march columns so that on deployment they will cover the whole unit.
- e. **Rear Services.** Most of the rear services come at the tail of each column. Some medical/recovery elements may be distributed throughout the column.
- f. **AT.** Elements of AT are grouped with an Engineer (MOD) and placed in flanking unit.
- g. **Light Infantry Battalion.** The Light Infantry Battalion (not found in MDs), normally moves to the rear of the column on the main axis and acts as an Anti-Landing Reserve (ALR).

144. **Tactical March Formation Examples.** Figures 2-4-10, 2-4-11 and 2-4-12 show examples of the type of Tactical March formations which may be deployed by TRIPLE COMPACT for CA, motorized and armoured brigades. They are ONLY examples, as there are many different combat groupings that could be used by a TRIPLE COMPACT Commander.

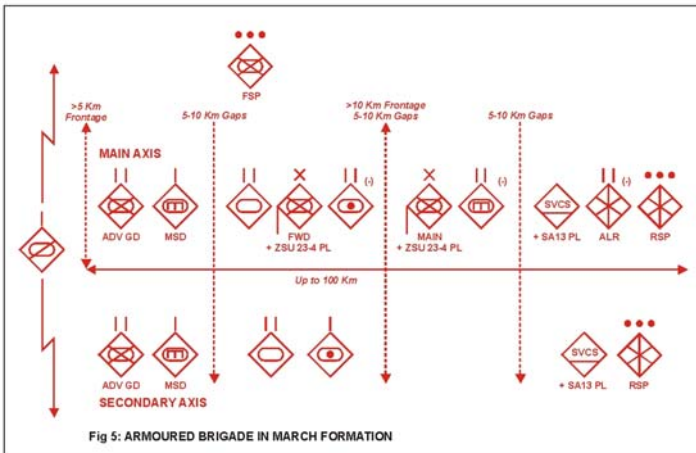


Figure 2-4-10: Armoured Brigade in March Formation

NOTES

1. In the example, two routes are being used: a main route to the NORTH and a subsidiary route to the SOUTH.
2. Flank, Rear Security and motorized/tank battalion/BG formations can all be altered to match the tactical situation, i.e., three up, one up, wedge, echelon LEFT/RIGHT, etc.
3. Battalions are very likely to be organized into BGs with a mix of motorized infantry, tanks and engineers.
4. Division assets will be assigned to a brigade on the Division Main Effort, such as a DAG and additional engineers, AD.
5. Note the reduced frontages for these brigades.

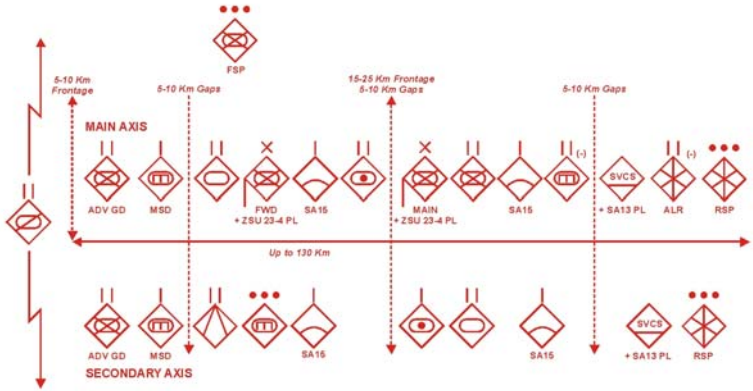


Figure 2-4-11: CA Brigade in March Formation

NOTES

1. In the example, two routes are being used: a main route to the NORTH and a subsidiary route to the SOUTH.
2. Flank, Rear Security and CA battalion formations can all be altered to match the tactical situation, i.e., three up, one up, wedge, echelon LEFT/RIGHT, etc.
3. CA Corps assets will be assigned to a brigade on the Corps Main Effort such as a CAG and additional engineers, AT and AD.

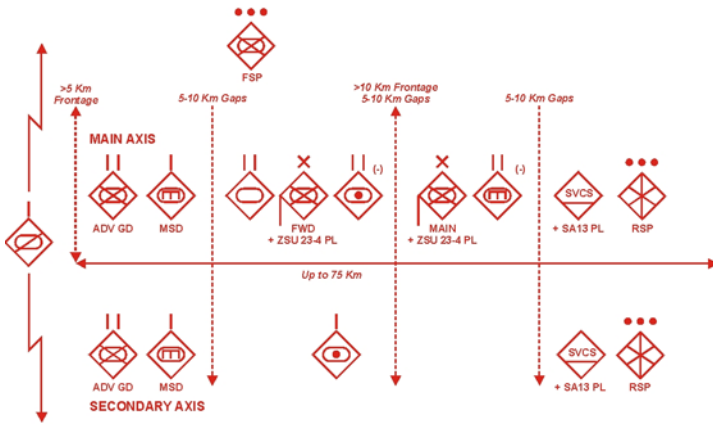


Figure 2-4-12: MR Brigade in March Formation

NOTES

1. In the example, two routes are being used: a main route to the NORTH and a subsidiary route to the SOUTH.
2. Flank, Rear Security and motorized/tank battalion/BG formations can all be altered to match the tactical situation, i.e., three up, one up, wedge, echelon LEFT/RIGHT, etc.
3. Battalions are very likely to be organized into BGs with a mix of motorized infantry, tanks and engineers.
4. Division assets will be assigned to a brigade on the Division Main Effort, such as a DAG and additional engineers, AD.
5. Note the reduced frontages for these brigades.

145. **March Performance Characteristics.** Figures 2-4-13, 2-4-14, and 2-4-15 provide doctrinal data on the speed, distances and zones of advance a TRIPLE COMPACT Commander would hope to achieve. Once again, they are doctrinal aims and will in reality, vary considerably according to factors such as terrain, threat, and maintenance requirements.

	AVERAGE SPEEDS OF MARCH COLUMNS (Km per Hour)					
	Paved Roads		Dry Dirt Roads		Muddy, Hilly, Urban	
	Day	Night	Day	Night	Day	Night
Motorized Column	30-40	25-30	20-25	18-20	10-15	8-10
Mixed Column	20-30	14-20	15-20	12-15	10-12	1-8

Figure 2-4-13: Average Speeds of March Columns (km per hour)

NOTE

The average speed is 15-25 km per hour. Speed increases over open terrain and if threatened by PGMs. Speed decreases at night, in mud or dirt roads.

	DAILY MARCH PERFORMANCE (Km)		
	Paved Roads	Dry Dirt Roads	Muddy, Hilly, Urban
Motorized Column	250–300	180–300	80–180
Mixed Column	200–350	120–240	80–140

Figure 2-4-14: Daily March Performance (km)

NOTES

1. The intervals are normally 25–50 ms between vehicles, 50–100 ms between platoons and companies, 3-5 km between battalions, and 5–10 km between brigade-size group.
2. Rest halts are: Short halt 20–30 min every 2–3 hr.
3. Long halts 2–4 hr if forced march of 12–24 hr being conducted.

MARCH PERFORMANCE PARAMETERS/ASSAULT FRONTAGES/DEPTHS OF OBJECTIVES									
		CA Formations/Units				Armoured/Motorized Formations/Units			
		Corps	Bde	Bn	Coy	Div	Bde	Bn	Coy
Frontage of Advance (Km)		30–40	15–25	5–10	>5	20–30	>10	>5	N/A
Number of Routes		2–4	2	1–2	N/A	2–3	2	1	N/A
Assault Frontage		10–20	4–8	3–4	1–2	6–8	3–4	2–3	0.5–1.5
Depth of Objective	Immediate	50	20–25	6–8	1–2	20–25	6–8	2–3	0.5
	Subsequent	100	50–60	20–25	6–8	50–60	20–25	6–8	N/A

Figure 2-4-15: March Performance Parameters/Assault Frontages/Depths of Objectives

146. **Waiting Areas:**

- a. **General.** During long rest halts or when waiting for committal, units and formations occupy waiting or assembly areas. Deployment therein has to balance the conflicting needs of security from both air/missile and ground attack (e.g., by raiding detachments, including airborne). All-round defence is prepared. Troops are entrenched and, whenever time permits, vehicles and equipment are also dug-in, ideally with overhead cover to reduce signatures and give protection against sub-munitions (especially terminally-guided sub-missiles (TGSMs)); this is easy and quick, since many vehicles have self-entrenching devices, but others require engineer support. OPs and patrols are deployed to give warning of attack in any dimension or of contamination. Communications are by line and vehicle liaison wherever possible to increase operational security. Passive deception and concealment measures are executed by the brigade/divisional camouflage and deception (where grouped), and chemical defence companies. These deploy dummies, false radio nets and radars, corner reflectors and smoke pots in accordance with the brigade/divisional plan. Deception is organized at the operational level, centralization being necessary to avoid the risk of subordinate elements compromising the larger picture being painted for the enemy: this is especially important where false groupings are being created. TRIPLE COMPACT stresses that, to succeed, deception requires continuity. Such work is, of course, in addition to unit self-help camouflage.
- b. **Location of Waiting or Assembly Areas.** In view of the effectiveness of enemy ground surveillance, such areas will seldom be located nearer than 20–30 km from the line of contact and will often be twice that or more. The concealment offered by terrain is exploited to the fullest extent. Villages and towns are favoured because of their intrinsic IR signatures and ease of concealment and camouflage.

Woods too are valued, but TRIPLE COMPACT does not like to move more than about 200 m into a forest because of the danger of enemy use of incendiary munitions and the danger of tree knock down. Gullies and ravines offer the possibility of rapid creation of overhead concealment.

- c. **Size of Waiting or Assembly Areas.** Allowing for an interval of 1–1.5 km between companies, a Basic Forces battalion/BG waiting area will be 8–10 or more square km and a CA battalion will need 12–15 square km. Other major units require about two thirds of that area, though an artillery brigade will need almost three times as much and a material support battalion four times as much.

Unit or Formation	Terrain (square km)		
	Wooded	Normal	Open
Basic Forces Brigade	120–150	220–260	360+
Division/CA Brigade	150–200	250–300	400+

Figure 2-4-16: Dimensions of Formation Waiting or Assembly Areas

NOTES

1. Wooded = more than 30 % of 100 square km being wooded.
2. Normal = 10–30 % of 100 square km being wooded.
3. Open = less than 10 % of 100 square km being wooded.

**SECTION 18
ATTACK**

147. **Forms of Tactical Action.** At the tactical level, there are basically four forms of action (see Figure2-4-17):

- a. **Frontal (Splitting) Attack.** This is usually the least favoured form of attack as it is predictable. It is employed where there is no alternative or where

TRIPLE COMPACT's superiority is so marked that the enemy can be overcome with little difficulty. Ideally, the main move is delivered against a relatively weak sector or on a boundary. Splitting attacks are designed to divide the enemy grouping into non-cohesive fragments so that they cannot properly coordinate their actions in a timely fashion.

- b. **Shallow Envelopment (Outflanking).** The main attack is delivered to a (usually weak) flank with the aim of rolling up the defence.
- c. **Deep Envelopment (Turning Movement).** The shallow envelopment is designed to destroy the forces along the line of contact immediately. If, however, the enemy has reserves capable of intervening straight away it is considered expedient to defeat these before, or preferably simultaneously with launching rear attacks on the main defending forces.
- d. **Double Envelopment (Encirclement).** Tactical formations, let alone units, will rarely be strong enough to encircle a significant enemy grouping by themselves. Two may combine to execute such a manoeuvre.

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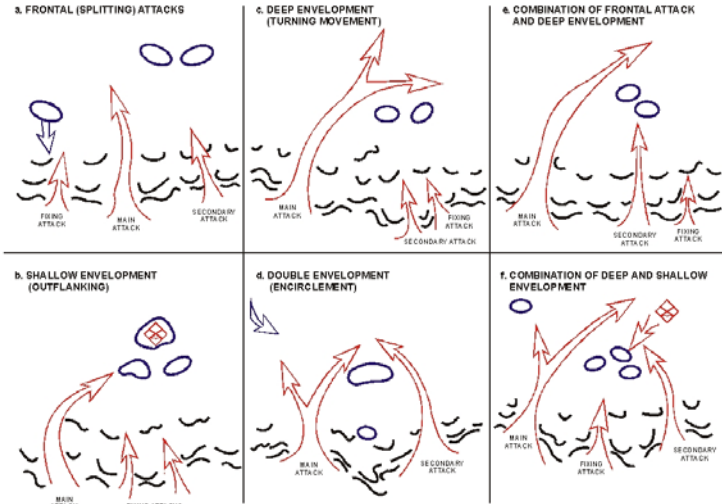


Figure 2-4-17: Forms of Tactical Manoeuvre

TYPES OF ATTACK

148. There are four principle types of attack in TRIPLE COMPACT (the type of attack is defined in terms of the enemy's tactical position):

- a. **Attack from the Line of March.** Such an attack is executed by a force which has not been in direct fire contact with the enemy beforehand. It is mounted against a defending enemy, usually from an assembly area in the depth, but it is increasingly likely to happen unexpectedly in the fluid conditions of future war. In either case, there is no pause in an attack position. The troops flow directly from march into pre-battle and thence battle formation. The enemy force could have been positively and accurately located by STA assets (in CA units/formations), in which case this is effectively a deliberate attack from an assembly area in depth.
- b. **Attack from a Position of Close Contact.** This attack is conducted by a force already in close contact with the enemy. TRIPLE COMPACT

believes it will be less frequent than attacks from the march in future war, when manoeuvre will predominate. On tomorrow's battlefield, it will most likely occur when a force that has failed in an attack from the march is ordered to renew the attack.

- c. **Meeting Battle/Engagement.** A meeting battle or engagement is an attack on an enemy who is also on the offensive. TRIPLE COMPACT believes that this will be the most common form of combat on the manoeuvre-dominated, ever-changing battlefield of the next war.
- d. **The Pursuit.** This is an attack on an enemy attempting to withdraw in order to disrupt and destroy him.

OBJECTIVES

149. Objectives for TRIPLE COMPACT are generally lines on a map, similar to phase lines, and not keyed on terrain. The objective for a TRIPLE COMPACT attacking force is to destroy the enemy between itself and its objective. The two types of objectives are immediate and subsequent. When a subsequent objective is met, the attacking force is then given a direction to continue the attack by higher headquarters. Depths for objectives at Table 9.

ECHELONING

150. TRIPLE COMPACT can attack in two echelons when the enemy is defending in depth and while attacking on TRIPLE COMPACT's main axis (with brigades and many battalions comprising of at least four subordinate manoeuvre units, the principle used is FIX, ASSAULT, EXPLOIT, RESERVE. One unit is used to fix, one or two to strike with another to exploit in echelon, leaving one unit in reserve. The first echelon unit(s) mission is to achieve the immediate objective. When this is achieved, the commander may commit the second echelon unit to attack towards the subsequent objective. TRIPLE COMPACT is not tied to using two echelons and will use a one-echelon formation when attacking along two axes

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simultaneously or when the force ratios suit him to do so. The TRIPLE COMPACT commander must keep a CA reserve at all times. TRIPLE COMPACT will commit the second echelon only to reinforce success and not as a replacement for the first echelon. The second echelon will be committed through gaps between the first echelon units or around a flank. Forward passage of lines is rarely used, and is avoided by TRIPLE COMPACT commanders. The second echelon will be well supported by artillery, air and smoke when committed.

151. **Tactical Exploitation Echelons.** At the tactical level, exploitation echelons are used to unhinge the defence, attack key targets and destroy the cohesion of the defence. Thus, tactical exploitation echelons pave the way for the subsequent committal of operational level exploitation groupings, which will convert tactical success into operational success. Four principle types of tactical exploitation echelons are:

- a. **Raiding Detachment.** A Raiding Detachment is a BG, inserted into the depth of the enemy, to **destroy** and **disrupt** enemy C2, Reserves, Artillery, AD and other targets.
- b. **FD.** FDs are organized at division/brigade level and usually comprise of a BG, with the mission to penetrate deep into the enemy's rear and seize key terrain or targets (e.g., river crossing points, nuclear delivery means, fuel dumps, or link-up with air assault detachments).
- c. **Outflanking Detachment.** Outflanking Detachments are formed at division/brigade level. These are companies or BGs, formed to carry out a shallow attack on the enemy's flank or rear.
- d. **Air Echelon.** Air Assault Troops have missions similar to the other echelons above and are used when penetration of the enemy's depth on the ground is not possible.
- e. **Reserves.** The difference between an echelon and a reserve as far as TRIPLE COMPACT is concerned, is that reserves do not receive specific missions

when a battle is planned. They are created with an eye to increasing the offensive effort, reinforcing or even replacing elements of the first echelon, undertaking missions unforeseen that always arise, often suddenly, during the course of an operation. TRIPLE COMPACT forms six different types of reserve, though not all may be created for every battle.

- (1) **Tactical Reserve.** At division/brigade level, and even at battalion level where there are four manoeuvre units, the commander will always form a tactical reserve. It will differ from the echeloning units in not being pre-tasked, as its mission is essentially unforeseeable. In an infantry company, the support weapons platoon can provide fire support, two platoons can attack in two echelons (one up) or in one echelon (two up), leaving the third platoon in reserve.
- (2) **Airmobile Reserve.** Even at the tactical level, it is usual to form an airmobile reserve. This will almost always be the divisional or brigade light infantry battalion or elements thereof (not found in MDs). This may be used to seize vital ground in the enemy's depth, execute raids, conduct vertical envelopment, help to counter enemy air-landings, and form or reinforce a flank detachment or group.
- (3) **ATR.** Mobile Forces (LEMG0 1 CA Corps) have AT units at corps (2 x battalions), brigade (battalion) and battalion (company) level. Within Basic Forces, divisions have an AT battalion, brigades have an AT company and battalions have AT platoons. These are used at formation unit level to repel counter-attacks and/or provide flank security. They also have some capability

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for dealing with enemy air landings. ATR units provide an economy of force grouping that can deal with developing armoured threats, without having to weaken an attack echelon or CA reserve and thereby compromise its viability.

- (4) **MOD.** These are engineer groupings with rapid minelaying, ditching and other obstacle creating means. ATR are normally supported by a MOD.
- (5) **ALR.** The enemy will, like TRIPLE COMPACT, mount airmobile and air assault raids on deep fire resources, headquarters, etc., and may attempt to disrupt the actions of second echelons/reserves, with air delivered forces. To cope with such threats, all formations create an ALR to deal with those elements that succeed in penetrating ADs. This is usually based on the light infantry battalion.
- (6) **Special Reserves.** TRIPLE COMPACT formations usually create recce, AD and engineer, chemical defence and medical reserves. These are usually employed to reinforce efforts on the main axis and/or to cope with unforeseen problems.

PLANNING FACTORS

152. **Frontages.** TRIPLE COMPACT will attack on a broad front and narrow for the final assault. Frontages are at Table 9.

153. **Axes.** In planning an attack, a TRIPLE COMPACT commander will always designate an axis of main effort. He will concentrate the bulk of his effort on this axis to ensure that he obtains the force ratio required to guarantee success.

154. **Surprise and Deception.** The more powerful weaponry becomes the more emphasis TRIPLE COMPACT places on the need to achieve surprise. This becomes particularly true where TRIPLE COMPACT does not enjoy the desirable level of superiority in numbers, when surprise is seen to compensate for a degree of deficiency. Tactical and operational regulations, remind commanders of the mandatory requirement for every plan for battle to contain measures to conceal their own forces' locations and intentions, and to deceive the enemy. TRIPLE COMPACT sources discuss several means of achieving these aims.

- a. **Selection of the Attack Sector.** In the past, TRIPLE COMPACT sought to deliver its main move to the weakest part in the enemy's front, in poor defensive regions or between unit boundaries. This often meant attacking where the terrain was deemed unsuitable, on the basis that the best going for an armoured thrust is an area weak in AT weapons. While these are still favoured, TRIPLE COMPACT now also considers the possibility of achieving surprise by attacking a strong sector. Powerful fire strikes followed by attacks from the rear (made possible by vertical envelopment), as well as from the front, can result in penetration of sectors previously deemed unassailable.
- b. **Concentration Areas and Forward Routes.** Modern surveillance means that attack groupings must be well concealed in dispersed assembly areas, before the delivery of the move. These need to be 20–30 km from the line of contact. Concealment moving into and in occupation of assembly areas is vital, and waiting time should be minimal. Bad weather, terrain, or reflective devices may be employed, to mask the enemy in its real and dummy locations and routes to the line of contact.
- c. **Waiting Areas.** During long rest halts or when waiting for committal, units and formations occupy waiting areas. All round defence is prepared with a balance between AD and security. Electronic signals are kept to a minimum, and the camouflage and deception companies (only found in CA

brigades) execute passive deception and concealment measures. Due to the effectiveness of ground surveillance, such areas are not located closer than 20 km from the line of contact. Villages and towns are favoured due to their intrinsic IR signatures and ease of concealment. Woods are favourable too, especially as concealment from enemy attack aviation; however, TRIPLE COMPACT will not move more than 200 m into a wood because of the danger of enemy use of incendiary munitions and tree move down. Gullies and ravines offer the possibility of rapid creation of overhead concealment.

155. **Force Ratios.** TRIPLE COMPACT considers the following to be the optimum correlation of forces to achieve success:

- a. **The Main Attack.** A 5–6:1 superiority in tanks and IFVs.
- b. **A Secondary Attack.** A 3:1 ratio.
- c. **A Pinning or Deception Attack.** A ratio of 1:1 is adequate to give the impression of a serious attack.
- d. **Passive Sectors.** TRIPLE COMPACT will accept risk in these sectors to a 1:2 ratio in order to create sufficiently favourable ratios in principal attack sectors.

ATTACK FROM THE LINE OF MARCH

156. **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 practiced by TRIPLE COMPACT, 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 and engineer support, movement control and intelligence. A somewhat 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 TRIPLE COMPACT vanguard might attempt to overrun an enemy rearguard in a hastily-prepared position by an attack directly from the march. However the TRIPLE COMPACT commander would still have to believe that he had a sufficient superiority of force.

157. **Preparation of the Attack.** Preparation of the attack begins in an assembly area which should at least be outside the effective range of most enemy artillery (i.e., 20–30 km and often as much as 60–80 km deep in friendly territory). Some engineer preparation of the area is desirable, to improve routes and provide protection for equipment and personnel. Final maintenance and resupply will be conducted and units and sub-units will be regrouped tactically in accordance with their commanders' plans. Strict camouflage and concealment discipline will be enforced and radio silence maintained (electronic silence will not normally be imposed since it negates the usefulness of sensor assets, so secure data links will remain open and only voice radio silence imposed). The camouflage and deception company may well be tasked to prepare a dummy assembly area nearby (with some real troops to lend credibility to it and some electronic sensors) and the chemical defence company will prepare bispectral smoke concentrations for use in the event of air attack.

158. **The March Into Battle.** Being very much aware of the high risk of being discovered in the final approach to the defence, and of the many fixed and rotary wing air and rocket and gun artillery assets that can rapidly emplace remotely delivered minefields and deliver powerful fire strikes, as much work as time will allow will go into preparing the march.

- a. **Engineers.** Engineer, Camouflage and Chemical Defence Troops will move out well before the rest of the formation. Working together with any assets assigned by the senior commander from both his own resources and those of the formation through which the march is conducted, these will prepare the march routes. Passages through difficult terrain (valued for the concealment it offers) will be

improved. Exposed sectors will be concealed from optical, IR and radar observation and bispectral smoke pots will be emplaced to cover them and possible choke points liable to be attacked. Minefield clearing means may also be deployed where RDMs would be most likely to cause delay. As the time for the arrival of the attacking forces at their line of going over to the attack approaches, troops already in contact will clear gaps through their own and perhaps enemy obstacles and create smoke screens on the attack sectors and to their flanks (probably including deception ones as well). At the same time as engineer and concealment preparations are started, traffic control elements will mark routes and establish control posts at choke points and obstacle crossings.

- b. **AD.** The AD of the march will be worked out by the senior commander. Ideally it will be accomplished entirely or largely using his assets and those of the formation in contact, but some of the attacking forces' means may also need to be pre-deployed to cover sections of the march routes.
- c. **Artillery and EW.** Artillery and EW Units will deploy next. They need to occupy their fire positions and EW sites at least one to two hr before the electronic-fire preparation is due to begin, and even before that, their positions need to be recce'd and, usually, prepared by engineers and covered by AD elements and smoke generators. When the main body starts its forward move, missiles, EW, artillery and air attacks will begin suppression of enemy deep fire capabilities and associated C3 and AD. The emphasis in the electronic-fire preparation will shift to enemy forces about to be attacked (and to deception strikes) as the assault groupings approach the line of going over to the attack.
- d. **Air Assault or Landing Elements.** Air Assault or Landing Elements will often be inserted rather before or at the moment of going into the attack to block the movement of enemy reserves, conduct

raids against high value targets and begin attacks on the rear of centres of resistance. The Assault Troops of the First Echelon will move out of the assembly area in accordance with a timetable designed to bring them to the line of attack at H-hour. Their normal rate of movement will be 15–20 km per hour on two to three routes with one to two reserves (formation level).

159. **Deployment for the Attack—MD.** Figure 2-4-18 illustrates an attack by an MD as the first echelon of an offensive against a main defensive position. The diagram, and the following description, give a concrete example of themes dealt with earlier.

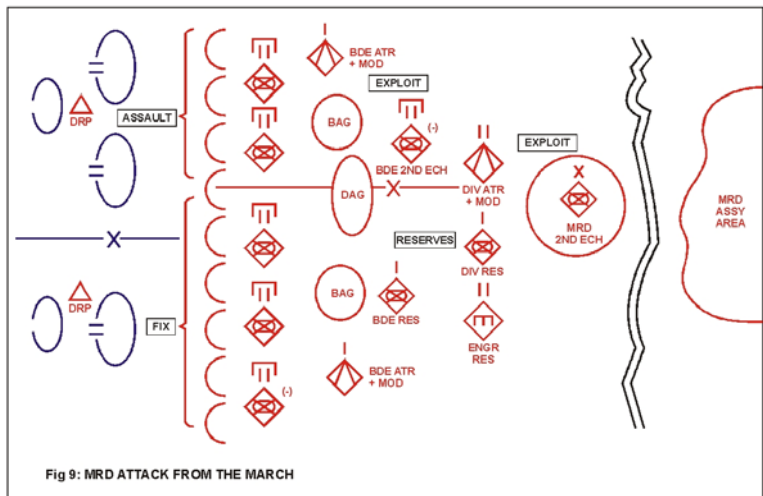


Figure 2-4-18: MRD Attack from the March

- a. **Boundaries.** The MD starts from a dispersed assembly area in the depth. It converges on the assault sector as late as possible. The breakthrough of the first echelon of the defence, will take place on a narrow frontage, but boundaries will widen again for action in the enemy's depth (i.e., after the forward battalions and brigades are penetrated) to allow the possibility of tactical manoeuvre.
- b. **Echelonning.** The assault is mounted by a motorized brigade in one or two echelons. Each battalion in

the assault will also attack in one or two echelons. The fix, executed by the second motorized brigade of the MD, is in a single echelon on a wider frontage, with a company level reserve. Here too, however, the attacking motorized battalion, which borders on the main attack, will be in two echelons, the one on the left flank which has provided the reserve, being in a single echelon. The units on the assault sectors will be expected to penetrate through to depth of the enemy forward brigades, while the fixing attack only hold the forward battalion positions in place. The MD has a motorized brigade in its second echelon to exploit. These forces will exploit and help to carry the battle through to the depth of the defending divisions on a widening frontage after the forward brigades are defeated. *Note that the figure does not show the numerous possibilities for the assault force to manoeuvre in the attack.*

- c. **Fire and EW Support.** Direct fire support will be given by the troops already in contact, probably augmented by elements temporarily detached from the ATRs. In the MD, first echelon brigades will form BAGs, with the possibility of some artillery being decentralized from division. In the given example, on the assault sector, the BAG could be of three battalions (one organic and the 2S3 and D20 battalions from division) and on the fix sectors the BAG will have their one organic battalion only. In the first case, one battalion would be in direct support of each first echelon motorized battalion and one used to engage deeper targets as ordered by the brigade commander. In the fix sector, the battalion would concentrate their fires in support of the CENTRE and RIGHT flank fixing battalions, but could be shifted to deep fires on order of the brigade commander. The DAG will comprise the organic MBRL battalion. These groups will be used for limited deep fires prior to the assault, then to thicken fires on defending strong points during the preparation, then again for deep fire missions. During the assault, it will be necessary, through a

combination of fire and smoke, to neutralize two defensive positions simultaneously (i.e., to a depth of 5–6 km) to prevent ATGM in the depth from writing down assault groupings. Moreover, the high effectiveness of modern weapons requires the suppression of higher proportions than hitherto. TRIPLE COMPACT holds that it must suppress 70–75 % of defending AT weapons and up to 100 % of precision delivery systems and C2 facilities. EW assets from higher will be deployed well forward, to provide targeting data and, at crucial times (especially the start of the attack) jamming of enemy communications.

- d. **AD.** The corps level AD will give area coverage for the MD, concentrating particularly on defending the first echelon, the divisional and brigade headquarters and the artillery groups; some short range elements could reinforce the first echelon to ensure adequate cover for both attacking troops and their supporting artillery and C2.
- e. **AT.** Elements will be used initially for direct fire support, rejoining the ATRs as the attack moves forward. ATRs and MODs at each level are ready to move forward, either behind the attack or to a flank to break up any counter–attacks and provide a pivot for manoeuvre to destroy the counter–attacker.
- f. **Engineers.** Those elements of the engineer battalions not used to supplement lower level resources in obstacle breaching, route preparation and MOD tasks will be held as an engineer reserve.
- g. **Chemical Defence.** Smoke generating elements will be used to support the main assault and artillery groups, AD assets and CPs, with decontamination assets held back as a chemical defence reserve.
- h. **Recce.** Elements of the recce battalion and brigade recce companies, will have been used before the outset to thicken the web of OPs established by

troops in contact, and of the first echelon, to provide targeting data for the fire preparation. As infiltration through a dense defence will be difficult until the defence is disrupted, the bulk will be held back as a recce reserve, for committal as the battlefield opens up. Until then, only the division’s long-range company will be able to deploy (possibly by air), usually in the depth of the tactical zone of defence.

160. **Deployment for the Attack—Armoured Division.**

Figure 2-4-19 illustrates an attack by an armoured division as the first echelon of an offensive against a main defensive position. The diagram, and the following description, give a concrete example of themes dealt with earlier.

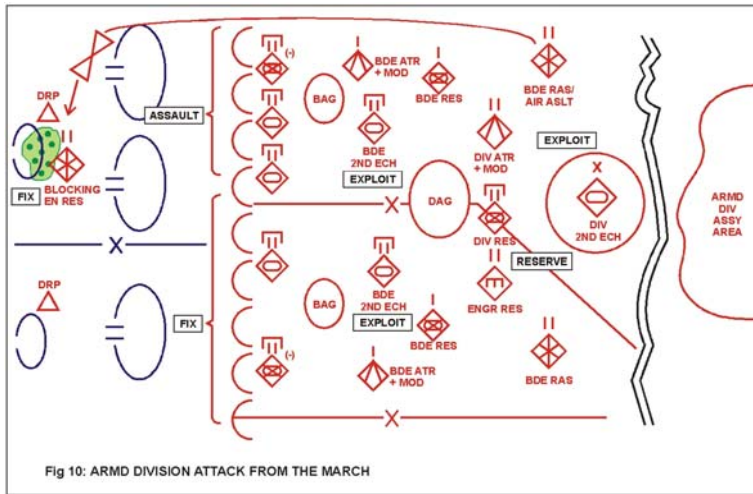


Figure 2-4-19: Armd Division Attack from the March

- a. **Boundaries.** The armoured division starts from a dispersed assembly area in the depth. It converges on the assault sector as late as possible. The breakthrough of the first echelon of the defence, will take place on a narrow frontage, but boundaries will widen again for action in the enemy’s depth (i.e., after the forward battalions and brigades are penetrated) to allow the possibility of tactical manoeuvre.

- b. **Echelonning.** The main **assault** is mounted by an armoured brigade in one or two echelons, with a company level reserve. Each battalion/BG in the assault will also attack in one or two echelons. The **fix**, executed by the second armoured brigade, is in two echelons, but on a wider frontage, with a company level **reserve** and its light infantry battalion as rear area security. Here too, however, the fixing battalion/BG, which borders on the main assault, will be in two echelons, the one on the LEFT flank, which has provided the **reserve**, being in a single echelon. The units on the main assault sector will be expected to penetrate through to Air Mobile Landing Elements in the depth of the enemy forward brigades, while the fixing attacks will only hold the forward battalion positions in place. The division has an armoured brigade in its second echelon to exploit, and a battalion/BG as its reserve from the fixing brigade. The second echelon will exploit and help to carry the battle through to the depth of the defending divisions on a widening frontage after the forward brigades are defeated. The RIGHT forward brigade has earmarked its light infantry battalion for an Air Mobile landing to block enemy reserve units moving forward to counter-attack. *Note that the figure does not show the numerous possibilities for the assault force to manoeuvre in the attack.*
- c. **Fire and EW Support.** Direct fire support will be given by the troops already in contact, probably augmented by elements temporarily detached from the ATRs. In the armoured division, first echelon brigades will form BAGs with artillery possibly being decentralized from division. In the given example, on the main assault sector, the BAG could be of two battalions (one organic and the 2S5 battalion from division) and on the fix sector the BAG will have one organic battalion. In the first case, the organic battalion would be in direct support of the first echelon battalions/BGs and the 2S5 battalion used to engage targets as ordered by the brigade commander. In the fixing attack, the

battalion would concentrate their fire in support of the assault battalions, but could be shifted to deep fires on order of the brigade commander. The DAG will comprise the organic MBRL battalion. This group will be used for deep fire missions throughout. The offensive being the corps' main effort, a CAG of one or two heavy MBRL battalions, are available for further deep fire strikes. TRIPLE COMPACT believes that, given the increasing ranges of both direct and indirect fire systems preparatory and supporting fire plans must be in great depth (up to 25 km). During the assault, it will be necessary, through a combination of fire and smoke, to neutralize two defensive positions simultaneously (i.e., to a depth of 5–6 km) to prevent ATGM in the depth from writing down assault groupings. Moreover, the high effectiveness of modern weapons requires the suppression of higher proportions than hitherto. TRIPLE COMPACT holds that it must suppress 70–75 % of defending AT weapons and up to 100 % of precision delivery systems and C2 facilities. EW assets from higher will be deployed well forward to provide targeting data and, at crucial times (especially the start of the attack) jamming of enemy communications.

- d. **AD.** The corps level AD will give area coverage for each formation, concentrating particularly on defending the first echelon, the divisional and brigade headquarters and the artillery groups; some short range elements could reinforce the first echelon to ensure adequate cover for both attacking troops and their supporting artillery and C2.
- e. **AT.** Elements will be used initially for direct fire support, rejoining the ATRs as the attack moves forward. ATRs and MODs at each level are ready to move forward either behind the attack or to a flank to break up any counter-attacks and provide a pivot for manoeuvre to destroy the counter-attacker.

- f. **Airmobile Elements.** In this example, the light infantry battalion of the right forward assault brigade is used to increase the tempo of the penetration, by blocking the move forward of enemy reserve units. Corps level air assault could also be used, either for raiding or for seizing ground of importance to manoeuvre towards the rear of the tactical zone of defence. Committal would, of course, be preceded by artillery and air SEADs. Long-range artillery and MBRLs can also give fire and remote mining support.
- g. **Engineers.** Those elements of the engineer battalions not used to supplement lower level resources in obstacle breaching, route preparation and MOD tasks will be held as an engineer reserve.
- h. **Chemical Defence.** Smoke generating elements will be used to support the main attacks and artillery groups, AD assets and CPs, with decontamination assets held back as a chemical defence reserve.
- i. **Recce.** Elements of the recce battalion and brigade recce companies, will have been used before the outset to thicken the web of OPs established by troops in contact, and of the first echelon to provide targeting data for the fire preparation. As infiltration through a dense defence will be difficult until the defence is disrupted, the bulk will be held back as a recce reserve, for committal as the battlefield opens up. Until then, only the division's long-range company will be able to deploy (possibly by air), usually in the depth of the tactical zone of defence.

161. **Deployment for the Attack—CA Brigade.** Figure 2-4-20 illustrates an attack by a CA brigade as the first echelon of an offensive against a main defensive position. The diagram, and the following description, give a concrete example of themes dealt with earlier.

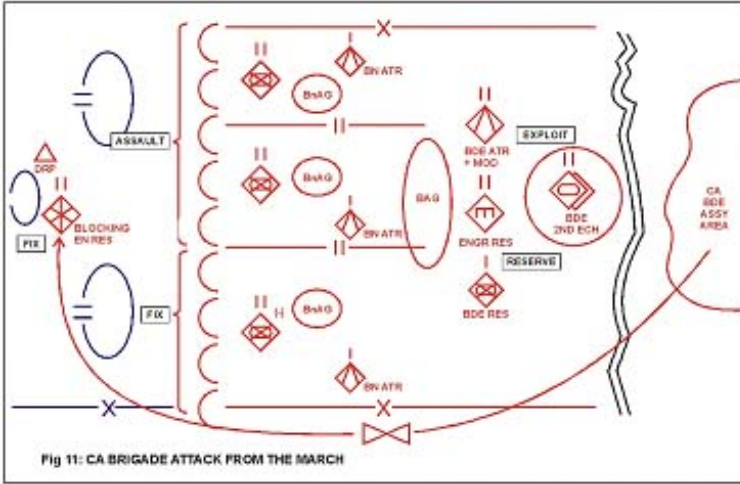


Figure 2-4-20: CA Brigade Attack from the March

- a. **Boundaries.** The CA brigade starts from a dispersed assembly area in the depth. It converges on the assault sector as late as possible. The breakthrough of the first echelon of the defence will take place on a narrow frontage, but boundaries will widen again for action in the enemy's depth (i.e., after the forward battalions and brigades are penetrated) to allow the possibility of tactical manoeuvre.
- b. **Echeloning.** The main **assault** is mounted by two mechanized CA battalions in one or two echelons. Each battalion in the main assault will also attack in one or two echelons. The **fix**, executed by a third mechanized CA battalion, is in a single echelon on a wider frontage and provides a company as the brigade **reserve**. The units on the main assault sector will be expected to penetrate through to Air Assault or Landing Elements in the depth of the enemy forward brigades, while the fix will only hold the forward battalion positions in place. This CA brigade has two armoured CA battalions in its second echelon for **exploitation**. These forces will help to carry the battle through to the depth of the defending divisions on a widening frontage after the

forward brigades are defeated. The CA brigade has also earmarked a light infantry battalion for an Air Mobile operation in order to block the movement forward of enemy reserve units. *Note that the figure does not show the numerous possibilities for the assault force to manoeuvre in the attack.*

- c. **Fire and EW Support.** Direct fire support will be given by the troops already in contact, probably augmented by elements temporarily detached from the ATRs. In the CA brigade, first echelon battalions have their integral BnAGs, which could be supported by 2S19 howitzer battalions from the brigade artillery regiment. The BAG will comprise the organic MBRL battalion and up to three 2S19 howitzer battalions, dependant on how many are pushed forward to BnAGs. The MBRL battalion will be used for deep fire throughout. The offensive being the CA corp's main effort, a CAG of 2–3 heavy MBRL battalions could be available for additional deep fire strikes. TRIPLE COMPACT believes that, given the increasing ranges of both direct and indirect fire systems preparatory and supporting fire plans must be in great depth (up to 25 km). During the assault, it will be necessary, through a combination of fire and smoke, to neutralize two defensive positions simultaneously (i.e., to a depth of 56 km) to prevent ATGM in the depth from writing down assault groupings. Moreover, the high effectiveness of modern weapons requires the suppression of higher proportions than hitherto. TRIPLE COMPACT holds that it must suppress 70–75 % of defending AT weapons and up to 100 % of precision delivery systems and C2 facilities. EW assets (including reinforcements from army) will be deployed well forward to provide targeting data and, at crucial times (especially the start of the attack) jamming of enemy communications.
- d. **AD.** The formation level AD will give area coverage for each formation, concentrating particularly on defending the first echelon, the

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brigade headquarters and the artillery groups: some short range elements could reinforce the first echelon to ensure adequate cover for both attacking troops and their supporting artillery and C2.

- e. **AT.** Elements will be used initially for direct fire support, rejoining the ATRs as the attack moves forward. ATRs and MODs at each level are ready to move forward either behind the attack or to a flank to break up any counter-attacks and provide a pivot for manoeuvre to destroy the counter-attacker.
- f. **Airmobile Elements.** In this example, the light infantry battalion of the brigade is used to increase the tempo of the penetration by blocking the move forward of enemy reserve units. Corps level air assault could also be used, either for raiding or for seizing ground of importance to manoeuvre towards the rear of the tactical zone of defence. Committal would, of course, be preceded by artillery and air SEAD. Long-range artillery and MBRLs can also give fire and remote mining support.
- g. **Engineers.** Those elements of the engineer battalions not used to supplement lower level resources in obstacle breaching, route preparation and MOD tasks will be held as an engineer reserve.
- h. **Chemical Defence.** Smoke generating elements will be used to support the main attacks and artillery groups, AD assets and CPs, with decontamination assets held back as a chemical defence reserve.
- i. **Recce.** Elements of the recce company of each battalion will have been used before the outset to thicken the web of OPs established by troops in contact and of the first echelon to provide targeting data for the fire preparation. As infiltration through a dense defence will be difficult until the defence is disrupted, the bulk will be held back as a recce reserve, for committal as the battlefield opens up. Until then, only the brigade's long-range company

will be able to deploy (possibly by air), usually in the depth of the tactical zone of defence.

162. Deployment for the Attack—Basic Force Battalion/Battle Group Level.

a. **Organization.** Battalions in MDs only have three companies, whereas in armoured divisions they have four and in CA battalions they have five (excluding the light infantry battalions):

(1) **MDs.** If a battalion/BG attacks in two echelons, the first echelon will consist of at least two companies and the second echelon will be up to a company strong. If the battalion/BG attacks in one echelon, a reserve, consisting of at least one platoon, possibly a company, will be formed. A tank battalion/BG can expect to be reinforced by one motorized company and one of the three motorized battalions/BGs usually has one tank company under command. The tank battalion/BG normally allocates a motorized platoon to each tank company. However, the motorized battalion/BG generally uses the tank company at full strength with its first echelon. One tank platoon may be kept under the battalion/BG commander's hand as a reserve initially, or with the second echelon.

(2) **Armoured Divisions.** In armoured divisions, with four companies, battalions/BGs have much greater flexibility to create echelons and reserves. The light infantry battalions in each brigade are kept intact for specific operations. It is common for BGs to be formed as 'majority' BGs (e.g., a tank BG could have 3 x tank companies and one motorized company; an motorized BG could have one tank company and 3 x motorized companies), or any combination thereof.

- (3) **Motorized Battalions—Organic Fire Support.** A motorized battalion's organic fire support will be concentrated on the main axis. The mortar battery will deploy a km or so behind the first echelon. The AT platoon may be deployed to give direct fire support or else moves 500 m behind a first echelon company on the flank most exposed to enemy armour. The AD platoon moves behind the first echelon companies and is usually not far from the battalion CP.
- b. **Deployment Drills.** TRIPLE COMPACT employs a standard drill for deployment into battle, which is illustrated in Figures 2-4-21 (Motorized BGs) and 2-4-22 (Tank BGs). Figure 2-4-23 shows the deployment from various columns. The use of battle drills is stressed because they save time in the organization and execution of an attack, and success in modern battle is seen to depend on acting faster than the enemy can react, surprising him with the speed with which the move is delivered. While battle drills themselves can be stereotypical, they can be tailored to terrain and tactical circumstances and the commander can exercise skill and judgement in deciding where and when to initiate them and in the methods used to cover them; e.g., in the use of smoke, which is generally liberal. 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 (brigade 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 the concealment offered by the terrain and tactical considerations, as outlined below.
 - (1) **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 km from the enemy

FEBA). The artillery preparation and the start of the smoke programme of the attack are usually timed to begin as the attacking force reaches this line. However, given TRIPLE COMPACT's stress on avoiding stereotype and achieving surprise, a false start may well be practiced if time, ammunition and smoke resources allow it.

- (2) **Line of Deployment into Company Columns.** This line should be set outside the maximum range of the defender's ATGM, tanks and other direct fire systems (thus reaching 4–6 km from the enemy FEBA, depending on the terrain).
- (3) **Line of Deployment into Platoon Columns.** This should ideally be located in dead ground, screened particularly from the defender's short range ATGM. It will normally be 1.–4 km from the enemy FEBA.
- (4) **Line of Going Over to the Attack.** This is the line by which the attackers deploy into attack formation, line abreast, with tanks 100 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 AT weapons and small arms and permit a rapid advance into the enemy positions. It is usually at least 600 ms from the enemy FEBA but it may occasionally be farther out.
- (5) **Dismount Line.** In a dismounted attack (which is not the preferred method—see below) the dismount line is set as close as possible to the enemy trenches, if possible in some cover from small arms and short

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range AT weapons; 300 m from the enemy is a normal distance.

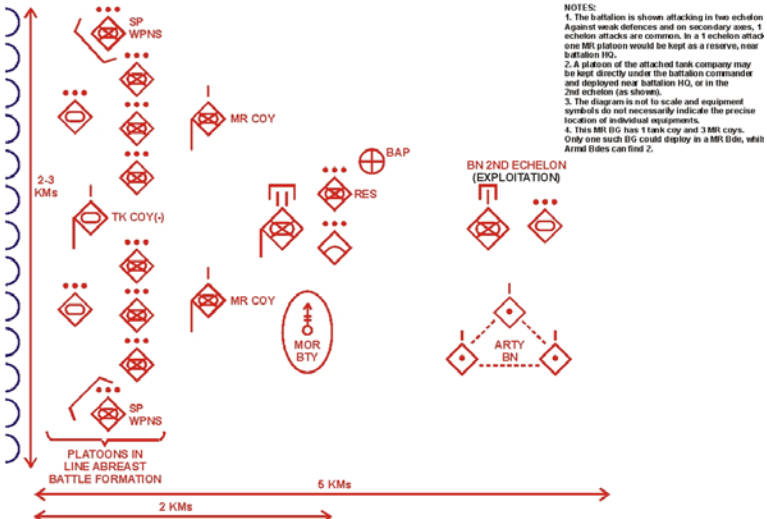


Figure 2-4-21: MR BG Attack Deployment

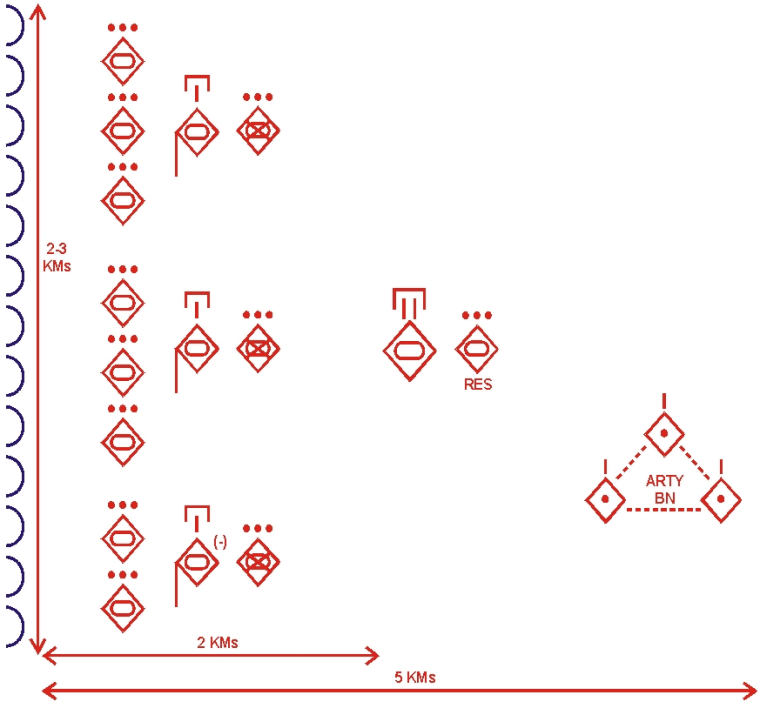


Figure 2-4-22: Tank BG Attack Deployment

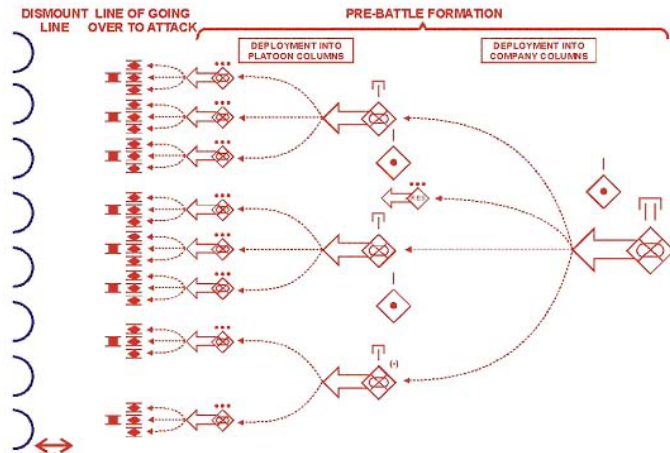


Figure 2-4-23: Battalion/BG Deployment from Columns

163. **The Execution of the Attack at Basic Force—Battalion/Battle Group Level.** See Figures 2-4-21, 2-4-22 and 2-4-23 above. Where such a frontal attack is needed to achieve penetration, the attack will be launched in such a linear fashion without conducting fire and movement within the battalion/BG. This is because the fire to cover the forward movement is provided by heavy artillery concentrations, and this requires a linear approach. TRIPLE COMPACT emphasizes the need for close coordination between the supporting artillery and the attacking troops. If the fire lifts too early, the enemy will have time to recover from the psychologically paralysing effect of bombardment, bring his weapons into action and inflict unnecessary casualties on the advancing sub-units, perhaps halting the attack. If it lifts too late, the attackers will run into their own artillery fire. Although motorized troops can dismount for the assault, wherever possible (e.g., against a weak and demoralized defender) they prefer to attack mounted. This increases the tempo of the attack from that of the soldier on foot (0.8–1 km per hour) to 3–4 km per hour. The speed and shock of an armoured overrun will reduce the enemy's ability to recover and fight back. Such an overrun can be supported by the artillery, which will suppress non-armoured targets by delivering flechette rounds onto the objective even as the tanks and IFVs are moving onto it. TRIPLE COMPACT believes that increasing the tempo of an attack by one and one-half times will reduce sub-unit losses by a factor of two or even three.

164. **Deployment for and Execution of the Attack—Mobile Force CA Battalions** CA battalions are steering away from standard battle drills, preferring instead to rely on their improved situational awareness, in order to manoeuvre and attack from a position of advantage, where rapid success can be guaranteed at the greatest tempo—their tactics are evolving much like the more modern NATO armies. CA battalions have even greater flexibility to **fix, assault and exploit**. No regrouping takes place (other than the possibility of artillery from brigade level) since all battalions have integral support in tanks, infantry, AD, recce, artillery, engineers and ATR. Possessing more than twice the combat power of their Basic Forces counterparts and with better training, CA battalions are expected to penetrate more deeply without the need for brigade to reinforce their efforts by committing more manoeuvre elements. For this reason, and for ease of C2, they are usually deployed in two echelons. There may be only one company of armoured or mechanized troops in the second echelon, but more often there will be two. Sometimes, e.g., when an enveloping attack is employed, a one to two platoon reserve will be

held instead of a second echelon. The reinforcing or cross-attaching of sub units into "combat teams" is routinely practiced. Most of the battalion's considerable organic fire support is concentrated on the main axis, though a battery of 2S31 may support a secondary axis. The AT battery either helps to shoot in the attack, moves behind the attack line on the most tank-threatened flank, or is held as a centrally placed ATR; it can, of course, deliver direct fire support and then become an ATR. The 2S6s of the AD battery commonly work in pairs with one pair protecting the attack line and the other pair covering an air-threatened flank, or protecting the main artillery area of deployment. The SA16s defend elements not covered by the 2S6s (or set up AD ambushes). CA battalions can use the same deployment drills as Basic Forces' sub-units. Figure 2-4-24 illustrates a typical assault formation.

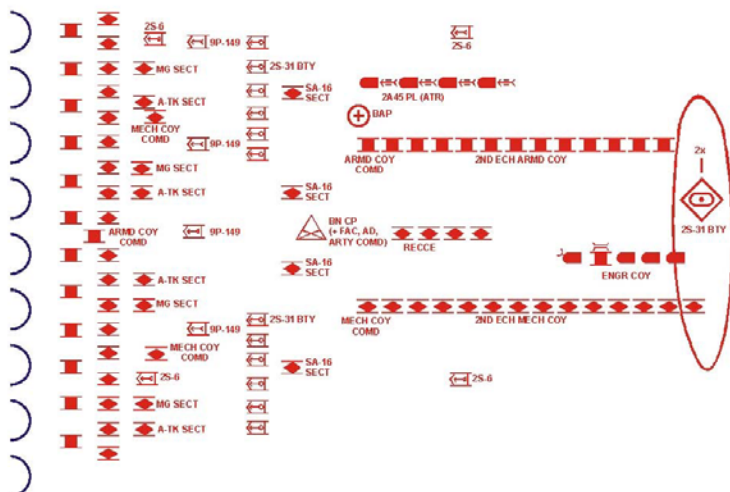


Figure 2-4-24: CA Battalion (2,3) Deployment in the Attack

165. **Obstacle Breaching.** TRIPLE COMPACT 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 IFVs, 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 used during the artillery preparation of the attack. Two methods may be used. Explosive hoses may be winched across the minefield or fired across by MTK

armoured vehicles or UR-88P pods. Artillery fire or FAE strikes can be employed to detonate mines. Normally one breach is required for each assaulting platoon. Tanks lead through the breach, followed by infantry in file along the tank tracks. IFVs provide covering fire. All available means will be used to cover the gaps with smoke.

Smokepots may be pre-positioned while breaches are prepared and vehicles may use their smoke grenade launchers as they approach the minefield. Meanwhile, artillery delivered smoke will blind known fire positions and OPs. It is normal to make extensive use of smoke to cover breaching actions, not only on the assault sector but also to its flanks and in deception sectors.

166. **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. IFVs follow by bounds, using folds in the ground to reach fire positions and cover their dismounted element. Alternatively, IFVs using their main armament may move in line with the dismounted 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.

167. **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 the enemy's depth, fire and manoeuvre tactics may be employed within battalions, companies and even platoons. At what level will depend on the enemy's strength and combat effectiveness and, crucially, on the scope and intensity of indirect and direct fire support and the availability of concealment for the advance, either natural or, in the case of smoke, man-made:

- a. Battalions and companies may use their support weapons and up to two thirds of their manoeuvre strength to deliver suppressive fire to enable the remainder to approach the enemy position. In this way, a sufficiently strong force to assault the enemy strong point will be worked forward by bounds to a position from which an assault can be executed. In finally closing with the enemy, it is rare for dismounted infantry to assault alone, with tanks merely giving fire support. TRIPLE COMPACT puts much stress on the morale effect, both on its

own troops and on those of the enemy, and on the synergistic effects, of armour and infantry troops overrunning the defence together.

- b. Infantry Platoons may work their way forward in section rushes, covered by the fire of the remainder of the platoon and IFVs and support weapons. Alternatively, and more usually, all sections will advance simultaneously using fire and movement. Each section is divided into two sub-sections of three and the commander and RPG operator. Within each "three", the RPK will cover a rush by the two riflemen, then vice versa. Each rush is of 5–6 sec, about 30–40 m, to present the defenders with hard targets. After the platoon is concentrated on a line not more than 100 m from the objective, the decisive assault is launched simultaneously.
- c. Trench and Bunker (pill box) 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. Flame-throwers and grenades are used to clear dug-outs. Bunkers and pill boxes are demolished by tank or artillery direct fire and infantry approach to clear the remains covered by machine gun fire. Grenades prepare the way for entry. Of course, while bunkers or pill boxes are being attacked, suppressive fire and smoke must be used to neutralize other position capable of giving mutual support.

THE ATTACK FROM A POSITION OF CLOSE CONTACT

168. **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 TRIPLE COMPACT 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 recce 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.

169. **The Combination of Types of Attack.** Obviously it is possible to combine the two types of attack on a defending enemy. Therefore, after an unsuccessful first attack from the march a division or brigade 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.

170. **Preparation of the Attack.** Detailed recce will take place and if observation and small raids do not provide the intelligence required, recce by battle may be organized. Additional artillery will be massed and ammunition dumped at firing positions. Indirect fire will be targeted against the enemy ISTAR and artillery assets. Engineer work is likely to include the preparation of routes and covered positions for vehicles close to start lines. Under cover of darkness, regrouping 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 motorized troops in the first echelon occupy waiting areas 5–7 k from the line of contact 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. Figure 2-4-25 illustrates an armoured division attack from a position of close contact.

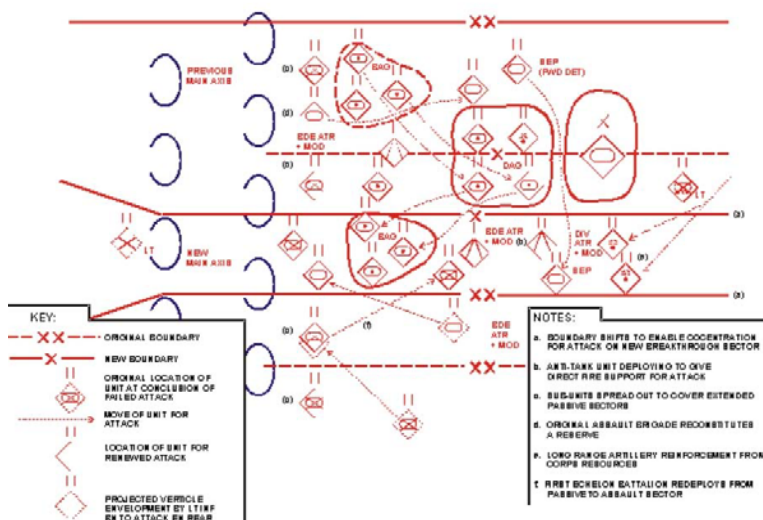


Figure 2-4-25: Armoured Division Attack from a Position of Close Contact

171. **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 infantry 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.

172. **The Battle in the Enemy Depth.** The emphasis in this phase of the attack is to maintain momentum. Points of resistance will be by-passed if possible. Units and sub-units are expected to advance unevenly but TRIPLE COMPACT 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, usually an ATR, supported by artillery and smoke, will isolate the enemy on the threatened flank while the main body manoeuvres further into the depth.

173. **Combat Formation in the Enemy's Depth.** After penetrating through the enemy's forward battalion strong points, it is possible that units will reform tactical march columns for a further

advance. This is most likely to happen when only a thin crust had to be overcome and the enemy has not had time to deploy significant reserves or prepare depth defensive positions. Where the enemy is stronger, however, it is likely that battalions will advance in some variant of pre-battle formation. Which one is selected will depend on the proximity of the enemy, his activeness (e.g., whether he is defending in depth positions or likely to counter-attack), the presence of open flanks (enemy and/or friendly) and the terrain. TRIPLE COMPACT's preference is to advance in tactical march columns or, where that is not possible, to adopt the pre-battle formation closest to it. This eases C2 and makes for a speedier advance. Figures 2-4-26, 2-4-27 and 2-4-28 illustrate some possible pre-battle forms of advance.

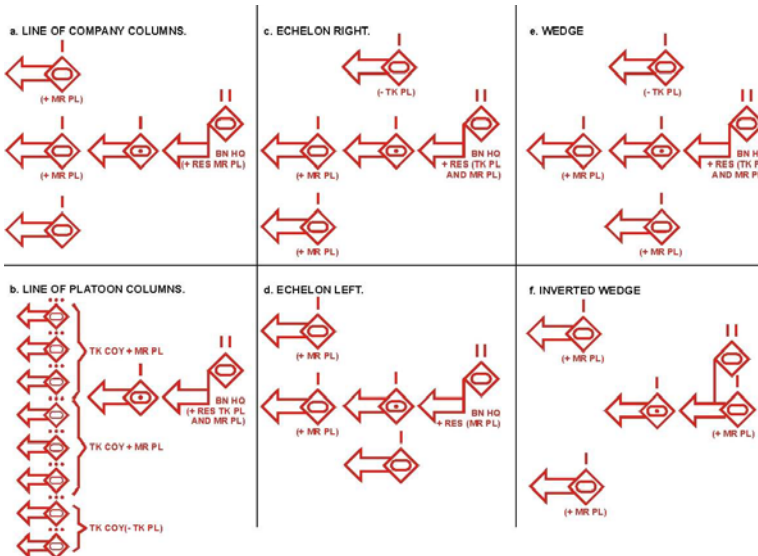


Figure 2-4-26: Alternate Pre-Battle Formations of a Tank Battalion/BG (Variants)

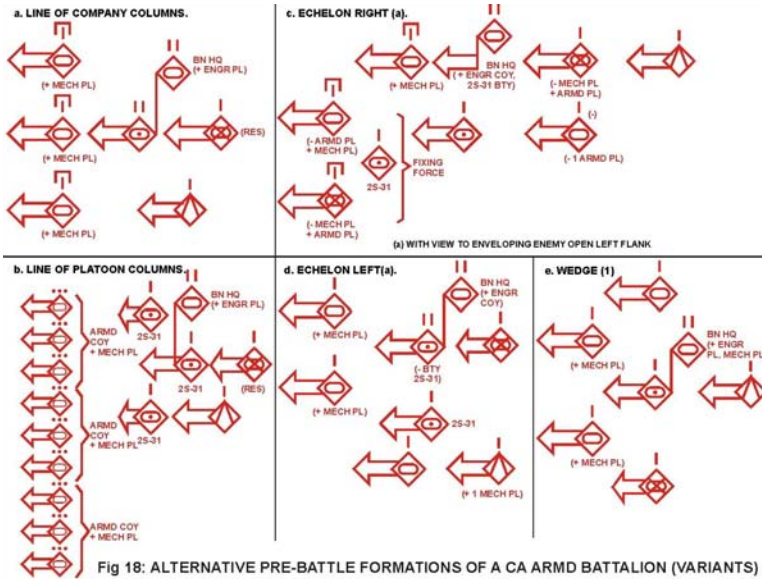


Figure 2-4-27: Alternative Pre-Battle Formations of a CA Armored Battalion (Variants)

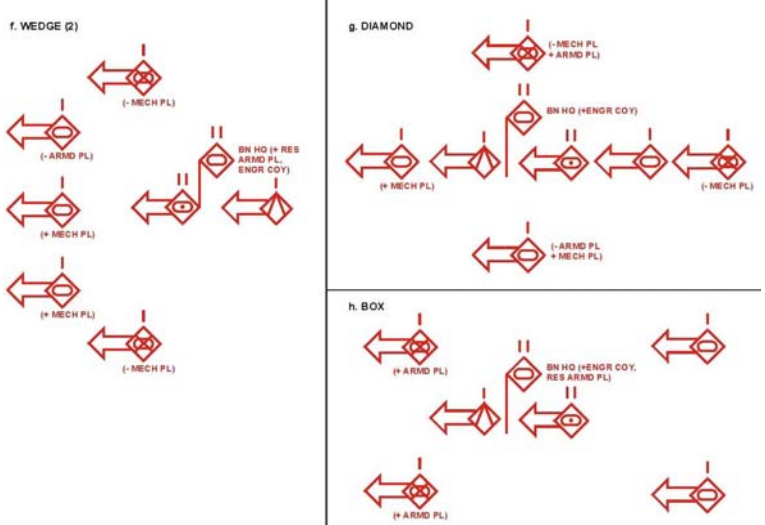


Figure 2-4-28: Alternate Pre-Battle Formations of a CA Armored Battalion (More variants)

174. **Defeating Enemy Countermoves.** Provided long-range fire superiority has been established and the penetration of the forward defences has been rapid, the enemy will be disrupted and unbalanced. Given a high level of mobility (including by helicopter) and the ability to manoeuvre fire, he can react quickly, however. It is thus vital to keep him off balance by the early insertion of recce, FDs and groups to intensify and prolong the disruption that has been caused. Groupings that have been identified as having the potential to conduct effective countermoves must be pinned or slowed down by remote mining, air and long-range artillery and even ground attack. The same means must be used to destroy his artillery (especially MBRLs), AD, EW assets and C3I facilities and means.

175. **Attacking Positions in the Enemy Depth.** Whether the attack is mounted by a FD or part of the main forces, there is likely to be less formidable artillery support for actions in the enemy depth than for penetrating forward defences. Recce information for targeting purposes is likely to be less complete and artillery has difficulty in supporting a high speed advance due to the time taken to get into action and prepare ammunition for major fire plans (for which, anyway, there is little preparation time). While brigades and battalions, at least on the main axis, will have significant quantities of artillery under command (much having been devolved downwards by DAGs and BAGs after the completion of the preparation and support phases), there will perforce have to be more reliance on traditional area suppression and less on more certain and economical precision fires. Aviation, especially attack helicopters, is expected to compensate for much of the shortfall, but it cannot be everywhere at once, and units and sub-units on secondary axes in particular cannot rely on receiving air support when and where they need it. They will therefore have to rely much more on manoeuvre and on fire and movement executed by direct fire weapons than in the attack on the forward positions of the main defended area. Fortunately, the defender in the depth will usually lack the force density and the well prepared, integrated obstacle and fire plans that characterize the forward defences, so manoeuvre to catch the enemy at a disadvantage will be easier (provided, of course, that recce succeeds in revealing weakness and proving routes). Where a grouping has to rely largely on direct fire and movement to advance, it is common for about half its strength to provide covering fire while the other half advances. Any less proportion devoted to overwatch is considered likely to result in failure, as enemy weapons have to be engaged in great depth and not just on the line of contact. So, for instance, TRIPLE COMPACT

believes that, to enjoy a reasonable certainty of knocking out an enemy ATGM at a range of 3 km, the concentrated fire of no less than three tanks is needed.

176. **Armoured Groups.** In order to maximize the use of all their assets, motorized units and sub-units will often form armoured groups in the attack. These comprise the IFVs of some of the infantry being employed in a dismounted attack and frequently, some tanks as well. Armoured groups are used in two roles:

- a. **Fire Support.** The group may be used to deliver direct fire support from the front while the main body manoeuvres to strike the enemy from the flank. Figure 2-4-29 illustrates a motorized company reinforced by a tank company (less a platoon) utilizing this technique.

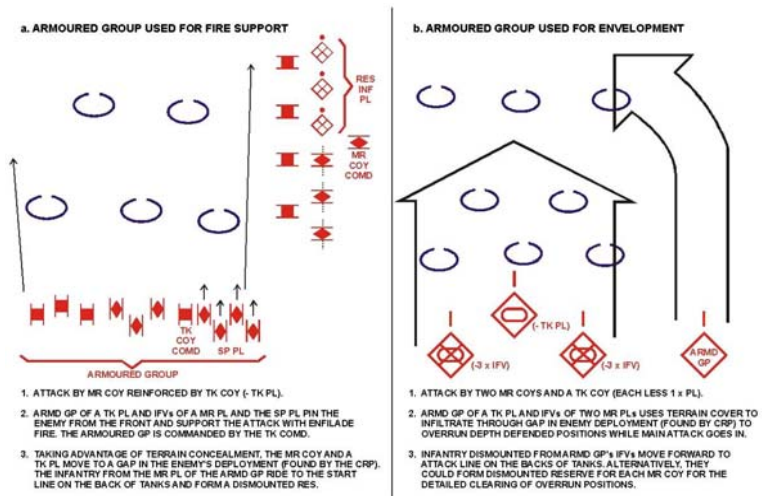


Figure 2-4-29: Attacks Employing an Armoured Group

- b. **Manoeuvre.** If adequate indirect fire support is available and the tactical situation is favourable, the armoured group can be used more dynamically. In this variant, as Figure 2-4-29 above shows, it can be used to infiltrate through a gap in the enemy's deployment to deliver a flanking move simultaneously with or successively to the start of

the main attack. The firepower of IFVs (especially BMP3) makes it effective in this role. While armour overrunning positions in this way cannot clear them properly, it can prevent depth defences from delivering long-range direct fire against the main attack and suppress the defenders until the infantry of the main attack arrives. Another possible manoeuvrist use of the armoured group is to work its way into the enemy rear and establish a blocking position to prevent the withdrawal of enemy forces facing the main attack. This is commonly done during an attack on a village or small wood, where all the infantry are required for clearance purposes but there is a redundancy of IFVs.

177. The Committal of Second Echelons/Reserves and Exploitation Forces. The committal of a second echelon/reserve or exploitation element is a critical moment in the battle. It is vital to capitalize as early as possible on initial success to insert tactical manoeuvre elements into the enemy's depth to conduct deep battle. Only if this is successfully accomplished will the enemy's long-range strike capabilities be suppressed, momentum maintained and the enemy kept off balance by prolonging and intensifying his disruption. Committal is not only critical but also a difficult and potentially high-risk undertaking. The period of insertion will be characterized by great force density in the area of deployment, with all the attendant possibilities of confusion and delay and the presentation to the enemy of a rich target array for precision, air, artillery and even ground attack. The following paragraphs consider TRIPLE COMPACT view of problems and principles.

- a. **Timing.** The timing of committal is crucial. If attempted too early, there may not be space enough to employ effectively all the combat power of both echelons and the enemy may be strong enough to halt the process and take advantage of the target-rich environment to ruin the attack irretrievably. On the other hand, a belated move is almost as bad. The entry of a second or exploitation echelon into battle is part of a competition in escalating combat effort, with forestalling the enemy as the prize. If committal is left too long, the progress of the first may be slowed or stopped and its combat

effectiveness may become dangerously low as enemy countermoves take effect. The defender may recover his balance and eliminate the threat to his high value assets in the depth. The time window for the optimal moment of committal is often going to be relatively small. To exploit it correctly puts a heavy emphasis on the commander's ability to forecast and then read correctly the course of the battle. This, the rapid reaction of the echelon in question, to the order for insertion is, in turn, dependent on two other factors. Pre-planning, during which much of the detail is worked out beforehand, and well rehearsed drills are critical to speedy and smooth entry into combat (hence the logic of forming pre-tasked second and exploitation echelons rather than untasked reserves). The grouping must also be well forward at the time of decision, despite the attendant risks. It will also have to be in a denser formation than is normal in tactical march columns in order to shorten the time taken to pass the line of committal. Use of Decision Support Templates after war gaming helps to decide these response timings.

- b. **Line of Committal.** The second echelon should be launched into battle after the densest part of the defence (usually the first echelon) has been penetrated and the enemy's fire system disrupted. This will generally be in the area of the sub-unit, unit or formation's immediate objective. Several alternative lines of committal and routes to them will be pre-selected and plans (including for AD and engineer work) will be worked out in advance. The one selected will depend on the degree of success attained by the first echelon, enemy reactions and capabilities and the capabilities and limitations of supporting elements. There are three possible options.
 - (1) **Into a Gap.** The second/exploitation echelon can enter into battle through a gap in both the first echelon's and (ideally) the enemy's deployment, either on an axis

where there has been little combat previously or into one created by the first echelon (see Figure 2-4-30).

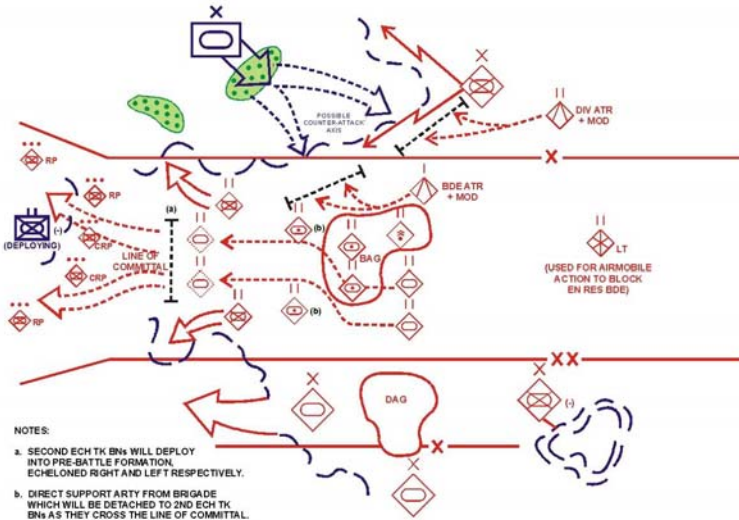


Figure 2-4-30: Committal of an Armoured Brigade Second Echelon in the First Echelon's Deployment

- (2) **To a Flank.** Another favourable circumstance for committal is when the second/exploitation echelon can be passed round the flank of the first. If, in so doing, it outflanks the enemy or hits a gap in the defence, so much the better (see Figure 2-4-31).

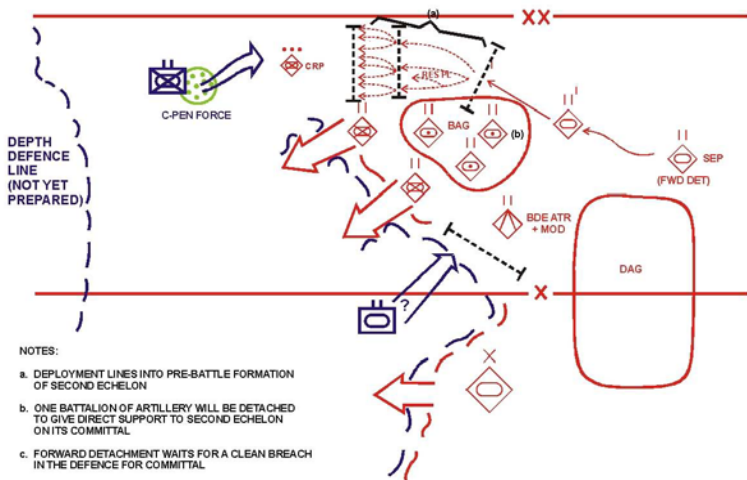


Figure 2-4-31: Committal of an Armoured Brigade Second Echelon to the Flank of the First Echelon

(3) **Passage of Lines.** The least desirable option is a passage of lines through the first echelon. This will create considerable C2 problems, slow the whole process to a snail's pace and run the risk of confusion and congestion which will be a gift to enemy targeters.

c. **Support for Committal.** When a second or exploitation echelon enters into battle, all available resources are employed to ensure the success of the venture. Routes will have been prepared by the engineers, who will also be ready to clear passages through enemy remote mining. AD will cover the approach and line of committal (at formation level, there will often be protective Combat Air Patrols (CAPs) as well). Chemical troops will provide smoke cover. Aviation, EW and artillery will suppress all enemy fire units capable of engaging (including direct fire weapons to the front and flanks). They will also neutralize enemy reserves and prevent the lateral shift of enemy forces to fill the breach through remote mining and the delivery of fire strikes. The first echelon will mount

supporting attacks. Air landings in the enemy's rear are often timed to coincide with the committal of second echelons to take advantage of the air and counter AD effort that supports the entry into battle and to complicate the enemy's reactions. They may be executed in support of the second echelon, to block the moves of enemy reserves or destroy enemy long-range systems.

- d. **Organizing Committal.** During the fight for the immediate objective, the commander of the second/exploitation echelon moves very near to the senior commander to keep his finger on the pulse of the tactical situation and make sure that his plans are continuously updated on the basis of the latest intelligence. He needs to know many things in order to refine his decision, including:
- (1) The Missions of First Echelon Elements (including the direction of main effort) and their combat effectiveness.
 - (2) The Role of His Command with respect to the mission of the senior commander and his concept.
 - (3) Reinforcements earmarked to join his echelon, either from the first or from the resources of the senior commander.
 - (4) The Enemy Situation, including his strength, probable deployment pattern at the time of entry into battle; deployment areas of reserves and artillery and the likely employment of the former.
 - (5) Responsibility of different elements for neutralizing the enemy on the line of contact and in the depth on the echelon's axis.

- (6) The effects terrain will have on movement and deployment and the subsequent advance.
- (7) The time of arrival on the Line of Committal as laid down by the senior commander.
- (8) The location of CPs. That of the second/exploitation echelon and of the first echelon will be collocated if a passage of lines is contemplated.

THE PURSUIT

178. TRIPLE COMPACT stresses that to defeat the enemy is not enough. Forces that are merely forced back may be regenerated and fight again, this time successfully. Destruction of the enemy is the goal, and this is most often accomplished by encirclement or in the course of a vigorous pursuit. Significantly, pursuit is studied as a separate and distinct phase of war. The pursuit phase begins when the enemy is routed or when he attempts to break contact and withdraw. Commanders at all levels from battalion upwards are obliged to maintain contact and to initiate pursuit without awaiting further orders.

179. **Conduct.** TRIPLE COMPACT distinguishes between two types of pursuit, frontal and parallel. The former is not considered sufficient on its own and needs to be conducted simultaneously with the more decisive latter form. Figure 2-4-32 illustrates all the elements of a pursuit.

- a. Frontal Pursuit consists of closely following up a withdrawal, maintaining constant pressure with the aim of overcoming rear guards and falling on the tail of the retreating columns or of forcing the enemy to deploy to stop this from happening.
- b. Parallel Pursuit is conducted on parallel axes with the aim of both striking into the flanks of the withdrawing enemy to slow him down and to overtake him and block any further withdrawal. The

enemy will then be destroyed by a combination of flank and rear attacks.

180. **Slowing and Halting the Enemy.** Withdrawing columns will be particularly vulnerable to parallel pursuit if only they can be slowed down or stopped. Three complementary methods are used to achieve this. Remote mining and air and long-range artillery strikes, especially on choke points, will have a significant retarding effect: precision strikes on bridges are seen to be particularly effective. Airmobile forces will be inserted into the enemy rear to establish blocking positions, preferably behind an obstacle that the enemy has to negotiate. FDs will likewise be tasked to establish blocking positions. Usually, they will be used to reinforce the air-landing troops so that their armour, artillery and engineer resources can stiffen the more lightly equipped infantry and provide a manoeuvre element in the area of the block.

181. **Tactical Formation.** In pursuit, even greater than normal freedom of action is accorded to units and sub-units and these are reinforced to make them tactically independent. Generally, the emphasis will be placed on the forces conducting parallel pursuit. Those following up the withdrawal directly will be as small as is compatible with maintaining strong pressure on the rear guards. Artillery will be largely decentralized to the pursuing units and will be held well forward in order to support leading elements as quickly as possible. Groupings conducting parallel pursuit will, of course, have open flanks and ATRs and MODs may be stronger and more numerous than usual. This will certainly be the case if the battle has developed unevenly and one unit or formation is conducting a pursuit while others are still engaged in battle with a stubborn defence or repulsing enemy counter-attacks. There will be even greater than normal demands placed on recce. Not only must the withdrawal be monitored but possible landing sites and obstacles must be recce'd, routes proved and long open flanks covered as far out as possible. Accordingly, extra RGs and RPs may well have to be found from tank and motorized sub-units.

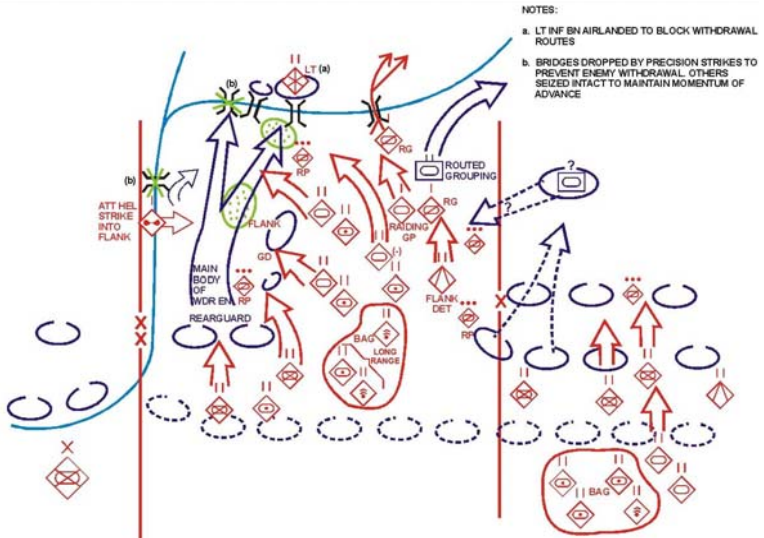


Figure 2-4-32: Pursuit Conducted by a CA Brigade

MEETING ENGAGEMENT

182. In TRIPLE COMPACT doctrine a meeting battle occurs when both sides are trying to fulfil their mission by attacking. For both sides, the goal is to rout the enemy rapidly, seize the initiative and create advantageous conditions for subsequent operations. On the more open, non-linear, manoeuvre dominated battlefield expected in future wars it will be an increasingly common form of battle. Unlike the Canadian Army, TRIPLE COMPACT does not expect meeting battles to be only small-scale affairs. Not only can they easily take place at division/brigade level, but TRIPLE COMPACT anticipates even operational level meeting engagements.

183. **Occurrence.** Such clashes are 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 forestalled at a

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counter penetration position or he is trying to counter-attack.

- c. During an enemy withdrawal, when he is outflanked or arrives at a blocking position simultaneously with friendly forces.
- d. In the defence, when a counter-attack is launched against an enemy breakthrough which has not been halted by counter-penetration.

184. **Characteristics.** In the TRIPLE COMPACT view, the chief characteristics of the meeting battle are as follows:

- a. **A Clash on the Move.** Both sides will be attacking from the march or pre-battle formation leading to a close quarter battle in which speed and surprise will be the crucial factors, closely followed by numbers.
- b. **Struggle for the Initiative.** There will be an intense struggle to seize the initiative with each side trying to impose its will through offensive action. The winning side will be that which imposes his will upon the enemy, forcing him into a reactive posture.
- c. **Fluid Battlefield.** 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. **Obscurity of the Situation.** For most or all, of the time the situation will remain fluid and obscure. Intelligence will be limited and will date rapidly. The TRIPLE COMPACT 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 AT, 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. **Shortage of Time.** The time available for decision-making and deployment will be very limited. To take an example, if opposing groupings are approaching at 15 km per hour, the closing speed will be 30 km per hour. If, say, 45 km separate the two sides, the commander will have only 1–1.5 hr to make his decision, issue his orders and have his command deploy. It is this shortage of time that makes TRIPLE COMPACT put such emphasis on simple battle drills. He who gets his move in first and builds up combat power fastest is likely to win.
- f. **Decisiveness.** 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 C2 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.

185. **Conduct.** As the TRIPLE COMPACT unit advances in tactical march formation, the action in a meeting battle usually follows the sequence below. Figure 2-4-33 illustrates a typical meeting battle.

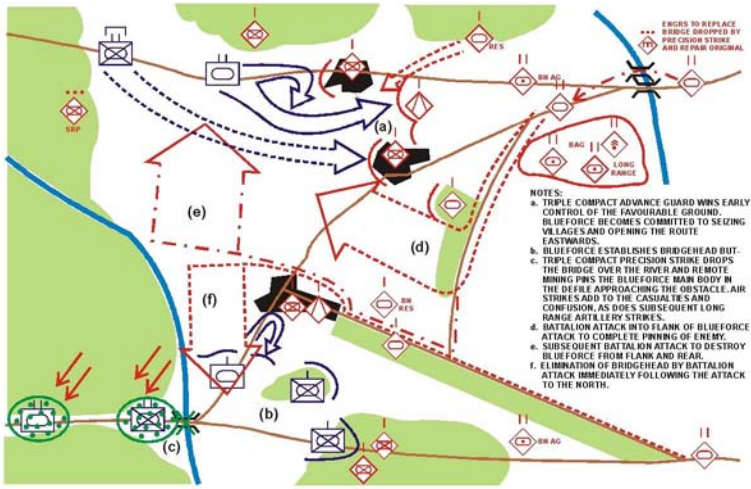


Figure 2-4-33: CA Brigade in Meeting Battle with a Reinforced Brigade

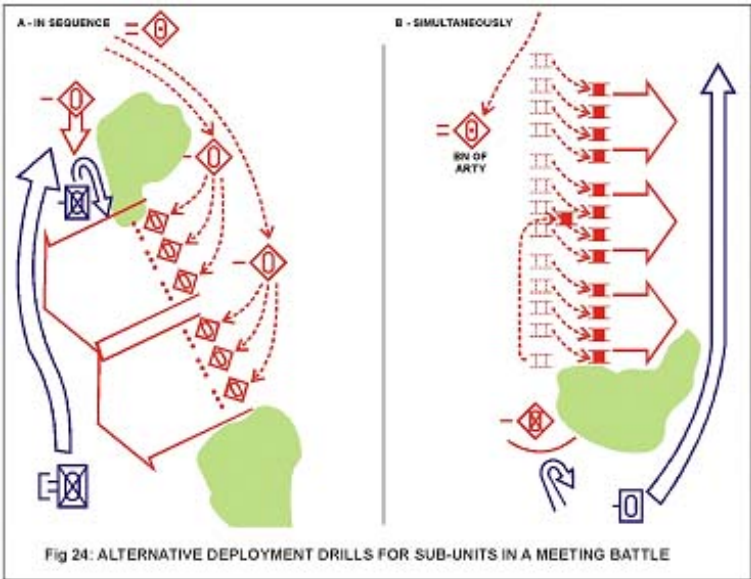


Figure 2-4-34: Alternative Deployment Drills for Sub-Units in a Meeting Battle

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

from higher headquarters. One of the first reactions of the TRIPLE COMPACT commander will be to direct his own recon assets to provide more detail of the enemy's location, strength, movements and intentions. For example, a brigade might be warned of the approach of an enemy force by its parent division and send out additional SRPs to contact the enemy. Similarly a battalion/BG might learn of an advancing enemy battalion from its brigade CP and the commander could well decide to send out at least an additional CRP. In the worst case, a battalion/BG acting as a vanguard or FD might learn of an approaching enemy only from a contact report from its own recon or FP. In such a case, little more than 10–15 min 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 TRIPLE COMPACT commander will assess the locations of the opposing forces and their speed of advance. Using 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 a FD or to leading march security elements. It may be necessary to slow the enemy down so that he is forestalled in the race for the favourable ground.

Remote mining and/or air attack may be used to accomplish this, as may the actions of a FD.

- d. **Engagement of the Enemy.** The battle will open before the sides reach the stage of a direct fire battle. Precision, air, long-range artillery and remote mining attacks will be delivered against the approaching enemy. If the upcoming battle is of great importance to the senior commander, he may even commit an airmobile force to seize the favourable ground or delay the enemy's approach to it. 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. AT 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 usually act together, in order to ensure an effective move is delivered, though sequential attacks may be conducted to save time: the first move will pin and disorganize the enemy and the subsequent one will destroy him. 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-empted the TRIPLE COMPACT unit in seizing the key ground, the TRIPLE COMPACT unit will try to 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.

- f. **Influence of the Senior Commander.** Given the nature of the meeting battle, much must be left to the judgement and initiative of the commanders on the spot. This is not to say that the senior commander does not exert any influence on the outcome. He will provide intelligence and supporting fire, including air support at formation level. He will also delay any approaching enemy reserves by both remote mining and air and long-range artillery attack. He may also commit an air mobile or air assault force to attack a key enemy grouping from the rear, destroy the enemy controlling headquarters or block potential enemy withdrawal or reinforcement routes.

- g. **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 19 DEFENCE

186. **General.** Soldiers trained in TRIPLE COMPACT style tactics believe that offensive action is the decisive form of combat in achieving victory on the battlefield. Consequently, units only go on the defensive *in order to create conditions favourable to resume the attack*; defence is a temporary phase. It should be borne in mind that, wherever possible, defence is a mission of the Basic Forces. CA units, circumstances permitting, are usually held back for countermoves.

Frequently, and particularly at the tactical level, defence will be adopted deliberately by part of a grouping as the best means of creating favourable conditions for mounting a decisive attack. This is especially true on the non-linear battlefield. Thus, it will often be seen as advantageous to force the enemy to concentrate and lure him into a tactical or operational pocket so that he can be broken by fire and then destroyed on the defensive anvil by the hammer of an enveloping counter-attack. At the strategic level, defence, especially in urban areas, can be utilized by Basic Forces to retain objectives in VENTORA (large towns and cities) in order to force the enemy to negotiate rather than fight.

187. **The Threat.** At the tactical level, the threat to the viability and stability of defence is threefold. These three factors condition the nature of the defence, but the requirements they impose are somewhat contradictory. The failure fully to reconcile these contradictions will cause some problems, as the TRIPLE COMPACT principles of defence will reveal.

- a. **Artillery and Air Attack.** He expects these deep strikes (AI, MBRL, cruise missiles and ATACMs) to shape the battlefield in order to make it favourable for his close battle. These will cause the most casualties. Precision munitions are perceived to be capable of suppressing the defence with a greater reliability and to a greater depth (thanks to improved target acquisition) than previously when air and artillery were purely area suppression systems of limited effectiveness and reliant on less accurate complete and timely target data.
- b. **Armour.** The enemy's ground-taking and subsequent holding will depend primarily on massed armour, especially tanks. With their high mobility, flexibility, firepower and shock power, armoured groupings can quickly exploit any weakness created in the defence by artillery and air attack and generate tactical momentum and manoeuvre in the defence's depth to break up its cohesion and stability.
- c. **Air Assault.** Air assault will be used to assist the armoured breakthrough by vertical envelopment so that strong points and defended areas are attacked

simultaneously from front and rear. They will exploit deep strikes to undermine the defence's stability by attacking CPs, artillery and ADs, EW sites, logistic support and reserves. They will also be employed to block withdrawal and reinforcement routes and seize vital ground in the depth on which new defence lines can be based. These will usually act in cooperation with ground tactical manoeuvre elements which have penetrated the enemy's depth, such as FPs.

188. **Reasons for Assuming the Defence:**

- a. **Economy of Force.** To permit the concentration of the requisite superiority for an attack in one sector, some formations will often be responsible for long passive sectors.
- b. **Counter-attacks.** During offensive operations, counter-attacks will usually be repulsed by defensive action.
- c. **Attrition.** When a unit or formation outruns its logistic support and/or suffers such serious losses that it can no longer sustain offensive action, it may have to transition to defence.
- d. **When the Enemy is Considerably Superior.** Even during the course of an offensive, the enemy may concentrate a stronger force on a given sector, or inflict such attrition on an attacking grouping through long-range fire, that it is forced onto the defensive. Defeat in a meeting battle will force a grouping onto the defensive (and often adjacent units as well).
- e. **Consolidation of Captured Areas.** Forward and airmobile detachments will generally be required to seize and hold ground in the interests of the main force's advance. Captured enemy large towns and cities may also be held in order to retain strategic goals.

189. **Answers to the Threat:**

- a. **Manoeuvre of Fire and Obstacles.** The ranges of modern missiles and artillery, not to mention both fixed and rotary wing aircraft make it possible to concentrate fire and remote mining from dispersed assets onto key sectors and so break up the attack. The defence should rely less on numbers of troops but more on the manoeuvre of long-range fires for success. Direct fire will merely complete the task largely accomplished by indirect fire and air action.

- b. **Dispersal Laterally and in Depth.** It is increasingly recognized that to sit on vital ground is to attract devastating fire. It may often be better to defend the approaches to it and to dominate the ground itself by fire from flank and rear. Alternatively, minimal forces, sufficient to check the enemy, may be left in place until the conclusion of the enemy's preparatory fire and sufficient defensive strength is moved in only when the fire lifts. Recognizing that stopping the enemy right on the forward edge is increasingly difficult, TRIPLE COMPACT is also deploying in greater depth, relying on a wearing down and disrupting process to create favourable conditions for countermoves rather than on static defence. In future war, the second echelon may be as strong as the first or even stronger.

- c. **Tenacity.** A unit or formation ordered to hold a position must do so with the utmost stubbornness and may only give ground or withdraw with the permission of the senior commander (sometimes conceded in advance, however). This stricture applies even in encirclement and when communications with the senior commander and flanking units break down. Generally, attempts to break out of encirclement (at least without a coincidental relieving attack) are equated with the effective loss of the grouping concerned. Prolonged resistance, however, may restrict enemy manoeuvre and will tie down troops needed elsewhere. It may

also provide a pivot for friendly manoeuvre or an anvil on which to crush the enemy. The mixture of static resistance and manoeuvre will vary from sector to sector. In some areas, steadfast retention of occupied lines and positions will be combined with local counter-attacks; in others manoeuvre defence may be employed and in others a combination of the two. Methods will vary according to the mission, the terrain, relative strengths and other criteria. As a result, combat will develop in a non-linear fashion.

- d. **All-Round Defence.** The non-linear nature of the battlefield and the ever present threat of vertical envelopment make it imperative that tactical formations and units adopt all-round defensive deployments or are at least able to move rapidly into all-round defence.

- e. **Activeness and Manoeuvre.** The defender cannot afford to be passive, relying on static defences. The initiative must not be surrendered to the enemy. Defensive battles in the future will be characterized by a defensive-offensive mix with the share of offensive activity tending to increase. The more aggressive the defence, the more stable it is expected to be. Counter-attacks will be more frequent but will often have more limited aims than in the past.
 - (1) **Pre-emption.** This ultimate expression of activeness is considered highly desirable, especially against enemy precision weapons, attack helicopters, EW assets and artillery (especially MBRLs). These, together with their associated C3I, are the highest priority for destruction and every effort will be made to locate and destroy them before they can open fire. A pre-emptive counter-preparation is also considered important in that it may alter unfavourable force ratios at the last minute (the best time) and disrupt the enemy's timetables. Nor are spoiling attacks brigade or higher levels excluded if circumstances

are propitious (e.g., after a successful counter-preparation).

- (2) **Manoeuvre.** The manoeuvre of fire, a key concept, has already been touched on. Just as important is the manoeuvre of troops, both laterally from passive sectors and from the depth. This will be done to form counter-concentrations either for counter-penetration, ensuring that the enemy does not achieve a significant or decisive superiority of 4–5:1 or more, or for counter-attacks. This approach avoids lengthy occupation of the attack sector with consequent heavy losses to the enemy's fire preparation and it fulfils the need for anti-precision attack manoeuvre (i.e., the frequent relocation of units to get out from under enemy strikes). Successful, timely manoeuvre increases the power and stability of the defence and makes it possible to defeat a superior enemy force. This principle is not in conflict with the demand for tenacity in holding some positions. Stubborn defence of vital ground forms the pivot necessary for aggressive countermoves and/or an anvil on which these can destroy the attacker. At very least, it will inhibit the enemy's ability to conduct manoeuvre and gain time for the reinforcement of sectors where the defence is beginning to crumble. TRIPLE COMPACT believes that combat effectiveness is lost when a unit or formation has suffered 50–60 % losses.
- (3) **Counter-attacks/Strikes.** These offensive actions, to destroy enemy penetrations and/or retake lost ground, are the basis of successful defence. Ideally, they are launched when the stability of the defence is unimpaired yet the enemy has already committed his immediate reserves and

those more distant are delayed and disrupted by interdiction. They can be initiated against an enemy temporarily transitioning to defence or in expectation of a meeting battle with a disrupted penetrating force. Major countermoves must be sure of achieving significant tactical results. If only a dent can be created in a penetration, it is considered better to utilize second echelons or reserves for counter-penetration. On the other hand, small scale, local counter-attacks are now seen to have an important place in maintaining the stability of the defence. They can be used to inflict delay, winning time for essential manoeuvre to be completed, and, especially in manoeuvre defence, to assist in the withdrawal of troops which have problems in disengaging.

- (4) **Counter-penetration.** In the event of the attacker making better than expected progress, upsetting the stability of the defence and still having additional combat power within reinforcing reach of the battle area, counter-attacks/strikes will be eschewed in favour of replacing or reinforcing elements of the first echelon and blocking the enemy's further advance and attempts to generate tactical manoeuvre. In this case, more potentially decisive countermoves will be left to the senior commander using his reserves.
- (5) **Recce and Counter-Recce.** Without continuous and aggressive recce extending well into the enemy's depth, the prospects for a successful defence will be poor. Determining the enemy's main axis, the locations of his high value weapons and C3I assets, his shock groupings and his timetables are essential to preemption, the

disruption of approaching attack forces by long-range fire and the timely reactions of manoeuvre units. By the same token, a vigorous, ongoing effort must be made to deceive and degrade enemy recce by both passive and active measures. The victor in the information struggle will be the victor in combat.

- (6) **Deep Battle.** Even in defence, deep attacks must be mounted to disrupt, damage and delay the attacker. These will not be confined to EW, artillery, missile and air strikes. Air assaults into the enemy rear to conduct raids will be needed, though, given a generally unfavourable air situation, these will not be on the same scale as when on the offensive. By-passed groupings can also be used in this role when not required to stand firm.
- (7) **Withdrawal.** See Section 20. TRIPLE COMPACT now accepts that withdrawal may, in some circumstances, be an expression of activeness. This will be the case, for instance, when creating reserves for a counter-attack or when luring the enemy into a tactical pocket for destruction there.

190. **Engineer Preparation.** Engineer work in defence is carried out to enhance the protection of troops, to create or improve obstacles to enemy manoeuvre and to ensure the ability of TRIPLE COMPACT to conduct manoeuvre.

- a. **Protection.** Defending forces must be well dug in to withstand both conventional and advanced conventional munitions (ACM) bombardment. Even second echelons and reserves must be protected to survive deep strikes. Furthermore, depth positions and waiting areas must receive engineer preparation if enemy penetrations and attempts to generate operational manoeuvre are to be stopped. Of course,

most defence works have to be carried out by the combat troops themselves (aided by the self-entrenching devices fitted to tanks, IFVs and some self-propelled artillery). However, TRIPLE COMPACT engineers are very generously equipped with heavy equipment to help achieve the necessary depth and density of prepared positions. Particular attention is now being paid to defeating enemy aerial reconnaissance and precision attack: TRIPLE COMPACT believes that simple field fortifications will reduce casualties from PGMs by two-thirds. Where time permits, all fighting positions and their communications trenches are given overhead cover. Vehicles, too, are dug in and covered with locally produced polyurethane screens (lightly covered in turn with soil) to disperse heat and disguise radar signatures. Tracks are eliminated where necessary. Radar and thermal decoys are deployed and dummy positions created to draw enemy attention and fire away from real positions. Bi-spectral smoke pots and fog generators, together with decoys are emplaced to defeat incoming PGMs targeted against real positions.

- b. **Obstacle Creation.** Of great importance is the creation of a comprehensive obstacle plan. Lavish use will be made of mines to disrupt and canalize enemy attacks. In this respect, note must be made of minelaying during the course of operations. TRIPLE COMPACT believes that it is generally more effective to lay a minefield at the last minute, during the course of a battle and directly in the enemy's path, rather than lay it beforehand and thus give the enemy time to detect it and prepare breaching means in advance. Such surprise minefields are also more economical, often a major factor in defence during the course of offensive operations. It is this consideration which makes the MOD and its associated ATR so important a part of tactical and operational formation. There is also growing emphasis on surprise, rapid surface laying of mines by helicopters and, more importantly, by aircraft and MBRLs delivering RDMs. These can

be used to seal gaps in the defence or to fix deep reserves in order to win time for the defence.

- c. **Movement Support.** Routes for the manoeuvre of reserves and the second echelon are recce'd and marked. Where possible, they are improved and open sectors are camouflaged and provided with smoke pots and decoys. Reserve bridging may be deployed in hides near bridges likely to be targeted by the enemy or at alternative crossing sites: sometimes, underwater bridges are built beside permanent structures. MSDs are created in advance to support the deployment of troops from the depth.

191. **Surprise.** It is recognized that it is much easier for the side holding the initiative to achieve surprise. However, it is still an essential tool of the defence, helping to compensate for shortage of forces and persuading the attacker to conduct operations in unfavourable conditions and on unfavourable axes. It is achieved by concealing the nature and locations of defences and, by deceiving the enemy as to the defence's alignment and deployment and, by unexpectedly conducting active operations, wresting the initiative back from the attacker. TRIPLE COMPACT stresses several points on achieving surprise in defence:

- a. **Avoidance of Stereotype.** The alignment, grouping and methods used in defence must not be according to a template, predictable to the enemy even if his intelligence picture is incomplete. This does not mean the abandonment of norms, but their imaginative application. (Norms are only averages and vary according to troop strengths, capabilities, terrain and the mission.):

- (1) **Counter-recce.** Surprise in defence can only be achieved through an active struggle against enemy recce. Recce means must be located and destroyed. They must also be deceived by extensive use of dummy positions and structures, false movement, dummy radio nets, etc. Strict camouflage discipline and the extensive use of bi-spectral smoke is, of course, vital to both

the concealment of real defended lines and areas, weapons groupings, CPs and reserve concentrations and to the success of deception plans.

- (2) **False Forward Edge.** If possible, a false front should be created to mislead the enemy into a mistaken fire preparation and attack plan. Where that is not possible, it is considered desirable temporarily to withdraw troops covertly before the enemy's artillery and air preparation, a technique used in the past and now very important in view of the increased destructiveness of modern weaponry. In view of its complexity, such a withdrawal must necessarily be shallow (though there has been argument in favour of deep withdrawals, leaving only enough forces on the forward edge to repel an attack by forward units).
- (3) **Counter-preparation.** To be successful, the organization of counter-preparatory fires and strikes must be covert. Given the long-range and accuracy of modern weapons, little if any prior manoeuvre will be required for many of the participatory systems, provided the correct time and place of the attack have been anticipated.
- (4) **Manoeuvre.** Manoeuvre is essential to maintaining the stability of the defence. It must, however be covert or the enemy will disrupt and defeat regrouping or counter-attacking forces. Thus it is essential thoroughly to prepare routes and to use concealment, bad visibility and deception to cover movement.

192. **Continuous C2.** As the defender will be in a reactive posture for much if not most of the time, it is essential that these reactions be prompt. Some pre-planning will help to ensure this, but the very

nature of defence makes it much more difficult for the commander to forecast the course of the battle than when on the attack. Moreover, the attacker will seek to exploit his superiority to attack the defender's C3I to make his reactions belated and ineffectual. Even more attention will therefore have to be paid to ensuring continuous C3, for instance, by building extra redundancy into the system.

193. **AD.** Defeat of the air enemy is essential to successful ground defence. If accomplished, it will restrict or deny enemy air recce, air preparation and interdiction and the insertion of significant air assault forces. The main contribution at the operational level should be made by the air forces (aided by missile troops, SPF and raiding detachments) conducting an (ideally pre-emptive) counter-air operation. Tactical AD of the ground forces will in addition attempt to create a dense, seamless, overlapping AD umbrella with considerable redundancy (i.e., ability to absorb losses).

194. **Anti-landing Defence.** Both large and small-scale air assaults are now seen as integral parts of offensive operations. Such forces are capable of disrupting the stability of the defence by destroying C3I elements, logistic support and key weapons systems, by checking the deployment of reserves and by seizing vital ground. They may also be used for vertical envelopment to aid frontal attacks in reducing defended positions or to interfere with planned withdrawals. It is now considered desirable to hold dedicated ALRs at both tactical and operational levels. Usually, these will be substantial as threats are likely to be multiple: tactically, for instance, divisional separate tank battalions may well be used in this role. Where this is not possible, second echelons (reserves) will be located so as to defend particularly important areas or targets, and anti-landing obstacles may be created by engineers. The mobility and flexibility of the light infantry battalions (provided helicopters are made available) make them useful in this role. Light infantry units may also be committed to anti-landing roles within tactical formations' deployment if the enemy landing threatens operational stability.

195. **Factors of Success.** The goal of any defensive action is to create favourable conditions for the ultimate defeat of the enemy through offensive action. The accomplishment of this will be a balance of three fundamental factors (depending on the situation).:

- a. **The Enemy.** Such losses must be inflicted on the enemy as to deprive him of further offensive

capability, while still retaining combat effectiveness of friendly forces.

- b. **Spatial.** It is desirable to retain as much ground as possible, but TRIPLE COMPACT is prepared to give up terrain, at least temporarily, as long as critical areas are held (including those the retention of which is essential for countermoves to succeed).
- c. **Temporal.** Time must be won for the deployment of further forces from the depth, the regrouping of forces and the creation of shock groupings for countermoves.

196. **Defensive Positions.** The first belt of the main defensive area usually comprises three or possibly four positions. Subsequent belts will comprise two to three positions. Each position is designed for defence or delay, often alternating between one and the other:

- a. **Defended Zone.** A division or brigade will defend a zone of varying width, occupying two defensive positions simultaneously and sometimes holding key terrain in a third with its ALR.
- b. **Defended Area.** A defended area is TRIPLE COMPACT parlance for a battalion area of operation (AO). Defensive positions are planned as a series of mutually supporting defended areas.
- c. **Strong Points.** Within defended areas, companies and platoons are organized in mutually supporting strong points.

POSITIONAL DEFENCE

197. Positional defence is the norm when:

- a. adequate forces are available to achieve an efficient density of weapons (especially AT);
- b. key areas must be held; and

Land Force Threat Force Model

- c. the terrain lends itself to this form of defence.

198. Positional defence does not imply that every m of the forward edge is to be defended to the death and, if necessary, retaken by automatic counter-attack. TRIPLE COMPACT accepts that penetration is inevitable. It designs its defence to ensure that a break-in cannot be converted into a penetration which will enable the enemy to generate tactical, let alone operational manoeuvre, to ensure that a breakthrough is achieved. The aim is to ensure that penetrations are only achieved on axes acceptable to TRIPLE COMPACT and at a cost in time, casualties, disruption and loss of momentum unacceptable to the enemy.

199. **Aims of Positional Defence.** The aims of a defensive battle will include some or all of the following:

- a. repel an attack or counter-attack by superior forces;
- b. inflict maximum losses on the enemy;
- c. support the development of an attack in an important direction;
- d. hold vital tactical or operational lines or areas;
- e. cover the flank of a higher formation's main grouping;
- f. restore the combat capabilities of the formation or unit when it has taken such heavy casualties that it cannot continue to attack; and
- g. create favourable conditions for the initiation of an attack, either by the defending grouping or by other formations.

200. **Manoeuvre Timings in Defence.** Plainly, some timings are necessary in conducting manoeuvre to prevent the enemy from capitalizing on initial success and generating tactical manoeuvre in the depth. Some examples for the manoeuvre of sub-units in defence which TRIPLE COMPACT tries to achieve are as follows:

- a. To move a motorized company to a new strong point 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 min by day and 12 min by night.
- c. To quit a position or firing line: 5–7 min by day, 7–10 min by night.
- d. To move a second echelon battalion 8–10 km to reinforce a threatened sector or to launch a counter-attack: 40–45 min.

MANOEUVRE DEFENCE

201. Manoeuvre defence is now a co-equal form, intended to economize forces on less important axes and/or to buy time for the deployment of forces from the depth and/or passive sectors, in order to create a positional defence in depth, or mount a decisive countermove. In manoeuvre defence, the aim is to wear down the enemy's strength and deny him operational momentum by defending on successive, deeply echeloned lines, but refusing to become decisively engaged on any of them.

202. **Delay on Successive Lines.** Each defended position should be strong enough to repulse an attack from the line of march, with ATRs and MODs plugging any penetrations into or between positions. The enemy will then be forced to mount an attack with detailed preparation. Ideally, the forward groupings will withdraw before such a move can be delivered, their "break clean" being assisted by powerful air and fire strikes, remote mining, smoke and the actions of ATRs and ambush groups. They will pull back through the positions of the second echelon to occupy the next line behind them. In this way, the two echelons leapfrog backwards. It may happen, of course, that an echelon will have to remain long enough on one line to repulse an attack with detailed preparation, to allow time either for the next one to be properly prepared and occupied or to eliminate a lodgement made on vital ground on the next line by enemy air assault troops and/or FDs. It is also possible, even likely, that units and sub-units will not succeed in "breaking clean" and that they will have to fight a

running battle. In this case, encircled elements and rear guards may have to be sacrificed. Such an eventuality may create significant gaps in tactical combat formation. These may have to be filled by the deployment of immediate reaction airmobile reserves to either delaying positions or to the next defensive line.

DELIBERATE OR HASTY (FORCED) DEFENCE

203. The circumstances under which defence is adopted will do much to determine the layout and resilience of the defence.

- a. **Deliberate Defence.** A formation or unit preparing to defend prior to the outbreak of war, or preparing depth defences during the course of hostilities, may be said to be preparing deliberate defence. Such a defence, planned and organized out of contact with the enemy, is characterized by relatively long preparation time. Alternative plans are prepared for attacks on different axes; cooperation is organized; extensive engineering work is undertaken. The combat troops may not, however, be deployed until the last minute to maintain secrecy and to give the maximum time to study the enemy deployment and divine his intentions, thus ensuring the implementation of the most suitable variant of the formation plan. In such a defence, the bulk of the formation's combat power may well be to the rear. This will enhance its survivability by keeping it out of range of most enemy artillery systems. It will also allow maximum freedom of and time for manoeuvre to adjust the emphasis of the defence in accordance with the perceived weight of the attack on various axes and ensure the availability of a strong countermove force.
- b. **Hasty (Forced) Defence.** A defence adopted while just about to be or actually in contact with the enemy may be characterized as hasty. If a formation is already severely attrited or under strong counter-attack, or is defeated in a meeting engagement, the defence will not be merely hasty but forced. In both

cases, but particularly in the second, preparation time will be strictly limited; and in the second, preparation will have to be undertaken simultaneously with efforts to repulse enemy ground and air attacks and stabilize the first echelon's position on favourable ground. The weight of the defence is likely to be forward, quite possibly with emphasis on the wrong axes. Moreover, limited offensive action may be necessary even as the defence is being established in order to seize favourable ground. In these circumstances, typical of defence during the course of the offensive or as a result of a surprise attack, defence is considered to be very difficult and uncertain of success.

CONDUCT

204. **Forward and Reverse Slope Defence and Fire Pockets.**

TRIPLE COMPACT's teaching stresses that the system of fire should be as deep as possible and it is therefore still common for the forward edge of the defence to be sited on a forward slope. Reverse slopes may in this case be used to protect vehicles and for ambushes.

TRIPLE COMPACT has, however, come to appreciate the vulnerability of forward-slope positions in the face of modern recce means and precision/ACMs fire, so there is now an increasing trend to site most of the defence (i.e., less weapons designated for the repulse of recce) on reverse slopes. Within the system of fire, the commander may plan to create fire pockets in which the enemy is confronted from front and flanks with the maximum volume of fire. Fire pockets may be created in front of the forward edge or in the depth of the defence and when possible minefields will be laid on their edges. Brigade-sized fire pockets can also be created to trap larger enemy groupings.

205. **Deep Battle and Deep Operations.** Air, missile and electronic pressure will be exerted against enemy means for conducting long-range battle. They will not, however, be enough, in TRIPLE COMPACT's opinion, to prevent the attacker from achieving a potentially decisive electronic-fire dominance. At the tactical level, raiding detachments and groups will have to carry the struggle into the enemy's depth. Formations on important axes will be augmented by corps artillery and may be supported by higher formation artillery and rocket artillery groups. Elements of long-range artillery will deploy in

the covering force zone initially and then rejoin their CAG about 10–12 km from the forward edge. They, together with aviation, will conduct the deep fire battle.

206. **Close Battle Artillery.** Lower formations will form DAGs/BAGs on their main axis, though if a wide zone is to be defended, some artillery may have to be decentralized to units. In principle, as much artillery as possible is held in the DAG/BAG, to allow the formation commander to manoeuvre massed fires in support of threatened units and to destroy air landings. BAGs will generally be formed to support only those armoured/motorized brigades which are beyond the effective range of support from the DAG. Powerful fire strikes of short duration by one or several artillery battalions are planned on obstacle crossings, defiles, road junctions and likely routes approaching the forward edge. These may be reinforced by subsequent air or helicopter strikes. Massive fire concentrations and barrages, both moving and standing, are prepared on several lines in front of and up to 400 m from the forward edge. Such fires are planned on likely attack positions and approaches. Again, they may be supplemented by aviation strikes. In depth, both fire concentrations and barrages are planned in likely areas of enemy penetration and on the axis of planned counter-attacks and to the flanks of strong points and defended areas. It is even easier to use aviation, especially helicopters, in the depth as the enemy's AD will be less dense and well organized there.

207. **Direct Fire.** Particular attention is paid to AT defence throughout the defended area, but especially on the best tank approaches. The AT capability of an armoured or MD, or a CA brigade is said to be capable of repulsing the attack of up to two enemy divisions. However, the defence of a division may need to be reinforced by troops from a less threatened direction or by a corps ATR and MOD if the defending formation has suffered severe attrition and disruption from the enemy's fire and electronic preparation. AT weapons are deployed within the defended areas of battalions (for the most part, within company strong points) on tank-threatened axes, and several alternative firing lines for the ATRs, both divisional/brigade and corps, are pre-designated and, if possible, prepared. So, too, are firing lines for attack helicopters. Breaking up the attack 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 m 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.

	Armoured/ MD	CA Bde	CA Bn	Armoured/ Motorized Bde	Motorized Battalion	CA Coy	Motorized Coy	CA Pl	Motorized Pl
Frontage	20–30 km	15–25 km	5–8 km	10–15 km	3–5 km	2–3 km	1–1.5 km	>1 km	>0.4 km
Depth	20–30 km	15–25 km	3–5 km	10–15 km	2.5–4 km	>2 km	>1 km	>1 km	>0.3 km

Figure 2-4-35: Frontages and Depths in Positional Defence

208. **The Obstacle System.** Natural obstacles are exploited wherever possible to provide protection for positions and individual defended areas and strong points and to canalize the attack. These are reinforced and supplemented by an integrated system of minefields, AT ditches and traps, demolitions and wire obstacles. TRIPLE COMPACT starts by implementing the obstacle plan in front of the forward edge and in the covering zone. It then, as time and resources permit, extends it both in front of the forward edge and into the depth of defence.

COVERING FORCES

209. A covering force is normally established when TRIPLE COMPACT is out of contact with the enemy. However, it can be created in a limited manner when in contact. The covering force has the following missions:

- a. determine the enemy’s strength, composition and axes;
- b. force the enemy to deploy prematurely;
- c. canalize the enemy into the strongest part of the defence;

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- d. force the enemy to concentrate and offer TRIPLE COMPACT a massed target;
- e. deceive the enemy as to the true location of the main defensive area; and
- f. wear down the enemy.

210. **Types of Covering Force.** There are three principal types of covering force at the tactical level.

- a. **Combat Security Outpost (CSO).** A battalion/BG commander may well order that a second echelon company temporarily detach a platoon, to form a CSO on an approach not covered by a forward position (FP). Sited up to 2 km in front of the forward edge, the outpost will defeat enemy recce and prevent an attack taking the first echelon by surprise.
- b. **FP.** FPs are ordered by division or brigade, but planned in detail and provided by first echelon battalions/BGs (from their second echelon). They are reinforced company in strength, deployed 3–6 km beyond the forward edge on the most threatened axis for their parent unit. The troops in the FP are tasked with the defeat of enemy recce, the repulsing of probing attacks and thus with misleading the enemy as to the true location of the forward edge.
- c. **FD.** A FD is organized at division/brigade level, and only when there is no covering force out in front. It is formed from the first echelon lower formation, in whose zone it is operating and its battle is controlled by that headquarters. It will normally consist of a battalion/BG, reinforced with artillery, engineer, AD and AT assets. The FD is pushed up to 20 km in front of the forward edge and will delay on two to three lines. The FD is expected to repulse the hasty attack of the leading enemy brigade. While the enemy deploys his main body

(this is expected to take about an hour), the artillery and aviation deliver fire strikes and, upon the authorization of the divisional commander, the detachment will withdraw under cover of smoke, artillery and air-delivered fire and remote mining as required to its next pre-prepared delay line. Pre-positioned engineers will help the withdrawal over obstacles if necessary and ambushes are deployed in gaps and between delay lines to inflict casualties and induce caution in the enemy. RDMs can also be used to pin pursuers. At various stages of the battle, attack helicopters and even fixed wing aviation may be used to strike the enemy. The former are considered particularly useful in helping the FD to withdraw and in executing ambushes. The final delay line usually coincides with the false forward edge (portrayed in adjacent sectors by FPs). Here, the FD will probably thin out, sending its most damaged elements back to the refurbishment area. The attached artillery will also retire, rejoining their parent groups. On this line, the full weight of various artillery groups can deliver support for the final delaying action and the withdrawal through selected entry points over the forward edge, before reverting to formation reserve or second echelon for refurbishment.

ECHELONS AND RESERVES

211. 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, but still has to cover a considerable frontage.

- a. **First Echelon.** The tasks of the first echelon are to:
 - (1) repel enemy attacks with maximum losses;

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- (2) prevent penetration or channel it into a pocket for destruction;
- (3) hold vital ground if penetration cannot be avoided; and
- (4) to support the second echelon or reserve in carrying out countermoves.

In the past, two-thirds to three-quarters of a grouping were usually deployed in the first echelon. It is now increasingly common, where circumstances allow, for only about a half to be so employed.

b. **Second Echelon.** The tasks of the second echelon are to:

- (1) reinforce the efforts of the first echelon;
- (2) conduct counter-penetration; and
- (3) launch counter-attacks.

At unit level, counter-penetration is the more usual employment. Even at brigade level, there will rarely be enough strength to eliminate major penetrations and counter-attacks will generally be part of a larger corps or division scheme of manoeuvre.

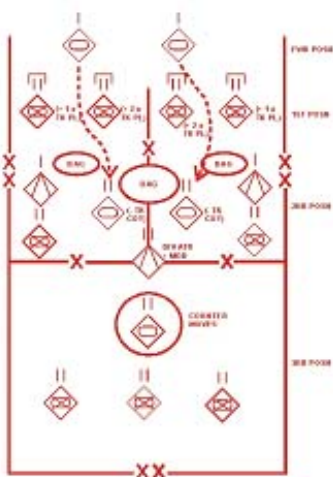
c. **Groupings.** Commanders generally strive to keep a strong armoured element in the second echelon or reserve, because the tanks' armoured mobility and firepower can be most effectively used in counter-attack and counter-penetration roles. In tank formations and units, there is a strong tendency to concentrate subordinate infantry elements in the first echelon, because of their advantages in holding ground and providing OPs and sentries.

212. **Reserves.** Given that the enemy will possess the initiative, at least in the early stages of the battle, reserves assume an even greater importance in the defence than they do in the attack.

- a. **Tactical Reserve.** The tactical reserve is fundamental to the maintenance of stability in defence. It may: replace combat ineffective elements of the first echelon; conduct counter-penetration; destroy raiding detachments; mount its own counter-attacks, or join in those mounted by the second echelon; using elements of its composition, carry out deceptive moves or impart animation and realism to dummy groupings.
- b. **ATR and MOD.** These provide the first line, counter-penetration forces: it is hoped that their timely committal on threatened axes will be enough to stabilize the situation and thus preserve the reserve or second echelon. They are also important in covering the deployment and supporting the committal of countermove forces and in providing flank protection.
- c. **ALR.** The enemy will undoubtedly try to destabilize the defence through vertical envelopment and air-mobile raids. Each division or brigade, and where possible each unit, will form an ALR.
- d. **Airmobile Reserve.** Where a formation has guaranteed lift for its separate light infantry battalion, an airmobile reserve is formed. This can be used not merely for counter-penetration but also for raiding actions in the enemy's depth. If, being on a minor axis, a formation is unlikely to have lift made available, the light infantry battalion may form part of the second echelon or CA or ALRs.
- e. **Special Reserves.** Recce, AD, engineer and chemical defence reserves will usually be held to plug gaps, replace losses and support countermoves.

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(a) MAIN AXIS, COVERING FORCE IN FRONT



(b) SUBSIDIARY AXIS, NO COVERING FORCE IN FRONT

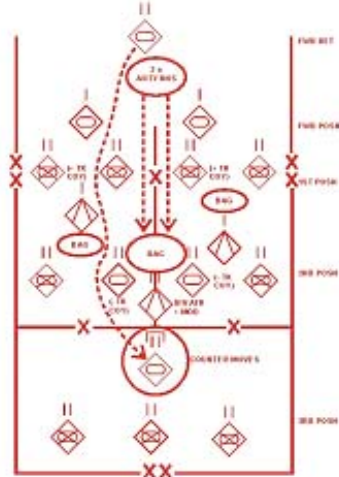
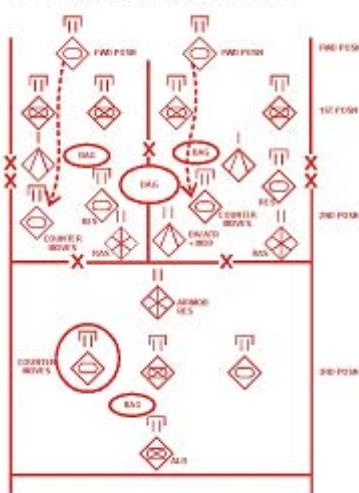


Figure 2-4-36: Tactical Formation of a MR Division in Defence

(a) MAIN AXIS, COVERING FORCE IN FRONT



(b) SUBSIDIARY AXIS, NO COVERING FORCE IN FRONT

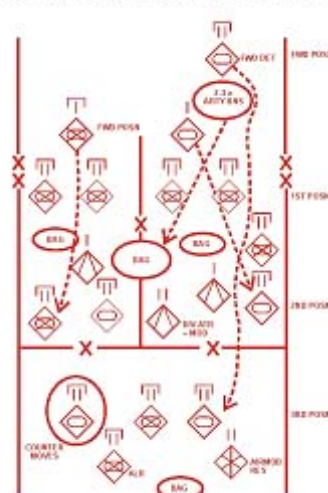


Figure 2-4-37: Tactical Formation of an Armoured Division in Defence

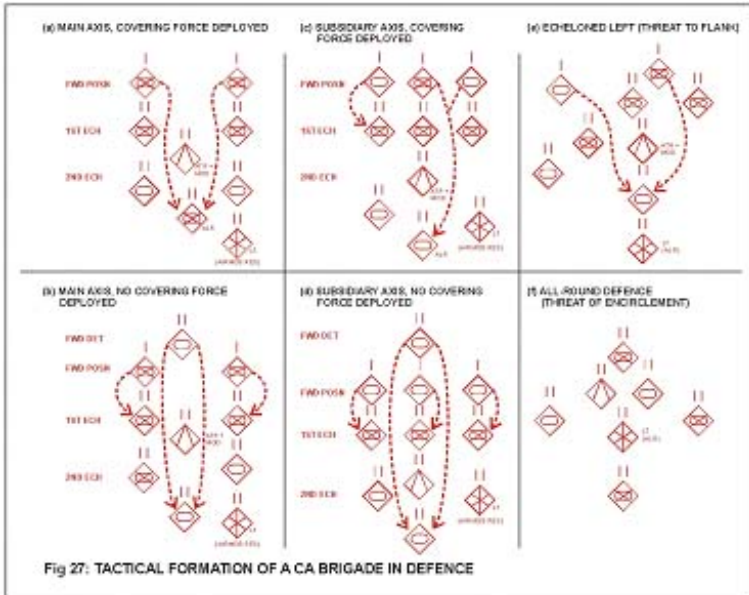


Figure 2-4-38: Tactical Formation of a CA Brigade in Defence

COUNTER-ATTACK

213. A counter-attack is an offensive turn in a defensive operation or battle: i.e., it is mounted against an enemy who still possesses the initiative. It is used to wrest the initiative from the enemy and achieve a turning point in the battle. It will only be made if its outcome will substantially influence the future course of the battle and if it is all but assured of eliminating the enemy penetration.

214. **Types of Counter-Attack.** Counter-attacks may take three forms:

- a. **With a Decisive Aim.** The only form of a counter-attack considered by TRIPLE COMPACT in the past was one with the decisive aim of destroying an enemy grouping wedged into the defence, thus restoring the stability of the defence.
- b. **With a Limited Aim.** This is a new concept born out of manoeuvre defence, of which it is an essential

component (though it can also be used in positional defence). The purpose of such a counter-attack is not the destruction of the enemy but the reduction of his rate of advance and the consequent winning of time for the execution of a manoeuvre or preparation of a defensive position in depth.

- c. **The Destruction of Air Landings.** TRIPLE COMPACT stresses the early destruction of air-landings. If this is not achieved, the defence will be disrupted or even unhinged and troops will be tied down in containing the landing force.

215. **Counter-attacks with a Decisive Aim:**

- a. **The Place of Decisive Counter-attacks in Defence.** Such a counter-attack is considered the decisive moment of the defensive battle. For this reason, all available resources are committed to it. If it succeeds, it regains the initiative and alters the correlation of forces in favour of the defender, at least temporarily. Ideally it will help to create favourable conditions for the mounting of a counter strike by an operational level grouping. At least, providing it is successful, it will restore stability to the defence and win crucial time. If, on the other hand, it fails, it will worsen dramatically the position of the defender. He will have expended his last reserves to little effect, often leaving them ill-placed to prevent enemy reserves or second echelons from renewing the momentum of the offensive and perhaps expanding its scope. For this reason, TRIPLE COMPACT will usually only mount a counter-attack if it is sure of success. Otherwise, counter-penetration is the preferred option. TRIPLE COMPACT will rarely mount a counter-attack with a decisive aim at levels below division/CA brigade. A second echelon battalion of a Basic Forces brigade will not be able to eliminate a penetration of more than company size, though that same force will be able to halt an enemy brigade if deployed for counter-penetration.

- b. **Preconditions for Initiating Decisive Counter-attacks.** Such a counter-attack is an attempt to wrest the initiative from the enemy and achieve a turning point in the battle. It thus presents many points of difficulty (in contrast to a counter-strike which is mounted after that turning point has been passed). It will therefore be made only if its outcome will substantially influence the future course of the battle and if it is all but assured of eliminating the enemy penetration. This implies the achievement of the following conditions:
- (1) **Intact Defence.** The attacker must be halted, or at least slowed to a crawl, if a counter-attack is to be preferred to counter-penetration. His forces and their C2 should be disrupted. He must already have committed his immediate reserves and be unable to generate more combat power before the move falls (i.e., effective interdiction of the battle area must be achieved for the duration of the counter-attack).
 - (2) **Correlation of Forces.** A favourable correlation of forces must be achieved. This means that the operational commander will have to have established local electronic-fire superiority and be able to give considerable fire and air support. The corps will need to muster a 3-4:1 superiority in artillery in the area of counter-attack. If the enemy is surprised and caught off-balance the same superiority in manoeuvre strength will suffice, but if the enemy has already transitioned to hasty defence, 4-5:1 will be required. So a divisional second echelon, consisting of an armoured/motorized brigade which is joined in the counter-attack by an as yet uncommitted second echelon battalion of a first echelon brigade, will be deemed capable of eliminating a

penetration of only 1–1½ battalions equivalent strength after the fire preparation has taken its toll. If an air-landing by say a battalion could be mounted to attack the enemy from the rear at the same time, the enemy force that is to be eliminated could be as strong as 2–2½ battalions in view of the synergistic effect of hitting the enemy from two directions simultaneously, one of which he is ill-placed to deal with. The favourable force ratio must be maintained for the duration of the battle by using air interdiction, remote mining and, if possible, air assaults to fix or delay enemy deep reserves which might be able to join the battle before it is over.

- (3) Local air superiority is essential to ensure the timely, undisrupted arrival of the countermove force, the neutralization of enemy fire support and reserves and the unfettered use of CAS and air assaults.
- (4) Surprise is crucial to catch the enemy before he has transitioned from an offensive to a defensive posture. This need not be a surprise as to intention or direction, though these are plainly desirable, but may merely be surprise as to the scale and timing of the move. If it is achieved, surprise may compensate for a less than optimum correlation of forces, particularly if the enemy is disorganized and his command or control impaired.

c. The timing and axes of a countermove are critical, especially the former.

- (1) **Timing.** As already mentioned, the move must be launched before the firmness and sustainability of the defence are compromised. In practice, this equally means, in the case of a division or CA

brigade level countermove, before the enemy has penetrated beyond the depth of the first echelon company strong points and widened his penetration and/or generated even tactical manoeuvre in the less densely defended depth of the MDA. This stricture faces the commander with an exceptionally difficult problem of timing. To illustrate this problem, assume that a second echelon brigade located 20 km from the forward edge of the MDA is to counter-attack elements of two enemy battalions that are wedged into the defence. With a line of deployment say 10 km from the line of contact, the time required to execute the physical move into contact will be at least 1½ hr by day or 2 by night. To this must be added: the time taken to finalize plans; issue orders; deploy traffic control, AD, engineer and chemical troops to support the march; deploy and organize fire support and interdiction measures; update coordinating instructions. Some of these measures can be accomplished even as the troops are moving, but even so they must double or more likely treble the time required to launch the attack. That means that the divisional commander must make his decision at least three to six hr before the move can be delivered. This requires very good intelligence and confidence in tactical calculations and foresight of a high order to identify in advance the enemy's culminating point. It also assumes that the commander will be able to bend the enemy to his will and so shape the battlefield that, when the move falls, it will do so at the right place and time. This is difficult to accomplish when the enemy enjoys an overall superiority and the initiative. It also puts a premium on much detailed prior planning and preparation and on efficient tactical and staff drills.

- (2) **Axes.** The direction of the counter-attack is determined by the aim, by the terrain, by the location of the enemy's principal grouping and high value weapons and also by the time taken to achieve a concentration on one axis rather than another. Normally, it is mounted against one or both flanks of the enemy penetration as the most likely way quickly to cut off spearheads from their reinforcements, attack enemy fire support weapons and CPs and split up and destroy his forces piecemeal. However, head-on moves to cleave the enemy are not excluded: they may be dictated by the terrain, or the lack of time to move forces to a flank when that would prejudice surprise, or when it is necessary to re-establish the defence on a specific favourable line. Whichever axis is chosen, routes to the line of departure and deployment lines will have been chosen and prepared in advance, and lines to cover them should be firmly held. (Counter-attacks are planned for two or three sectors, with one or two deployment lines per sector, about 5 km apart.) The necessary superiority over the enemy must be achieved. To this end, the division/CA brigade second echelon/reserve will be reinforced by forces of the first echelon on the direction of the counter-attack and, after regrouping, by other first echelon elements drawn from sectors not under heavy pressure. The counter-attack must be preceded by powerful fire strikes, and the bulk of the lower and higher formation level artillery will be committed to this end together with that of the second echelon and as much of the first echelon's as can be brought to bear. This is also seen as the time for the maximum committal of air support, with the especially important task

of isolating the penetrating enemy force and delaying the forward move of reserves.

- (3) **Scope.** As in any attack, the frontage will be dictated primarily by the requirement to achieve the required superiority on the attack sector. The depth of objectives will usually be determined by the need to restore the integrity of the defence, though there will always be the possibility of exploiting success and advancing beyond the forward edge, especially if an operational level counter-strike is intended and such exploitation would support it. TRIPLE COMPACT is aware of the opportunities offered by early success against an enemy defeated while still in an offensive posture: once the dense crust of the enemy grouping is pierced, there will often be little depth and tactical manoeuvre will become correspondingly easier.

216. **Counter-Attacks with a Limited Aim.**

- a. **The Place of Limited Counter-Attack in Defence.** Such counter-attacks are not intended as an attempt to wrest the initiative from the enemy and create a turning point in the battle. They are not mounted to retake ground (any that is gained will probably be given up again shortly). They are executed to achieve one or more of the following objectives.
- (1) **Gaining Time.** Gaining Time is often critical to the defender as he is in a reactive position and the enemy will be trying to ensure that his reactions are belated and inadequate. A limited counter-attack can impose a temporary check on the enemy giving a second echelon or reserve (often an airmobile reserve) time to occupy a defensive position in the rear and organize its system of fire. This may be necessary in several circumstances, for instance when

remote mining and/or air attack has delayed the move of a counter-penetration force or when the enemy has achieved surprise and made rapid progress on an unexpected axis.

- (2) **Disrupting an Attack.** Just as a limited counter-attack can help restore balance to the defence, it can also be used to disrupt the cohesion of an enemy thrust. A spoiling attack against part of an offensive grouping can be used to turn a powerful move into successive, ill-coordinated jabs. This will increase the prospects of a defending force repulsing the attack.
- (3) **Assisting a Withdrawal.** A defending grouping may be required to fall back to occupy a defence line in depth or a switch line but be unable to break clean. A counter-attack may enable it to do so by distracting the attacker and disrupting him.
- (4) **Deception.** Wherever possible, a limited counter-attack will be mounted in support of a decisive countermove, either prior to the latter or simultaneously with it. The aim will be to distract the enemy and leave him uncertain, for a time, as to the true direction of the main thrust.
- (5) **Causing Casualties.** Although one of the above aims will usually be primary, the infliction of losses on the enemy will be a by-product. These are important per se but they also instil a mood of caution in the enemy, thus reducing the tempo of his advance, and they leave him in continual uncertainty about his possession of the initiative.

- b. **Characteristics of Limited Counter-attacks.** Limited counter-attacks will be mounted much more

frequently than decisive ones, and at much lower levels: TRIPLE COMPACT anticipates their execution by battalions and even companies.

- c. **Correlation of Forces.** As the effect on the enemy that is sought is merely local and temporary, limited counter-attacks can be launched with much poorer force ratios than would otherwise be the case. Even parity in the immediate area of the action is considered acceptable. However, every effort will be made to make the move seem stronger than it is. This can be done through the massive use of smoke, not only to conceal the attacking force but also to the flanks and rear to suggest a wider frontage and the approach of reserves. Limited counter-attacks will also receive the maximum fire support that can be brought to bear. This is designed to make them appear more serious, to compensate for a poor correlation of forces and to ensure that the grouping employed does not become decisively engaged but can withdraw after achieving the aim.
- d. **Objectives.** Objectives will be shallow and there will be no consolidation on them after success. Rather, the counter-attack force will pull back under cover of an AT screen as soon as the enemy has completed his regrouping to destroy it.
- e. **Surprise.** Surprise is vital in limited counter-attacks. If the enemy has already transitioned to hasty defence and organized his system of fire, the attack will be repulsed with heavy losses and no commensurate gain. It is, of course, much easier to take advantage of fleeting opportunities in launching small-scale jabs as the amount of coordination required is less than with a major effort.

217. **Countering Enemy Air Landings.**

- a. **The Threat.** TRIPLE COMPACT anticipates that a division or CA brigade facing the enemy main effort might be subjected, in 24 hr, to up to three to four

airmobile attacks, with one in battalion strength. There are also likely to be landings by 8–16 raiding and RGs and patrols. These must be effectively countered if the defence is to be maintained.

- b. **The Fly-In.** Ideally, the airmobile force is destroyed, or at least attrited and disrupted, before it can land. This process will usually start at the operational level with air, missile and long-range artillery strikes on mounting areas. During the fly-in, the enemy will be attacked by artillery, fixed wing fighters and attack helicopters (the latter being more effective against low level penetrations). The defending ground forces' formation will also take measures to repulse the air landing force in flight. Smoke screens and controlled, directional anti-helicopter minefields will be prepared on likely flight paths to hamper manoeuvre of and cause casualties and disruption to low flying streams of helicopters. In addition to area AD cover, AD ambushes will also be sited to inflict surprise attacks on possible approach routes. Likely landing sites can also be denied by explosive and non-explosive obstacles and concealed air defenders, having been determined in advance by a map appreciation and assessment of patterns of enemy recce activity and AD suppression and other deep fire strikes.
- c. **The Landing.** Airmobile and air assault forces are seen to be especially vulnerable during their landing; they can generate little fire and suffer from C3 and logistic problems (for a period of up to 40–50 min in the case of a battalion attack). Accordingly, immediate counter actions by even small forces during the landing are seen to be more effective than a later move by a larger force. Thus, for instance, a battalion-sized assault force can be suppressed by six to eight times less artillery if engaged within 15–20 min of landing than would be required once the enemy has consolidated on the ground after three quarters of an hour or so. It takes up to 30–35 min for the enemy to land a battalion. If the decision is taken to launch both attack helicopters and the move

of an ALR at the start of the enemy's fire preparation (i.e., 15–30 min earlier), there is a good chance that the enemy landing will be destroyed before it can organize on the ground. Prompt reactions depend, of course, on comprehensive pre-planning and preparation. This will include: obstacle creating and AD measures; the preparation of artillery fire plans (including remote mining to constrain manoeuvre); ECM directed against enemy C3, air support and recce; the actions of both ALRs and of sub-units nearest to the landing sites.

- d. **After the Landing.** The enemy's employment of air landings is interrelated with other actions. He will probably employ them against the weakest part of the defence's alignment. Thus the main effort of anti-landing defence will be concentrated on sectors not included in the battalion defended areas. When the enemy lands within the sector of a first echelon brigade, the divisional/CA brigade ALR and/or ATR and MOD and/or elements of the second echelon will be used to destroy the enemy or at least contain him and prevent the enemy's main forces from linking up. If the ALR is committed to the defence of the first echelon, a new one must be created (probably from the second echelon) in case the enemy executes a further landing.

SECTION 20 WITHDRAWAL

218. **General.** Historically, TRIPLE COMPACT has regarded withdrawal as permissible only as a last resort when faced with defeat. It was always forced and so unpalatable was its prospect that TRIPLE COMPACT did not train for its conduct. In future war, by contrast, it is considered likely that withdrawal will be as common as the advance. In a dynamic situation characterized by broad manoeuvre and the intermingling of friendly and enemy forces, all directions of movement are equally valid and must be trained for.

219. **Aims of Withdrawal.** A withdrawal may be executed to remove troops from under the expected strikes of precision weapons;

to occupy a more favourable position or line; to gain time; to lure the enemy into a tactical pocket for destruction; to disengage forces so that they can enjoy freedom of action to execute another manoeuvre (e.g., deliver a surprise blow against the enemy from another direction).

220. **Types of Withdrawal.** The conduct of a withdrawal will vary according to the circumstances in which it is embarked on. These are as follows:

- a. **Reasons.** A withdrawal may be either intentional or forced. In the former case, it can be carefully prepared beforehand. In the latter preparations may be perfunctory owing to shortage of time.
- b. **Actions of the Enemy.** Withdrawal can take place from a position in or out of direct contact with the enemy. If performed out of contact, it is merely an administrative problem. If forces are in contact, it may be executed without enemy interference (though it would be folly to count on this), under fire or under pressure from ground attack (including air assault).
- c. **Phases.** Whether premeditated or forced, withdrawal takes place in three phases. This paragraph will concentrate on the level of battalion:
 - (1) Logistics Elements are pulled back before any of the troops in contact. They will be preceded by march security elements in case the enemy executes an air landing in the depth. These will be provided from the second echelon.
 - (2) **Removal from Contact.** This phase, which ends when the main body is able to transition into tactical march formation, is the most difficult. Disengagement will take one of two forms.

- (a) If the enemy is passive, covering units or sub-units (e.g., from a battalion, usually one company from the first echelon or a platoon from each first echelon company) will remain in the position and maintain the pattern of combat activity which preceded the withdrawal. The main body moves covertly into concealment from observation, embusses infantry into their IFVs and moves into company assembly areas not nearer than 2–8 km from the line of contact. The companies then pull back to a battalion assembly area usually 10–15 km from the line of contact. (As removal from a battle is the mirror image of attack, distances for forming pre-battle and tactical march columns are analogous to distances for deployment in the attack.) Usually the second echelon moves to the battalion assembly area first. Covering elements move last, displacing when the main body is ready to retire in tactical march column. They may rejoin their parent units/sub-units or be used to reinforce a rearguard or other security elements.
- (b) If the enemy is attacking he must be checked by fire and/or a limited counter-attack before the withdrawal can start. Covertness will be impossible to achieve, so compensation is sought in the suddenness of its commencement and the rapidity of its execution by the entire force simultaneously, less covering elements which will,

of course, have to be stronger than when the enemy is passive. Such a forced withdrawal is covered by EW, much smoke, artillery fire and remote mining and perhaps air strikes.

- (3) The move to the new defended/concentration area will likewise vary in conduct according to the actions of the enemy.
 - (a) If the enemy remains passive, the main body moves without halting on intermediate lines until it reaches its assigned area. In essence, this takes the form of a protected march from the front, with normal march principles applying, but with dispositions opposite to that applied during the advance (e.g., the rear services march at the head of the column). A FD may be sent on ahead to secure a feature on which an enemy air landing could disrupt the march. A brigade or division will form a rearguard on each route employed. Units will only form a rearguard if it is not covered by one organized by the senior commander, otherwise a RSP will suffice. The structure of the rearguard is analogous to that of advanced guards. The level of flank security assigned will depend on the threat level.
 - (b) If the enemy conducts a pursuit, the conduct of a withdrawal will follow the pattern of manoeuvre defence as described earlier. Depending on the concept of the

senior commander, it will be practised by the whole of a formation or unit or merely by the rearguard while the main forces hasten to the new location. Rearguards can only withdraw from a delay position when given permission by the senior commander.

221. Organizing a withdrawal is seen to be a difficult task for commanders and units. In addition to the usual issues, the commander must address the following questions: What is the final line of withdrawal and by what time must it be occupied? What must be the composition of covering and march security elements? What should be the order of withdrawal from contact? Where should assembly areas be sited and what axes be used for withdrawing? What delay lines can be used to check pursuit? How can wounded men and damaged equipment be evacuated? What engineer recce, route preparation and obstacle creation will be necessary? What cover and concealment, natural and artificial, can be used to help the withdrawal and how can the enemy be deceived?

SECTION 21 RIVER CROSSING

222. **General:**

- a. **Attitudes About Water Obstacles.** There was a time when TRIPLE COMPACT regarded river and canal crossings as routine actions that could be executed from the march, without a pause before the obstacle or in the bridgehead, and with little slackening of offensive impetus. In practice, this proved difficult to live up to, even in training. Now obstacle crossings are regarded as being amongst the most potentially dangerous and difficult of operations. Ferry and bridge sites and the concentrations of troops behind them, are very vulnerable to precision, strikes. At any stage in a formation's attempt to cross, the enemy may be able to sever the links between a bridgehead and the

forces waiting to cross. They can then destroy the former in a counter-attack before it has become sustainable and inflict severe damage on the latter as they bunch on the obstacle.

- b. **Equipment.** Recognizing that water crossings will loom as large in future war as in the past (in withdrawal and regrouping as well as in the advance), TRIPLE COMPACT has given an amphibious capability to as many combat vehicles as possible and provided sufficient quantities of engineer crossing means.:
- (1) **Combat Equipments.** Given favourable bank and bottom conditions, T62, T64 and T72 can schnorkel across a river up to 5.5 m deep and LECLERC can snorkel with preparation to 4 m deep. BMPs, BTRs, AFV432s, M113s, all recce vehicles (less SCORPION), some of the lighter SP artillery pieces and some AD vehicles can swim (AFV432 and M113 need two hr preparation time), provided the entry and exit gradients are not more than 20–25 % (though wheeled vehicles are limited to an exit gradient of 10 %), and provided the current is not more than 2 m per second.
 - (2) **Engineer Equipments.** With their organic tank-launched bridges MTU-20 or MTU-72, units can cross gaps of up to 18 m in width, i.e., about 60 % of the obstacles they are likely to encounter. CA brigade, engineer assault crossing battalions have PTS amphibians and PMM-2, whilst the CA Corps, MDs and armoured divisions also have PMP pontoon/raft bridging. The PMM-2 system can be used to construct medium or heavy ferries or bridges over wide rivers. Amphibians with trailers can be used to transport soft-skinned vehicles and artillery. Varieties of assault boats are also available.

223. **Forced River Crossings:**

- a. **Foresight.** Should an opposed crossing of a major obstacle be inevitable, the decision for it is made well in advance. The division or CA corps commander issues combat missions at least one to two days in advance of leading lower formations reaching the river or canal. This is so that combat groupings, engineer, air and AD support, assault landings and camouflage/deception measures can be organized ahead of time.
- b. **Level of Command.** Battalions/BGs are deemed capable of dealing with small obstacles as long as requisite MSDs are attached. If a river or canal is 20–100 m wide, forcing it will be a division or CA brigade task. The crossing of medium-sized and major rivers (100–150 m wide and over) must be organized at division or CA corps level. The following paragraphs will concentrate on forcing actions by lower formations.
- c. **Recce.** Even more detailed recce than normal is required, especially by engineers. During the approach to the obstacle, continuous and active recce is conducted by RPVs, mobile patrol and static OPs.
- d. **The Approach to the Obstacle.** The tactical formation of a brigade must be adjusted as the obstacle is approached in order to force it from the march without a potentially dangerous pause for reorganization in front of it. Motorized or mechanized CA battalions should lead, as they can use the amphibious capabilities of their vehicles and light artillery to cross with minimum preparation. Artillery and chemical troops need to be well forward, as an opposed crossing usually requires heavy fire support and smoke cover on the approaches and during the crossing. Consolidation of the bridgehead will require strong artillery support to compensate for the initial absence of tanks. Engineer mine clearing means and

amphibians, will also have to move well up the tactical march column, as it will be essential to get tanks, medium artillery and air defenders into the bridgehead as rapidly as possible. This is to ensure its early expansion to a viable size and its retention in the face of counter-attacks.

- e. **Seizing a Bridgehead Early.** Almost invariably, an attempt will be made to establish a bridgehead before the advanced guards of the formation arrive. Ideally, an operational air landing will already have done this. If, however, self-help is required, a FD and/or an air landing detachment or group will be dispatched to seize a crossing, if there is any chance of doing so before the enemy can establish a strong defence. A FD will move at least two to three hr ahead of the main body, but it may well be expected to seize and hold a crossing for up to 12–18 hr before relief, depending on the enemy's ability to react and the availability of fire support. It will of course have attached assault-crossing means. An air landing force may be used to seize a bridgehead, either before the FD, which will then reinforce it, or independently. In the latter case, given its lack of armoured firepower and paucity of AD, it will not be expected to hold for as long as a FD.

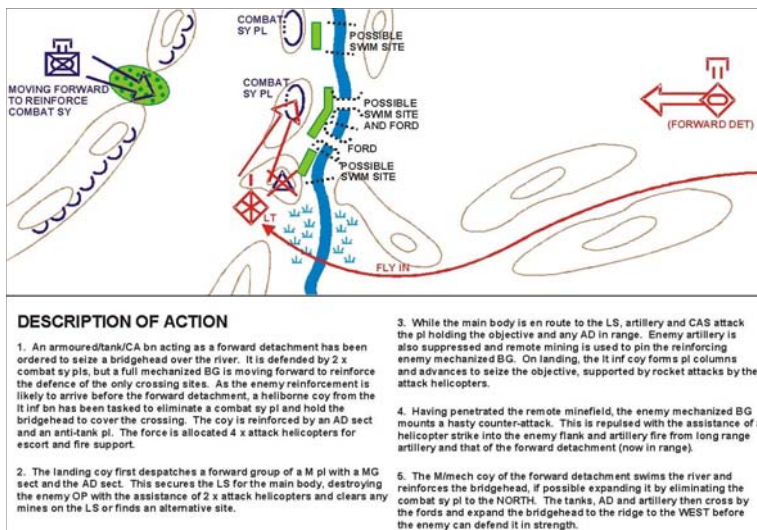


Figure 2-4-39: A Forward Detachment Forces a River Line (in Cooperation with an Air Assault)

- f. **Assault Crossing by the Main Forces.** Where there is no bridgehead secured beforehand and a forcing is necessary, and if the enemy is weak, advanced guard battalions/BGs will try to gain a foothold before the arrival of the main body. For this purpose, each might receive a heavy ferry and an amphibian platoon. These attacks are likely to be supported by vertical envelopment of the defence by an air assault detachment or group. If the enemy is too strong for a crossing to be ‘bounced’, unit level assaults with full artillery and attack helicopter support will be mounted. First echelon battalions/BGs will seize bridgeheads, which will deny the enemy direct fire, at least by small arms, against ferry, amphibian, fording and schnorkeling sites. Having secured some viable battalion/BG-sized bridgeheads, second echelon elements will cross using tank fords or schnorkeling and engineer assets. Bridgeheads will then be linked up. Subsequent action at formation level will depend on the enemy strength and reactions, and the senior commander’s concept. The formation’s second

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echelon may be used to link up bridgeheads until there is a brigade seized one, through which second operational echelon elements may develop the offensive. If the enemy is weak, however, the formation may pass its own second echelon through the most developed bridgehead and continue the advance.

- g. **Crossing Sites.** The number of crossing sites will depend on the terrain, the enemy’s strength and deployment, and the tactical formation of a brigade. As a rule, each first echelon battalion will require one swim site per first echelon company (against token resistance, all may cross in the first echelon) and one to two alternates. Once the first echelon is over and there is a site free from at least small arms fire, heavy ferries and amphibians use the same sites (perhaps using smoke cover against long-range AT weapons). Tanks, artillery and AD cross using these means and fording or schnorkeling sites where these exist.

- h. **Timings.** For example, a battalion/BG forcing a river crossing from the march:

Time	Action
H-1.5 hr	CRP reaches obstacle in area selected as a result of previous recon by senior commander. Battalion/BG commander gives his orders for the forcing. Heliborne OP made available
H-20 min	Artillery preparation begins
H-5 min	Tanks and AT weapons deliver direct fire
H-hour	Two first echelon companies swim across in BMPs/BTRs (non BMP/BTR battalions have to use assault boats), supported by direct and indirect fire and possible attack-helicopters

H+30 min	Second echelon motorized company crosses. In a CA battalion, amphibious AT weapons also cross
H+1–2 hr	Tank company crosses on heavy ferries. Artillery battalion crosses, one battery at a time
H+2 hr	Bridgehead consolidated to depth of about 3 km. Enemy counter-attacks repulsed

Figure 2-4-40: Battalion River Crossing Timings

NOTES

1. The BAG and in CA battalions, the BnAG, support the crossing. Smoke cover could be used to conceal approaches to the obstacle.
2. The attack could be coordinated with a heliborne assault.
3. If BMPs cannot exit the river, they can be beached on the far bank and recovered later.

CROSSING WITH DETAILED PREPARATION

224. **General.** This would normally be used against a large, well-defended obstacle, but might also become necessary if a crossing from the line of march had failed.

225. **Advanced Guard.** When an assault from the line of march fails, or is not tried because of the strength of the opposition, the advanced guard will clear the home bank and hold it. It will probably undertake recce by battle over the obstacle with a dismounted company in assault boats to locate enemy positions and defences.

226. **Main Body.** When faced with a well-defined obstacle the main body will probably move into brigade concentration areas some 15–20 km back from the river, beyond the range of most artillery.

227. Infantry battalions will always lead the assault, crossing in battalion waves on a brigade frontage of about 5 km, advancing without pause from the concentration areas to the far bank. A motorized battalion will cross either in pre-battle or assault formation, depending on the width and entry and exit slopes of the crossing sites and on the strength of the opposition. IFVs enter the water at H-hour, and on reaching the far bank, the infantry dismount and begin clearing operations. They will be supported from the near bank by direct fire from tanks, AT weapons and artillery. If the enemy has mined right up to the river bank, the IFVs may be preceded by amphibious MTK mine clearers which can fire explosive hoses over the minefield and create gaps for the IFVs to go through in pre-battle formation.

228. Tank battalions are unlikely to schnorkel against opposition until a firm bridgehead has been established on the far bank as de-sealing is necessary before they become combat effective. Tanks from the first echelon brigades are therefore likely to cross by ferry (from which they can fire their guns).

229. Ferries and Amphibians may be in operation as early as H+20–30 min, depending on the tactical situation and requirements for bank preparation. Priorities for crossing will usually be tanks, artillery and AD.

230. **Bridges.** Construction starts as soon as the enemy is denied the ability to subject the crossing to direct fire. A bridge could be opened as early as H+90 min, though this again will depend on the tactical situation and bank preparation time (usually much longer than construction time). If, however, the air situation is unfavourable, bridges may only be used during periods of limited visibility and tucked into the bank and camouflaged at other times.

231. **Artillery.** Opposed river crossings often require even more fire support than attacks against a well-prepared enemy.

- a. CA BnAGs and Basic Forces BAGs will be within 3 km of the river; DAGs and CA BAGs 3–5 km back.
- b. The CAG will fire to support divisions/CA brigades on the corps' main axis. Some howitzers will be used in the direct fire role, as will tanks and ATGM.

- c. The preparatory fire for a well-defended obstacle will be similar to that of an attack from a position of close contact. Intensive air attacks are likely to be called at, or shortly before, H-hour and, depending on visibility, smoke may be used in great quantities.
- d. Artillery battalions will cross the obstacle by batteries, one crossing while two remain deployed. Amphibians will normally swim and amphibious artillery and trailers for towed weapons and their prime movers may be available as early as H+30 min.

232. **AD.** Both because the forcing of a river line may have profound implications for the stability of the defence and because crossings present tempting targets, a major air effort may be expected against the most promising crossings. Higher formation may well reinforce divisional/brigade AD with extra assets and arrange a fighter CAP. Unit level AD will cross early and divisional/brigade resources will ensure a dense, overlapping area coverage of its crossing.

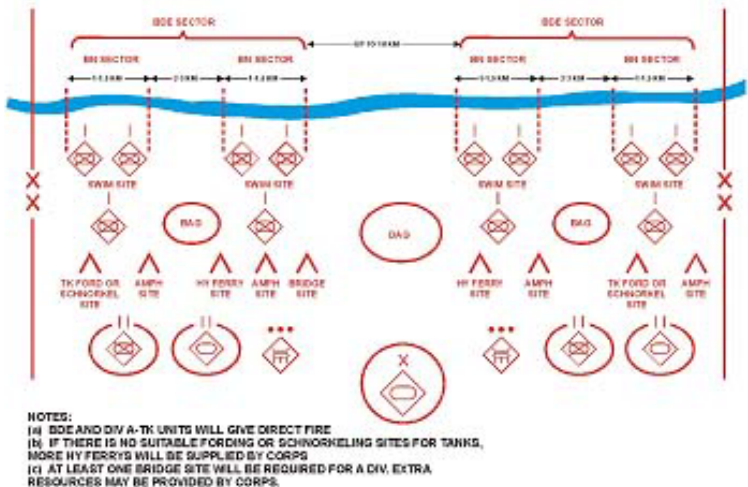


Figure 2-4-41: River Crossing Sites: Requirements for Formation (MR Division)

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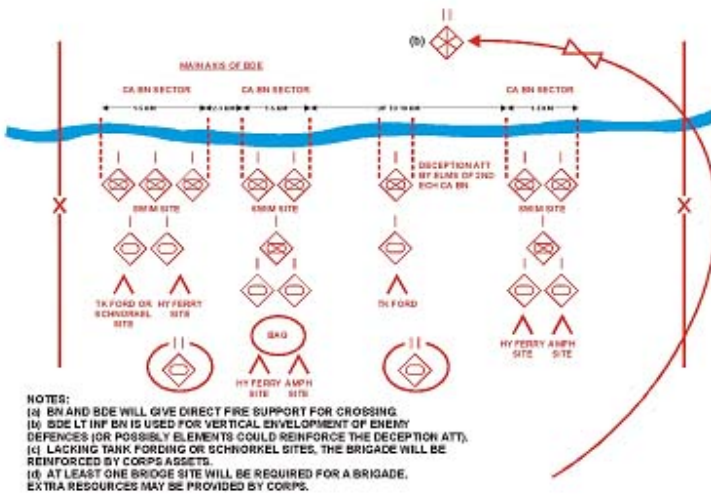


Figure 2-4-42: River Crossing Sites: Requirements for Formation (CA Brigade)

PART 2—CHAPTER 5 COMBAT INDICATORS AND DECEPTION

1. **Introduction.** This guide is intended to assist intelligence staff in producing intelligence, surveillance, target acquisition and reconnaissance (ISTAR) collection plans, in order to determine enemy intentions, capabilities and vulnerabilities by the correct identification and interpretation of combat indicators. In addition, a section explaining deception and counter-deception has been included; these topics are relevant in interpreting combat indicators. Not all intelligence staff will have access to the ISTAR assets required to identify all the indicators referred to in this guide, but a variety of indicators have been included in order for the guide to be of use to as wide a range of intelligence staff as possible. In many cases, TRIPLE COMPACT norms and tactics have been adopted in the guide. The inclusion of them is considered valid because Former Soviet Union (FSU) legacies in former client states include equipment and doctrine. In addition, many tactics are common to all armies regardless of the origin of their doctrine.

ENEMY FORCES COMBAT INDICATOR GUIDE

2. Section 1—Offensive.

ACTIVITIES	REMARKS
Recce	Indicator
Increase in air reconnaissance (recce)	Air recce is usually more active prior to an attack and is a likely indicator to possible objectives
Increase in patrols (especially engineer and armoured)	Confirmatory route recce may be indicative of enemy intended main routes
Administrative build-up	Indicator
Forward movement of bridging assets	These assets are usually located near the forward line of enemy troops (FLET) and collocated with tactical units of the attacking force. However, such assets

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ACTIVITIES	REMARKS
	may also be echeloned to the rear
Forward dumping of fuel and ammunition	Build-up of logistics and maintenance assets indicates increased capability to support offensive operations. Supply and evacuation points usually are located forward for an attack. Technical observation points are established close to the FLET. Repair and evacuation groups are located at assembly points close to the FLET to repair or evacuate damaged vehicles
Increase in medical installations	Existing hospitals may be commandeered or staff supplemented by military medical personnel. Field hospitals established and medically-trained civilians recruited and reservists recalled. Forward medical units usually move to support anticipated medical and evacuation requirements
Stoppage of leave/calling up of reserves	Probable mobilization of forces
Abnormal logistic radio traffic on command nets	To expedite supplies to units about to conduct offensive operations, commanders may get personally involved
Establishment of auxiliary airfields and activation of dormant ones	Additional airfields may be used on the premise that they may not be targeted by ISTAR assets. They may also be used to disperse air assets and to support increased logistic operations
Tactical build-up	Indicator
Conducting drills and rehearsals in rear areas	Drills or rehearsals may precede major attacks. This is particularly true of attacks against fortified positions or strongly defended river lines
Establishing or increasing counter-recce screen	Counter-recce screens are used to cover possible assembly areas, routes of troop movement of regrouping of forces to be used in the attack

ACTIVITIES	REMARKS
Recce and destruction of friendly forces defensive obstacles	Patrols recce friendly forces obstacles to determine a plan for clearing lanes. The patrols will generally only destroy such obstacles that will not disclose the direction of the main attack
Concentration of armoured, infantry and artillery forces	Prior to launching an attack, troops may be moved to assembly areas from which they can deploy
Dispersal of tanks and self-propelled (SP) artillery to units	Tanks generally accompany leading waves of assault mechanized units with SP arty closely following
Movement forward of surface-to-air missile (SAM) fire-control systems	SAM control radars require time to be established. TRIPLE COMPACT norms establish air defence cover before moving other forces forward
Forward movement of surface-to-surface missiles (SSM)	Offensive operations also occur in depth. Forward movement of SSMs places friendly forces airfields, supply areas and headquarters under threat, especially from chemical warfare (CW) attack
Concentration of mass towards either of both flanks within first echelon defensive area	Single or double envelopment is normally attempted in the offensive. Armoured and mechanized units on either or both flanks may indicate a single or double envelopment operation
Establishment of forward command post (CP) close to the FLET	Preceding an attack, an auxiliary CP is usually established
Armoured anti-aircraft artillery (AAA) systems located in forward areas	Armd AAA systems are deployed prior to an attack to protect assault forces and to facilitate forward movement
Massing of artillery units	The presence of artillery groups at each level of command indicates the main axis of advance

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ACTIVITIES	REMARKS
Signals intelligence (SIGINT) assets located forward	SIGINT and jamming assets will move well forward, possibly to within 2–4 km of the FEBA, before an attack
Radio silence on nets organic to the brigade, division or corps	Attacker will attempt to deny the defender information, which can be developed from intercepting radio traffic
Deception operations to cover unit moves	Attacker will attempt to deceive defenders as to the formers true location; e.g., false traffic on radio nets to disguise moves. Psychological operations (PSYOPS) (Radio and TV) will also be conducted
Demonstrations and feints	Local small-scale attacks or demonstrations involving mech units, armour and arty frequently precede a general attack
Forward units positioned on relatively narrow fronts and depths	<p>TRIPLE COMPACT doctrine calls for a battalion or battle group (BG) breakthrough zone of:</p> <ol style="list-style-type: none"> 1. 2–3 km for motorized battalions ups) or BGs within an assigned attack frontage. 2. 3–4 km for CA battalions within an assigned attack frontage. <p>Battalion/BG headquarters is usually located approx 4 km from the FLET during normal attack posture</p>
Extensive smoke operations	Smoke operations mask the movement of units during the period immediately prior to an attack
Clearing lanes through obstacles within own positions	This is generally done to facilitate forward movement and grouping, particularly at night
Increase in agent activity in defenders' rear area	Attackers will attempt to prevent or disrupt forward movement of supplies and reinforcement of their enemy

ACTIVITIES	REMARKS
Fire Plan	Indicator
Extensive spot and barrage jamming of defenders' front-line units' communication nets and tactical air-control systems	Extensive jamming will precede an attack to cause the maximum disruption of the defenders' command and control communications. However, jamming will generally cease when attacking forces reach the main defensive area to prevent interference with their own communications
Systematic air bombardment	Prior to launching an offensive, a systematic bombardment may occur of key positions along the main axis of advance
Extensive artillery preparation	Offence is built around the striking power and shock of massed artillery. Preparation of one-half to one hour may precede an offensive
Airborne or air-assault insertions into defenders' rear area	Attackers will attempt to conduct offensive operations throughout the depth of the defence. Air assault/desant attacks are also made to facilitate difficult operations such as river crossings
Extensive attempts to destroy weapons of mass destruction (WMD) storage areas and delivery means by air, artillery and sabotage	TRIPLE COMPACT doctrine calls for the elimination of defenders' nuclear weapons by any means and considered that defenders are more likely to use nuclear weapons than attackers
Movement	Indicator
Traffic control units marking routes to the enemy forward line of troops (EFLT)	Traffic control points are employed throughout the march routes to facilitate march formations. Allied border guards assist by controlling traffic through the barrier areas of the border
Location of maintenance parties on lateral routes	The establishment of maintenance parties on lateral routes facilitates march operations

3. **Section 2—Meeting Engagement/Pursuit/Advance.**

ACTIVITIES	REMARKS
Recce	Indicator
Increased air and ground recce over routes and obstacles	Accurate information concerning routes and obstacles speeds-up the advance
Increased counter-recce activity	Counter-recce attempts to prevent the defender from gaining information about the attackers' dispositions and movements
Administrative Preparation	Indicator
Construction of forward airfields	Forward airfields increase the capability to mount fighter ground attack (FGA), close air support (CAS) missions and Air Assault operations
Forward movement of maintenance facilities. Forward dumping of fuel, engineer stores. Increase in traffic control organization	Attackers will wish to maintain a high rate of advance
Opening of reserve formation headquarters, change in command nets	Probable regrouping of forces
Tactical Preparations	Indicator
Forward movement of columns dispersed laterally in two or more mobility corridors	Attackers will generally prefer to use march formation when moving to contact
Road junctions, bridges and other key features occupied by either air-delivered forces or forward detachments	Attackers will wish to control high-speed avenues of approach into defenders' key areas

4. **Section 3—Defence.**

ACTIVITIES	REMARKS
Recce	Indicator
Presence of recce screen	Recce screen (both patrols and static OPs) will attempt to determine

ACTIVITIES	REMARKS
	attackers' axis of advance
Defensive Preparation	Indicator
Entrenching and erecting barbed wire	Indications of preparations to hold the position
Presence of demolitions, obstacles and minefields	Obstacles are placed to cover avenues of approach to defensive positions
Preparation of battalion and company defence areas consisting of company and platoon strong points	Defence is based upon holding prepared defensive areas and counter-attacks by tank-heavy forces
Preparation of alternate artillery positions	In normal defensive operations, three positions are prepared for each firing battery in an artillery manoeuvre area
Preparation of dummy artillery observation posts (OPs) plus the presence of dummy positions	Dummy artillery Ops preserve the effectiveness of the actual positions by deceiving attackers as to their location
Presence of dummy CPs	Deception to conceal the true CP locations
Administrative Preparation	Indicator
Restocking ammunition, engineer supplies and equipment	Restocking ammunition reduces the load on logistics throughout the system once the battle begins. Engineer supplies and equipment may be used to construct fortifications and erect obstacles
Establishment of a security zone	A security zone is established to enable fortifications to be constructed away from immediate danger from both direct and indirect fire weapons
Decrease in radio intercepts	In the defence, greater emphasis is placed on line communications to increase security
Increased activity of SIGINT units, but decreased activity of electronic countermeasures (ECM) units	Increased activity is an attempt to gain information about the attackers prior to an attack. ECM is an active measure

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ACTIVITIES	REMARKS
	and would betray a unit's location
Deployment	Indicator
Forward units deploy on relatively wide fronts and depths compared to offensive posture	TRIPLE COMPACT norms call for the defence zone of a motorized battalion/BG to have a frontage of 3–5 km (CA battalion 5–8 km) depending upon terrain and the combat availability of forces. Depth varies also: motorized battalion/BG 2.5–4 km; CA battalion 3–5 km
Deployment of mechanized units in good defensive positions. Preparation of company strongpoints on key terrain	Dominating terrain that has good fields of fire and is relatively inaccessible to armour, is usually selected for a defensive position
Formation of anti-tank (AT) strongpoint	AT strongpoints are formed in depth along logical avenues of approach for armour. Mines, ditches and other obstacles may fortify these positions
Additional AT units attached to 1st echelon manoeuvre units	All defence tactics place great emphasis on destroying tanks early. If the tanks can be stopped the attack will generally fail
Presence of large AT reserves with Mobile Obstacle Detachment (MOD)	Large AT reserves are established with MOD to provide a quick reaction AT capability
Large tank-heavy units located in assembly areas to the rear	Tank units are held in assembly areas for employment in counter-attacks/counter penetration
Deployment of Artillery, MBRL and SSM units towards the rear	Depth fire is not as critical in the defence as in the offence. Also, in the rear, the assets are less likely to be destroyed
Air Defence (AD) systems located in rear areas	Destruction of logistics, command and artillery units are high priority missions for attackers' air strikes
Employment of roving artillery	Roving guns and batteries are part of

ACTIVITIES	REMARKS
	normal defensive operations

5. **Section 4—Withdrawal.**

ACTIVITIES	REMARKS
Withdrawal from defensive positions before becoming heavily engaged	In delaying actions, units avoid becoming decisively engaged
Successive local counter-attacks with limited objectives	Counter-attacks are employed to assist in disengaging first echelon units rather than to gain ground or restore positions
Frontages up to four times that normally assigned to units on the defensive	Forces conducting a delaying action are normally assigned frontages in excess of that normal for units on the defensive
Discovery of dummy minefields	Dummy minefields are easier and quicker to prepare, but can cause the same delay to advancing pursuers
Forward concentration of infantry fighting vehicles (IFVs)/armoured personnel carriers (APCs)	IFVs/APCs are concentrated forward to facilitate a rapid withdrawal of the main body
Administrative Preparation	Indicator
Evacuation of logistical and medical services and all non-essential transport	Non-essential services are generally withdrawn first to avoid being overrun or hindering the evacuation of tactical units
Establishment of small dumps of explosives and landmines near bridges and other demolition targets	Withdrawing forces will attempt to delay pursuit by destruction of transport infrastructure and the creation of obstacles
Movement of location of traffic control units or parties to the rear, along the lines of communications that are to be used by major units	Marking withdrawal routes

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ACTIVITIES	REMARKS
Preparation of future defensive lines behind main defensive structure	If the withdrawal is deliberate, withdrawing forces will require new positions ready prior to withdrawing
Route Denial	Indicator
The systematic destruction of bridges, communications facilities and other assets	Deliberate demolitions and scorched earth tactics may be employed in withdrawals
Engineer recce and MODs detected along lines of communications, tunnels, built up areas, dams and dykes	Withdrawing forces will begin systematically to destroy all crossings and construct obstacles as they withdraw
Tactical Preparation	Indicator
Presence of deception operations e.g., dummy radio traffic	Withdrawing forces will attempt to portray a normal defence
Jamming or destruction of attackers' air and ground battlefield surveillance radar	Battlefield surveillance radar are capable of detecting a withdrawal at night or during poor visibility conditions
Rearward movement of long-range artillery	Long-range artillery will be moved back to new positions before the withdrawal takes place, to cover the operation
Movement of small recce parties to the rear	Withdrawing units need current recce along withdrawal routes
Presence of rear guard covering force	Rear guard covering force will cover movement of withdrawal of main body. The rear guard would fight a delaying action if required and minimize losses; it permits the main body more freedom of movement
Rearward move of headquarters	Indication of enemy force withdrawal

ACTIVITIES	REMARKS
Fire Plan	Indicator
Increase in artillery bombardment activity	Artillery fire assists in covering the noise of a withdrawal
Predominance of automatic weapons with the rear guard	High rates of fire compensate for reduction in number of troops and assists in masking the absence of troops
Smoke operations	Assists in covering withdrawing forces from view

DECEPTION

6. Deception is defined in AAP-6 as "Those measures designed to mislead the enemy by manipulation, distortion, or falsification of evidence to induce him to react in a manner prejudicial to his interests".

7. **Deception Operations.** It is frequently argued in Western military circles, that given modern surveillance means, surprise cannot be achieved; deception has become a largely forgotten skill in the WEST. TRIPLE COMPACT does not subscribe to these views: surprise and deception are central to TRIPLE COMPACT operational philosophy. Most nations are aware of which other nations pose a threat to them; the perceived threat being based on capability and intentions. In most cases, there will be operational plans for both offensive and defensive action, to be initiated in the event of a war. The TRIPLE COMPACT is also aware of the combat indicators on which the enemy intelligence services base their assessment. TRIPLE COMPACT is certainly aware of its potential adversary's preconception and their plan is to promote deception to confirm these preconceptions. Each stage of the plan will be implemented when the enemy falls for the previous one. A potential adversary can therefore be expected to devote time and effort to simulating combat indicators and other behaviour consistent with normal practice. The degree of time and effort will vary with each adversary; it would depend on their intelligence collection capabilities. In his book "*Stratagem, Deception and Surprise in War*", Barton Whaley analyzed 68

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historical cases of strategic deception between 1914 and 1968. He found that:

- a. Surprise was achieved in 92 % of cases; victory followed in 87 %.
- b. Out of 47 instances of operational and tactical deception in the same period, surprise was achieved and victory followed in 91 % of cases.
- c. In 10 examples where detailed military plans were compromised before an intended attack, half were carefully fabricated deception and half were genuine breaches of security. All five deception plans were accepted as genuine and four out of five plans were rejected as deception.

8. **Deception Planning.** In a deception operation, the skilled planner will generally work through the following process, whether consciously or not:

- a. An initial appreciation of the situation will be carried out of both enemy and own forces.
- b. The deception mission must be clearly defined and the following identified:
 - (1) The target of the deception (usually the enemy commander).
 - (2) The reaction required of the target, including location and timings.
 - (3) The reaction of any subsidiary targets (e.g., the enemy commander's planning staff).
- c. Identification of the perception required of the primary and subsidiary targets. In addition, the times by which these perceptions are to be formed and the duration for which they are to be held, must also be established.

- d. The deception story would be developed, consideration being given to the scenario types detailed in the example below. In addition, specific evidence conforming to the deception story should be developed to encourage the required perceptions. A check must be made to ensure that all other evidence reaching the target corroborates (or at least does not compromise) the deception story.
- e. The methods by which the evidence is to be disseminated must then be selected. In many circumstances, direct dissemination will lack credibility; indirect methods should be sufficiently diverse to ensure that some evidence reaches the target.
- f. In executing the deception plan, the target (and any potential unintended targets) should be constantly monitored, in order to assess the progress of the deception mission and to make any necessary adjustments. The deceiver should be in a position to detect any compromise of the plan at the earliest opportunity; if the target becomes aware that he is being deceived, he may deliberately provide feedback suggesting that the deception remains undetected; the initiative passes from the deceiver to the target.

9. Deception cannot be taught as a drill or standing operating procedure (SOP) since it often relies on originality and the unexpected for success; a counter deception SOP also cannot be provided for similar reasons, although there are a number of deception techniques which form the basis of all deception plans. Deception plans also need to be tailored to the specific circumstances prevailing at the time.

10. **Counter-deception.** The deceiver who knows his target and who is sufficiently practiced at his art is invariably successful. In addition, because the deceiver has the additional weapons of double bluff and uncertainty, the same trick can be played several times with equal success. It would seem then that there can be little defence against deception, but this is not necessarily the case: there are a number of measures that provide the basis for counter-deception:

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- a. **Awareness of the Threat.** While avoiding the mistake of perceiving deception where it does not exist, the commander and his intelligence staff should constantly be aware that they are likely to be the targets of deception operations.
- b. **Study of the Enemy.** A detailed knowledge of the enemy is as important in countering deception as it is in achieving it. The intelligence staff must be aware of the enemy's point of view, the enemy's capabilities, limitations and relevant terrain factors. A detailed intelligence estimate will assist in assessing the enemy's aims and courses (including the deception courses) and help to distinguish truth from falsehood. It is equally important to resist the kind of self-delusion that comes from overstatement of enemy capabilities.
- c. **Keeping an Open Mind.** A study of deception in history shows that success was usually achieved because the ruse largely conformed with a preconceived idea in the mind of target and, since apparent events seem more or less what the target was expecting, the components of the ruse appear feasible and logical. If the target has no preconceived ideas and keeps an open mind, deception is more difficult.
- d. **Resistance to Deriving False Conclusions.** There is constant pressure on intelligence staff to reach conclusions and formulate predictions for their commanders. There are usually deadlines to meet and, in fast moving battle, intelligence is of little use unless it is timely. Shortage of time may preclude an exhaustive collection of information; it is on such conditions that the deceiver thrives. The intelligence staff must resist the temptation to disseminate unsubstantiated, or unsubstantiatable, conclusions.
- e. **Scepticism.** Intelligence staff should be reluctant to accept information at face value and should be automatically suspicious of information which has

not received the protection of routine security precautions.

- f. **Aggressive Intelligence Collection.** Considerable effort is required on the part of the deceiver to implant a ruse which is confirmed by all or even most of the enemy's wide range of increasingly sophisticated sensors; still more effort is required to sustain a ruse over a lengthy period of time. A deception may be uncovered because the deceiver has neither the skill, resources or will to execute his plan with sufficient thoroughness to fool a competent adversary. Defence against deception thus requires active and sustained questioning of evidence, searching for corroboration by all available sources and a review of previous deductions as fresh evidence is produced. In particular it is helpful to look for small and obscure clues which are missing and which would prove or disprove the authenticity of the evidence to hand.

- g. **Adherence to Intelligence Procedures.** The short-circuiting of intelligence procedures greatly assists the deceiver. Strict adherence to the proper procedures for processing information by collection, evaluation, analysis, integration and interpretation is essential.

- h. **Attention to Anomalies.** Deception plans are seldom flawless. Indications of false activities can be clumsily presented and indications of genuine activity can rarely be totally suppressed. Intelligence staff are frequently confronted by a proportion of incongruous detail which should not be lightly dismissed as the result of inaccurate or mistaken reporting. Anomalies, which might prove to be the flaw in an otherwise convincing pattern, must be subjected to the same routine of double clicking as other evidence.

- i. **Devil's Advocate.** Deception usually succeeds because of the extreme difficulties encountered by a small intelligence staff analyzing information from

different perspectives; an increased alertness is no guarantee of improving judgement: there is a danger that greater alertness can lead to perceiving deception where no deception is intended. A possible solution to this problem is to have an outsider to the intelligence staff question the intelligence assessment prior to dissemination.

- j. **Mistrust of Automated Interpretation.** Advances are currently being made in the automatic processing of data; there are constant improvements in the speed and accuracy with which information can be collected, collated and disseminated. The powers of discrimination and interpretation which can be imparted to a machine do not yet match those of the human brain and can never be foolproof. Automation does not therefore offer a safe defence against deception.

11. The making of a deception plan is a torturous process fraught with difficulties, snares and complications; the opportunities for error, inconsistency and omission are considerable. Every deception operation inevitably leaves clues; the intelligence staff require the expertise, training and understanding of the structure and process of deception in order to detect these clues. The counter-deception analyst needs access to intelligence collection sensors to uncover deception, and data processing equipment to sort the mass of information acquired. On the premise "it takes a thief to catch a thief" the best detectors of deception are deceivers themselves: the analyst who fully understands deception is best placed to uncover the deceiver and his deception plan.

12. **Scenario Types.**

- a. **Obvious Solution.** The target is encouraged to react to a previous obvious course of action. An example of this scenario type was the Allies' exploitation of Hitler's conviction that, because of the problems of air cover and the need for a major port, any Allied invasion of EUROPE would have to be across the PAS DE CALAIS.

- b. **Lure.** The target is encouraged to exploit a seemingly advantageous opportunity, being unaware that he is being lured into a trap. There are many examples of this in history. William the Conqueror may have won the Battle of Hastings by the feigned retreat of his cavalry unit, which lured Harold's foot soldiers from their impregnable position on the SEULAC RIDGE down into open ground, where the Norman Men-at-arms could deal with them more effectively.

- c. **False Routine.** The target is conditioned to react to a perceived pattern of routine. An example is the successful crossing of the SUEZ CANAL by the Egyptians in the Yom Kippur War of 1 October 1973. From autumn 1972 the training of Egyptian troops laid great emphasis on crossing water obstacles; about forty major exercises were held involving crossing water. These exercises involved moving large quantities of bridging equipment to the canal and cutting graded approaches to the water edge. At the end of each exercise, the bridging equipment was seen to be taken away but unnoticed by the Israelis, a small proportion remained—mostly in underground storage close to the canal. By constant repetition, the Egyptians succeeded in persuading the Israelis that these were harmless training exercises. The Egyptian attack achieved complete surprise.

- d. **Mask.** The target is encouraged to react to a belief that hostile deployments are friendly. An example of this technique is the Wooden Horse of Troy. The Law of Armed Conflict requires the discarding of disguises before a battle is joined.

- e. **Act of God.** The credibility of disinformation is enhanced by encouraging the target to believe in one of two lies:
 - (1) That it has come into possession of the information as a result of a breach of

security, negligence or inefficiency on the part of the originator.

- (2) That the information arrived because of circumstances over which the originator has no control (e.g., the crash of an aircraft carrying sensitive courier items).

- f. **The Double Bluff.** The double bluff is a risky technique: it involves revealing the truth to the target, who has come to expect deception, in the conviction that he will not believe it. This is not a foolproof method of deception and stands probably only a 50 % chance of success. Nevertheless there is historical evidence to suggest the same deception can be used more than once; the enemy may recognize the ruse but, because he does not believe the same trick is being played on him again, he is deceived by it. There are, however, better deception methods with less risk attached.
- g. **Substitution.** The target is encouraged to identify objects or activities correctly (the objects or activities may be real or false) and to plan his reaction accordingly; the false is substituted for the real immediately prior to the operation. During the Second World War, before the Visla Oder operation, the Russians deployed a false axis of over 1,000 dummy tanks and self-propelled guns, with scores of real tanks to create tracks to deceive the German photographic interpreters. Actual communications of 1 and 2 Tank Army were used in the area of the false concentration: the real concentration was successfully passed off as a bluff one. A false grouping might also contain strong combat elements, which will attack and thus prolong the disguise of the main axis; a TRIPLE COMPACT view is that troops used in this manner are not wasted because they are still killing enemy soldiers, even if not on the main axis.

13. **Deception Plan—Illustration.** The illustration depicts a deception plan in support of a deliberate brigade attack. The aim of

the deception is to divert the enemy’s attention and forces, particularly armour, away from the area of the genuine brigade attack, thus gaining surprise, freedom of action and a more favourable balance of forces. The brigade is equipped with tracked APCs and the deception force consists of one infantry battalion group with one platoon of engineers. The schedule of activity and timings might be as follows:

Timings	Deception Force	Remainder of Brigade
H-12		Covert recce of real objectives and approaches
H-8	<ol style="list-style-type: none"> 1. Poorly concealed recce of diversionary objective and approaches 2. Engineer recce and movement of plant to improve mobility 3. Attack helicopter recce 	<ol style="list-style-type: none"> 1. Covert surveillance continues 2. Obvious dummy bridge constructed on real approach route
H-4	<ol style="list-style-type: none"> 1. Deception force establishes false bridge concentration area using the bulk of the brigade’s APCs 2. Brigade step up headquarters moves into concentration area 3. Premature move of Dressing Station (DS) and maintenance repair group 4. Logistics distribution point established close to false concentration area 	Real assault forces move on foot to assembly areas under electronic silence
H-3	<ol style="list-style-type: none"> 1. Artillery adjustment on diversionary objective 2. Controlled breach of radio security in concentration area 	
H-21/2 to H-2		Active counter surveillance against enemy communications and stand-off sensors
H-2	<ol style="list-style-type: none"> 1. Radio silence except for traffic control net 	

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Timings	Deception Force	Remainder of Brigade
	2. Movement of APCs on diversionary route 3. Vehicles noise and dust raising. 4. Establishment of waiting areas 5. Selective switch-on of air defence and mortar locating radar	
H-1	Movement of empty troop lift helicopters close to diversionary assembly areas	
H-30 mins	Diversionary attack	1. Real assault force in assembly areas 2. Air attack 3. Active counter-surveillance
H-hour		Real attack

PART 2—CHAPTER 6 IRREGULAR FORCES

1. **Organization.** The Vento Freedom Fighters Army (VFFA) is a radical terrorist group, formed in 1991 as the clandestine, armed wing of Republica Serpska Fianna (RSF).

RSF

2. **General.** RSF is a political organization, dedicated to the reunification of the VENTO homeland with LEMGO and TARTAN. It was formed after the end of the Cold War and the break up of old alliances and allegiances. RSF is a legitimate political party within VENTORA and participates in national and local elections. Although it has yet to gain a political majority, it has significant and strong support amongst the ethnic VENTO, TARTAN and LEMGOAN communities in VENTORA.

3. **Political Aims.** RSF seeks the establishment of a reunified VENTO homeland, based on “sustainable social and economic development; genuine democracy, participation, equality and justice at all levels of the economy and society; and a lasting and meaningful peace with unity of purpose and action”. Their objective is to end current VENTO NOVAN rule in VENTORA and they seek national self-determination and the unity and independence of VENTO as a sovereign state. Their vision foresees “the unity of the TARTAN and LEMGOAN ethnic peoples of VENTO, the redistribution of wealth, the well-being of the aged, the advancement of youth, the liberation of women and the protection of their children”. Their vision is for a free VENTO homeland and a free people.

VFFA

4. **Structure.** VFFA is organized on a cellular structure, not dissimilar to the Irish Republican Army (IRA). This has enabled it to survive penetration by VENTORA security services and for it to maintain a good degree of operational security. This high command or “Army Council” is based in MOSTAR in SE VENTORA. VFFA cells range in size from 4 to 12, although Cells can combine together for ‘joint’ operations against targets requiring greater numbers (the

Land Force Threat Force Model

highest recorded grouping was over 50). The ‘hard core’ VFFA use large numbers of local supporters, largely male and sometimes female youths, from the ethnic communities of TARTANS and LEMGOANS, for logistic help and to act as couriers, lookouts and sometimes even as ‘foot soldiers’. Area or provincial organizations/groupings, with sizes ranging from 50 terrorists to over 100, are located in the following geographical areas (figures in brackets are estimated ‘hard core’ VFFA group sizes):

- a. **SE VENTORA.** MOSTAR (35), STOLAC (15) and TREBINZE (40).
- b. **WEST VENTORA.** DRVAR (50), LIVINO (75), KNIN (25) and SPLIT (100).
- c. **NE VENTORA.** OSIJEK (30), VINKOVCI (100), BIJELJINA (75), BRCKO (30) and DOBOI (50).

5. **Military Aims.** VFFA’s primary purpose is to act aggressively in support of the overall political aims, when the political wing, RSF is unable to make progress through the ‘normal’ democratic process. To this end, VFFA military aims are as follows:

- a. Target members of the so-called VENTORA ‘establishment’ (politicians, judges and senior members of the Security Forces [SF]), by means of assassination and murder, in order to destroy effective political and military opposition to RSF/VFFA.
- b. Create an atmosphere of terror and uncertainty within the VENTO NOVANS (the prime ethnic group opposed to reunification of the VENTO homeland), in order to foster a desire to come to terms with the political aims of the RSF.

6. **Modus Operandi:**

- a. **Targets and Tactics.** To date, targets have included a mixture of political, commercial, SF and civilian targets as follows:

- (1) **Commercial/Infrastructure.** VFFA deliberately target the commercial infrastructure in order to disrupt the day to day running of the country and to convince the population that the Government is not in control of the situation. Attacks against these targets are fairly rudimentary and usually involve home made Improvised Explosive Devices (IEDs) planted by small Cells (four to eight terrorists) of VFFA assisted by local support personnel. These targets have included:
 - (2) Power stations (gas, coal and oil—no nuclear power stations in VENTORA).
 - (3) Railways—main junctions rather than terminals/stations.
 - (4) Port facilities such as cranes and access points.
 - (5) Airports—radar sites and guidance systems outside normal security perimeters, but they have also attacked main terminals with car bomb IEDs in order to disrupt the tourist industry.
 - (6) Water reservoirs and purification plants, especially in more rural areas.
 - (7) Communication systems and organizations. Attacks have been launched against cell phone radio relay towers and against major TV networks, especially those not sympathetic to the cause of VFFA/RSF.
 - (8) **Civilian.** There have been an increasing number of indiscriminate bomb attacks against civilian targets, in order to instil terror and destroy/disrupt the large tourist industry, especially in the coastal resorts

and ski resorts. These have usually been preceded by telephone warnings to the SF about 20 min before detonation. Although “suicide” bombers (such as used by HAMAS in ISRAEL) have not yet been employed, there is a sufficient fundamental Muslim support base that could recruit and employ such tactics.

- (9) **Security Forces.** The VENTORAN SF have only been attacked directly when the situation has been favourable to VFFA. Targets have included:
- (10) **Assassination.** Assassination of senior SF commanders by small VFFA Cells. This requires a significant level of research, reconnaissance (recce) and preparation in order to establish their routines prior to an attack. Infiltration of the SF by supporters has helped in this regard. Attacks have usually been conducted at very close range, with hand guns by two to three terrorists, quite often using motorbikes, in busy city centres.
- (11) **Bombs.** Bomb attacks against SF bases, especially in more isolated rural areas, are relatively common and fairly simple for VFFA to mount. These have usually been preceded by hostage taking of a civilian house or farm, the use of the occupant’s vehicle in which to plant large (500 kg plus) car bomb IEDs, and forcing a male hostage to drive the vehicle to the intended target. Such IEDs usually work on a simple ‘kitchen clock’ type timer and detonate within 45 min of being activated. Failure to carry out the attack, or being stopped at SF checkpoints, usually results in the hostages being killed. VFFA also use large numbers of concurrent hoaxes or false alarms (sometimes as many as 20 in one day),

deliberately set up in order to stretch the capacity of the SF and disrupt the community. Secondary devices are being used with increasing frequency. This is when the initial IED is a “lure”, intended to draw in the SF, where they will set up an Incident Control Point (ICP) to defuse the IED. The ICP is then itself attacked by a command detonated IED, booby trap or sniping attack. Command detonation of IEDs can take many forms; flash initiation, radio controlled, command wire or coded laser (much of this ‘home made’ technology has been ‘exported’ by the IRA. If the SF response is weak or not clearly defined, VFFA have in the past had large groups (up to 50 on one occasion) conduct a deliberate attack on the SF base, after the detonation of an IED. In this case, the SF suffered 36 casualties (all killed—VFFA only take prisoners in order to interrogate them under torture and then kill them). The SF base was totally destroyed.

- (12) **Mortars.** Mortar attacks take on a more specialized form of attack that can involve up to ten or more terrorists. Stolen vans are used and converted to carry a large home made mortar in the back and a false roof fitted, through which the mortar round can be fired. A team of four to six terrorists will move the van to the target, preceded by a ‘scout’ car looking for SF checkpoints and road blocks. The van will be parked within 50–75 ms of the intended target and the mortar initiated with a ‘kitchen clock’ type timer. Initiation takes place within approx 15 min, allowing the terrorists to make their escape. After initiation, the contents of the van will self-destruct with a booby trap within one to two hr. The IRA Mark 15 “Barrack Buster”, which has the explosive power in excess of a 155 millim

high explosive (HE) shell, has been used six times in the last 12 months.

- (13) **Sniping.** Sniping attacks using high power rifles against SF road blocks, checkpoints and patrols (foot and mobile) are scarce, but highly effective. A large number of personnel are involved, as many as 25, but only four to five hardcore terrorists. Usually, two to three terrorists take over the firing point (usually a dwelling in an urban area) and take the occupants hostage until after the sniping. Supporters are used to move the weapon to its firing point and act as lookouts and scouts (up to 20). The ‘shooters, usually two, one to fire the sniper rifle and one to fire an automatic weapon to distract the SF, will then arrive at the firing point and engage when the lookouts and scouts give the appropriate signal. The lookouts and scouts will then disrupt the SF follow up operation with ‘rent a mob’ rioting. Large scale sniping/shooting attacks are rare, but very effective once mounted. This is especially so against SF aviation, where up to four groups of terrorists, each 8–10 strong, can completely cover the exit from a valley/defile, in order to shoot down SF helicopters and then kill the survivors. A mix of rocket-propelled grenades (RPGs), heavy machine guns (HMGs) and small arms have been used, although SAMs have yet to be employed.

- b. **Equipment.** Most equipment used by VFFA comes across the borders from TARTAN and LEMGO (sometimes via STROMIA). Although some devices are ‘home made’, most equipment is issued directly from the armouries of the TARTAN and LEMGO Armed Forces.

- (1) **Explosives.** Home made explosive (HME) is made locally from farm fertilizer and is

used in large car bombs, whilst the explosives used in mortars and booby traps tends to be military plastic explosive (Czech origin). Radio active waste mixed with HME as ‘dirty bombs’ are also a possibility but have yet to be used. Such devices have more potential in creating panic and fear rather than creating mass casualties and it is highly unlikely that VFFA would use such destructive devices, with long-term radioactive fallout, on their own territory.

- (2) **Small Arms.** The most commonly used small arms (SA) are the 12.75 millim Duschka, AK74, AKM and PKM along with a variety of handguns. For long-range sniping attacks, the .50 Cal Barratt Light Rifle has been used United States of America (USA) origin and as used by the IRA. The AGS-17 has been used on limited occasions in rural areas against SF patrols.
- (3) **Surface-to Air Missiles.** Although TRIPLE COMPACT has SA16s, they have yet to be employed by VFFA, although it is believed that they possess up to 12 launchers.

7. **External Aid.** VFFA receive most of their munitions from the TRIPLE COMPACT, notably TARTAN and LEMGO. The LEMGO SPF troops are known to infiltrate across the borders and have helped to train, organize and even command certain VFFA operations. It is well known that should TRIPLE COMPACT initiate offensive operations against VENTORA, the LEMGO SPF battalion would be poised to command VFFA operations against the VENTORA forces (or even allied formations entering VENTORA). VFFA are also suspected of receiving funds for munitions from sympathizers in the USA and CANADA.

8. **International Links.** VFFA have known and suspected international links with the IRA (NORTHERN IRELAND), Euskadi ta

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Askatasuna (ETA) (Basque Region of SPAIN), FARC (COLUMBIA) and HAMAS (ISRAEL, PALESTINE). VFFA have attended training camps in LIBYA and SOUTH AMERICA, sponsored by the IRA, ETA and FARC. This has helped VFFA develop expertise in the use of homemade devices such as the Mark 15 mortar. Examples of such international cooperation are many; here are three:

- a. ETA adopted the IRA tactic of bombing civilian targets in Spain.
- b. The IRA have helped HAMAS develop and employ IEDs in the West Bank (IEDs identical to those used by the IRA in Northern Ireland were found in the Jenin refugee camp).
- c. Israel suspect that a sniper who killed seven Israeli soldiers and three civilians at a checkpoint, in 25 min using only 25 rounds from a bolt action rifle (.50 cal Barratt), was from the IRA, or trained by the IRA.

9. **Infiltration of VENTORA SF.** The VENTORAN SF employ a large number of civilians, some “white collar” (such as clerks) and many “blue collar” (such as cleaners). VFFA have for several years infiltrated the SF with sympathisers and supporters (although not ‘hard core’ terrorists as yet). These infiltrators have been able to report fairly low key intelligence such as routines/movements of senior SF officers, SF major deployment operations mounted against the VFFA and many more. VENTORA SF has not been noted for its tight security and any liaison with the VENTORA SF must take this into account.

10. **Assessment.** Any Combined Joint Task Force (CJTF) units that deploy to and operate in VENTORA, are almost certainly to become targets of VFFA. During the period of deterrence/peace support operations, prior to cross border hostilities, VFFA are likely to conduct terrorist attacks against foreign military targets. Once cross border, direct military confrontation takes place, these attacks are likely to be coordinated, possibly even commanded by, TRIPLE COMPACT SPF troops and be carried out on a larger scale (company or even battalion-sized operations) in our Rear Areas.

**PART 3—CHAPTER 7
OPFOR EQUIPMENT LIST BY FUNCTION**

Tanks	Infantry Vehicles	Artillery	Artillery Command and Control	Engineer	Anti-tank
T62	BTR60	<u>Towed</u>	IV13	<u>Route Clearance</u>	<u>Shoulder Launched</u>
T64	BTR70	D20	IV16	IMR; IMR-2	RPG7V
T72	BTR80	D30	PRP3	BAT-M, -2	RPG29
LECLERC	BTR90	<u>Self-propelled</u>		<u>Digging/Ditching</u>	<u>ATGM</u>
M60-A1	BMP1	2S1		BTM-3	AT4
	BMP2	2S3		MDK-2, -3	AT5
	BMP3	2S5		PZM; PZM-2	AT13
	WARRIOR	2S9		PJM-2	AT14
	BMD2	2S19		<u>Mine Lavers</u>	9P148
	BMD3	2S31		UMZ	9P149
	M113	AS90		GMZ	<u>Gun Systems</u>
	AFV432	<u>MRLs</u>		PMR-3	MT12
		9P140		<u>Mine Clearance</u>	2A45M
		BM21		KMT-4, -5, -7	
		BM21V		UR-88P	
		<u>SSM</u>		MTK	
		<u>SS21</u>		<u>Bridging</u>	
		<u>Mortars</u>		MTU-20	
		2B14		MTU-72	

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Tanks	Infantry Vehicles	Artillery	Artillery Command and Control	Engineer	Anti-tank
		2B11		PMP-M	
				PTS-M	
				PKP (Trailer)	
				PMM-2	
				TMM-3	

Air Defence	Reconnaissance	Nuclear, Biological and Chemical	Intelligence, Surveillance, Target Acquisition and Reconnaissance	Miscellaneous / Small Arms	Aviation/ Aircraft
<u>Shoulder Launchers</u>	BRM1K	RKHM	AZK-5 (Sound-Ranging)	AK-74	<u>Attack Helicopters</u>
SA16	BRM3K	BRDM2-RKH	PRP-3/4 SMALL FRED (Surveillance Radar)	RPK-74	Mi24 (Hind)
<u>Air Defence Guns</u>	BRDM	TMS-65	SNAR-10 BIG FRED (Surveillance Radar)	AGS-17	Mi28 (Havoc)
2S6	BRDM2		ZOO PARK (weapon location)	PKM	<u>Support Helicopters</u>
ZSU23-4	BRDM3		AZK (weapon location)	AKSU-74 SMG	Mi8 (Hip)
ZSU23M	BRDM2-U		R381 TARANT1 (UHF), T2 (VHF) (Radio Intercept)	SVD sniper rifle	Mi38 (Comd Post)

OPFOR Equipment List by Function

Air Defence	Reconnaissance	Nuclear, Biological and Chemical	Intelligence, Surveillance, Target Acquisition and Reconnaissance	Miscellaneous / Small Arms	Aviation/ Aircraft
<u>Missile</u>	IRM (Engr)		POLE DISH (Radar Direction-finding)	PKT	Mi26 (Halo)
SA11	R145BM		TWIN BOX (Radar Intercept)	Dshk HMG	<u>Reconnaissance/ Liaison Officer Helicopters</u>
SA13	SCORPION		<u>RPV/UAVs</u>	NSV	Gazelle
SA15			Kolibri	KPVT	<u>Combat Aircraft</u>
SA17			Sterkh	RPO	MiG23 (Flogger)
				RPO A	SU24M (Fencer)
					SU25 (Frogfoot)
					SU24MR (Fencer E)
					Tornado
					MiG23 MLD FLOGGER K
					<u>Transport Aircraft</u>
					II-76mf (Candid)

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Air Defence	Reconnaissance	Nuclear, Biological and Chemical	Intelligence, Surveillance, Target Acquisition and Reconnaissance	Miscellaneous / Small Arms	Aviation/ Aircraft
					An-124 (Condor)
					Recce/SLAR/ELINT
					Il-20(Coot)

TANKS—T62



Figure 3-7-1: T62

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
4	Weight 40,000 kg Speed 50 kph Range 450–650 km Fuel capacity: internal: 675 L external 285 L supplementary/external 400 L	125 mm 2A20 7.62 mm PKT MG 12.7 mm DShKM MG (on T62M)	1,600 m 1,000 m 2,000 m	40 2,500 300

TANKS—T64



Figure 3-7-2: T64

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
3	Weight 44,500 kg Speed 75 kph Range 550 km Fuel 1,000 litres	125 mm main gun 7.62 mm PKT MG 12.7 mm NSVT MG AT-8 Songster "Kobra"(tandem HEAT warhead) NBC prot and ni vis IR	2,100 m 1,000 m 2,000 m 4,000 m	40 2,000 300 6 msls

TANKS—T72



Figure 3-7-3: T72

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
3	Weight 44,500 kg. Speed 80 kph Range 450 km Fuel 1,000 L	125 mm main gun AT11 Sniper "Reflecks" 7.62 mm PKT coax 12.7 mm NSV AAMG NBC prot and ni vis (comd tank) Variants: T80BK, T80B1 (no msl capacity)	100–2,500 m 100–5,000 m 1,000 m 2,000 m	39 6 msls 2,000 300

TANKS—LECLERC



Figure 3-7-4: Leclerc

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
3	Weight 54,500 kg. Speed 71 kph Range 650 km Fuel 1,700 L	120 mm 17.6 mm coax 7.62 mm pintle	2,500 m 1,000 m 1,000 m	40 2,000 950

TANKS—M60-A1



Figure 3-7-5: M60-A1

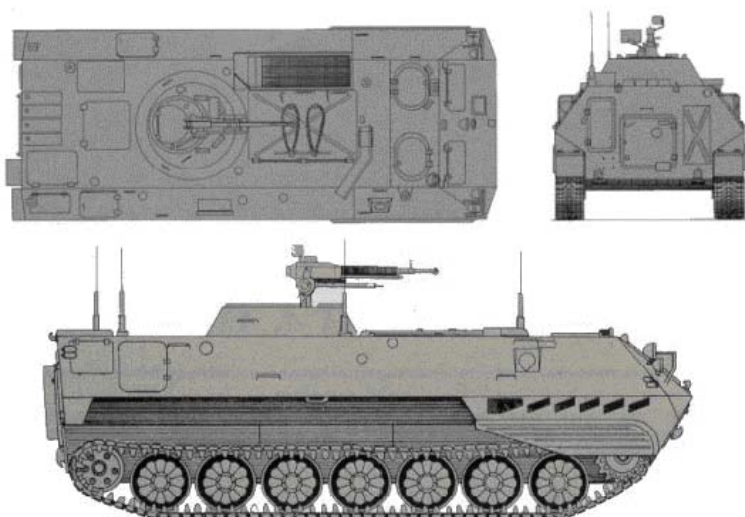
Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
4	Weight 52,617 kg Speed. 48 kph Range. 500 km Fuel 1,420 L	105 mm rifled 7.62 mm coax 12.7 mm AA	2,400 m 1,000 m 1,000 m	63 5,950 900

ARTILLERY C2—IV-13



Figure 3-7-6: IV-13

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
6	Weight 15,500 kg Speed 61.5 kph Range 500 km Fuel 768 L	12.7 mm MG	2,000 m	

ARTILLERY C2—IV-16**Figure 3-7-7: IV-16**

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
6	Weight 15,500 kg Speed 61.5 kph Range 500 km Fuel 768 L	12.7 mm MG	2,000 m	

ARTILLERY C2—PRP3

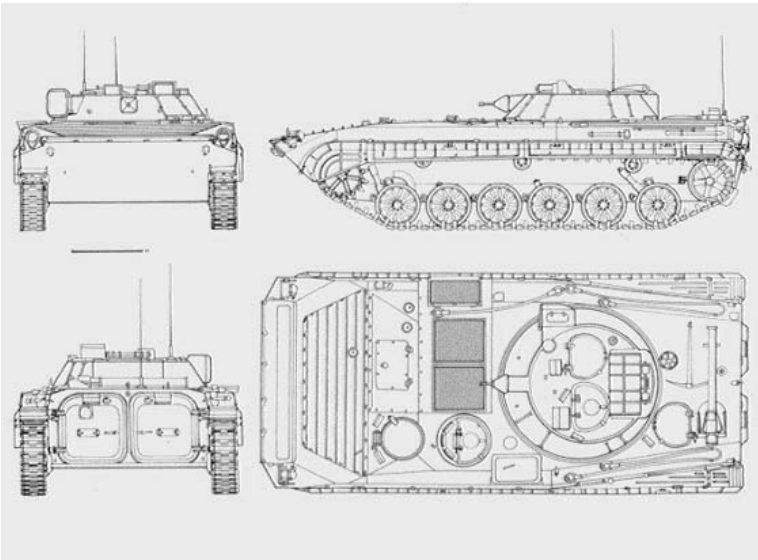


Figure 3-7-8: PRP3

OPFOR Equipment List by Function

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
3	<p>Artillery reconnaissance, fire adjustment and/or artillery/mortar locating role.</p> <p>Locates targets up to 10 km</p>	<p>7.62 mm machine-gun</p> <p>Mounted on the rear of the turret is a SMALL FRED battlefield surveillance radar.</p> <p>The SMALL FRED, which operates in the J-band, has a detection range of 20 km.</p>	1,500 m	

AIR DEFENCE—SHOULDER LAUNCHED—SA16



Figure 3-7-9: SA16

OPFOR Equipment List by Function

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
1	Weight 18.7 kg	9K310 missile system, low altitude Shoulder launched	Max: 4,500– 5,200 m Max altitude: jets 2,000– 2,500 m hels 3,000–3,500 m Min altitude 10 m	Chemical energy

AIR DEFENCE—AD GUNS—2S6



Figure 3-7-10: 2S6

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
4	Weight 34,000 kg Speed 65 kph Range 500 km Fuel 290 L	2 x 30 mm 2A38M cannon (rate of fire for cannon is 4-5000 rpm) 2 x 4 SA19 msls 2F77N resupply veh based on KamAZ-43101	max 4,000– 5,000 m max 7,000– 10,000 m	1,904 8 msls

AIR DEFENCE—AD GUNS—ZU 23M



Figure 3-7-11: ZU 23M

Land Force Threat Force Model

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
2 + 3		Max towing speed: 70 kph Time taken to bring into action: 15–20 s Time taken to come out of action: 35–40 s	max 2,500 m max alt 1,500 m ground tgts to 2,500 m	API and HEI

AIR DEFENCE—AD GUNS—ZSU 23-4

Figure 3-7-12: ZSU 23-4 Self-propelled Anti-aircraft Gun (ZSU—Zenitnaya Samokhodnaya Ustanovka)

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
4	Weight 18,996 kg Speed 44 kph Range 260 km Fuel 250 L	4 x 23mm cannons	min 50 m max 2,500 m alt 18-5,100 m	1,500, HE

AIR DEFENCE—MISSILE—SA17



Figure 3-7-13: SA17 "Grizzly" Fire Unit (SA17 "Grizzly" Launcher/Loader)



Figure 3-7-14: SA17 "Grizzly" Radar



Figure 3-7-15: SA17 "Grizzly" CP



Figure 3-7-16: SA17 System

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
3	<p>Weight 35,000 kg</p>	<p>4 missiles mounted side-by-side on launch rails Detection: with tgt under 100 m altitude with tgt over 1000 m altitude The SA17 system consists of a TELAR, Loader/Launcher, SNOW DRIFT Surveillance Radar, and Command and Control vehicle. Can track 4 tgts and 6 msls simultaneously Detection</p>	<p>Max alt 24,000 m Min alt 15 m Range 2.5-50 km 35 km 160 km</p>	

AIR DEFENCE—MISSILES— SA11



Figure 3-7-17: SA11 'GADFLY' Fire Unit



Figure 3-7-18: SA11 'GADFLY' Launcher/Loader



Figure 3-7-19: SA11 'GADFLY' Target Acquisition Radar



Figure 3-7-20: SA11 'GADFLY' CP and Target Acquisition Radar

Land Force Threat Force Model

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
3	<p>Weight 32,340 kg Speed 65 kph</p>	<p>Variant ZSU23-4 chassis 4 missiles mounted side-by-side on launch rails Entire missile system mounted on turntable Max Velocity (Mach) 3</p> <p>Detection:</p> <p>The SA11 system consists of the TELAR (9A310M1), Loader/Launcher (9A39M1), SNOW DRIFT Surveillance Radar (9S18M1), and Command and Control vehicle (9S470M1). Can track 6 tgts and 12 msls simultaneously</p>	<p>Max alt 22,000 m Min alt 15 m Range 3-36 km</p> <p>100 km</p>	

AIR DEFENCE—MISSILE—SA13



Figure 3-7-21: SA13 'Gopher' SAM system

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
3	Weight 12,080 kg Speed 61.5 kph Range 500 km Fuel 360 L	4 x SA13 SAM Launchers Detection IR (dvr only)	min 800 m max 5,000 m Alt 25–3,500 m 45 km	12 msls

AIR DEFENCE—MISSILE—SA15



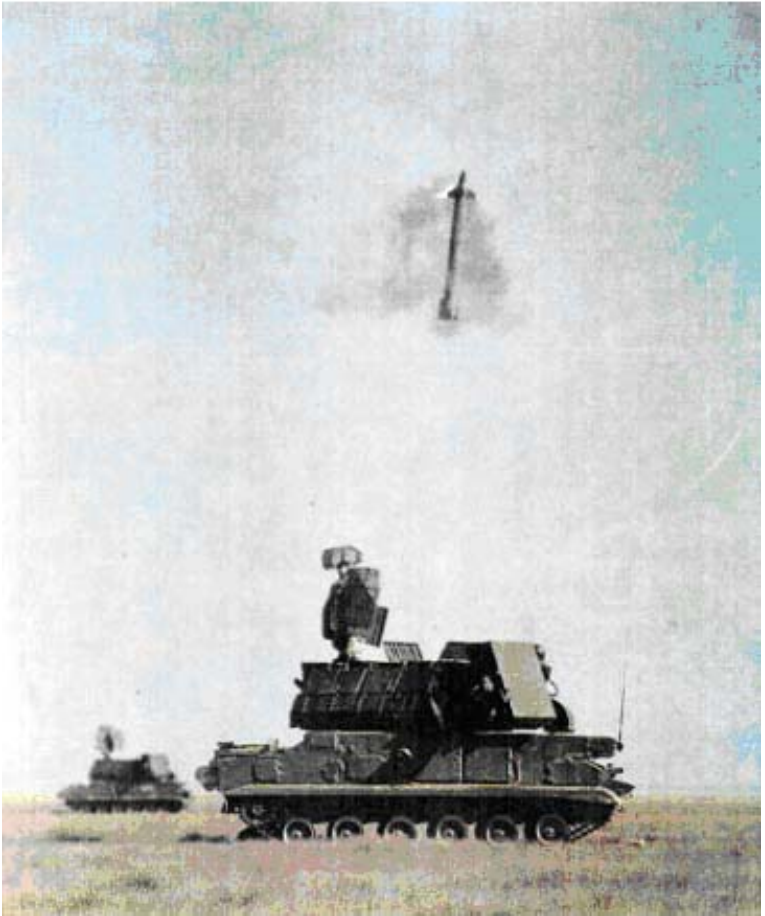


Figure 3-7-22: SA15

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
		9M330 missile Detection: Can track two tgts and two msls simultaneously	min 1,500 m max 12,000 m 30 km	

ISTAR—AZK

No image available

Type	Range	Vehicle Information
Weapon Location Radar	8–10 km range	Mounted on MTLB

ISTAR—AZK-5

No Image Available

Type	Range	Vehicle Information
Sound Ranging	12 km	Mounted in 5 ZIL BBVs when not deployed. Similar to old British SRG

ISTAR—PRP-3/4

No Image Available

Type	Range	Vehicle Information
Surveillance Radar	20+ km tracking vehicles 7–12 km tracking personnel	Mounted on BMP 36.2–37.0 Ghz

ISTAR—ZOO PARK

No Image Available

Type	Range	Vehicle Information
Weapon Location Radar	8–10 km range	Mounted on tracked vehicles

ISTAR—R381 TARAN

No Image Available

Type	Range	Vehicle Information
EW Radio Intercept and Direction Finder	80 km HF 30–80 km VHF	Mounted on MTLB-U Can target MBRLs

ISTAR—POLE DISH

No Image Available

Type	Range	Vehicle Information
EW Radar Direction Finder	25–50 km	Requires three to make baseline

ISTAR— TWIN BOX

No Image Available

Type	Range	Vehicle Information
EW Radar Intercept	25–50 km	Mounted on GAZ 66 BBV

ISTAR— BIG FRED

No Image Available

Type	Range	Vehicle Information
Surveillance Radar	20+ km tracking vehicles 12–15 km tracking personnel	Mounted on MTLB 40.0 Ghz

ISTAR—RPV/UAWS—KOLIBRI

No Image Available

Range	Characteristics	Sensor Package
180 km	Altitude 50–3,500 m Max Speed 250 kph Endurance 8 hr Lunched from BTR–D	TV, IRLS, EW ECM

ISTAR—RPV/UAWS—STERKH

No Image Available

Range	Characteristics	Sensor Package
60 km	Altitude 100–3,000 m Max Speed 100–180 kph Endurance 2 hr Launched from BTR–D	TV with real time downlink

INFANTRY FIGHTING VEHICLES—BTR60**Figure 3-7-23: BTR60**

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
2+8	Weight 11,500 kg Speed 80 kph Range 500 km Fuel 290 L, 0.58L/km	14.5 mm MG 7.62 mm MG coax Amphibious NBC prot and ni vis IR Var: BTR60PBK, (Comd) BTR60PU, (CP)	2,000 m 1,000 m	500 2,000

INFANTRY FIGHTING VEHICLES—BTR70



Figure 3-7-24: BTR70

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
2+9	Weight 11,500 (13,600) kg Speed 80 kph Range 600 km Fuel 350l (290L), 0.58L/km	14.5 mm MG 7.62 mm MG coax Amphibious NBC prot and ni vis IR Var: BTR70PKShM, (Comd) BREM (Rep and Rec)	2,000 m 1,000 m	500 2,000

INFANTRY FIGHTING VEHICLES—BTR80



Figure 3-7-25: BTR80

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
3+7	Weight 13,600 kg Speed 80 kph Range 600 km Fuel 290L, 0.58L/km	30 mm cannon 7.62 mm MG coax Amphibious NBC prot and ni vis IR	2,000 m 1,000 m	500 2,000

INFANTRY FIGHTING VEHICLES—BTR90



Figure 3-7-26: BTR90

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
3+8	Weight 11,500 kg Speed 80 kph Range 600 km Fuel 350 L	30 mm cannon 7.62 mm MG coax AT5 Spandrel "Konkurs" Amphibious	2,000 m 1,000 m 75–4,000 m	500 2,000 3 msls

INFANTRY FIGHTING VEHICLES—BMP1

Figure 3-7-27: BMP1 Infantry Fighting Vehicle (BMP—Bronevaya Maschina Pyekhota [Infantry Fighting Vehicle])

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
3+8	Weight 13,500 kg. Speed 65 kph Range 600 km Fuel 462 L	73 mm gun 7.62 mm mg AT4 Spigot ATGM Var: BMP1K (Coy Comd) BMP-KShM (Bn+ Comd) BRM1K (Recce) Amphibious	800 m 800 m 100–2,000 m	40 2,000 4 msls

INFANTRY FIGHTING VEHICLES—BMP2

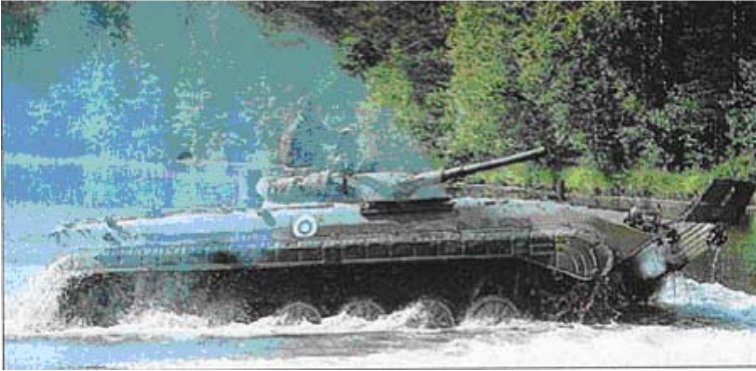


Figure 3-7-28: BMP2 Infantry Fighting Vehicle (BMP—Bronevaya Maschina Pyekhota [Infantry Fighting Vehicle])

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
3+7	Weight 14,297 kg. Speed 65 kph Range 600 km Fuel 462 L	30 mm 2A42 cannon 7.62 mm PKT coax AT5 Spandrel ATGM HE (Grenade Launcher) Three 81mm smoke dischargers on each side of the turret Amphibious	2,000 m 800 m 100– 4,000 m 1,700 m	500 2,000 4 msls 350

INFANTRY FIGHTING VEHICLES—BMP3



Figure 3-7-29: The BMP3 ICV has Three 7.62 mm PKT Machine Guns, One Mounted Coaxially with the 100 mm gun and 30 mm Cannon in the Turret and one on Either Side of the Bow Firing Forwards (Jane's 2000)

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
3+7	Weight 18,700 kg. Speed 70 kph Range 600 km Fuel 462 L	100 mm 2A70 30 mm 2A72 coax 7.62 mm coax AT10 Stabber "Bastion" Three 81mm smoke dischargers on each side of the turret Amphibious	1,500 m 100–2,500 m 100–1,000 m 4,000 m	40 500 6,000 8 msls

INFANTRY FIGHTING VEHICLES—WARRIOR



Figure 3-7-30: Warrior

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
3+7	Weight 28,000 kg Speed 75 kph Range 660 km Fuel 770 L	30 mm L21 Rarden 7.62 mm coax 2x4 66mm grenade launchers	1,500 m 1,100 m	250 2,000

INFANTRY FIGHTING VEHICLES—BMD2

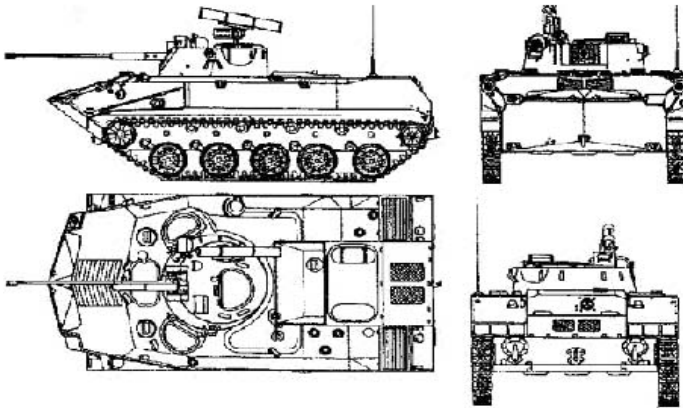


Figure 3-7-31: BMD2

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
2+5	Weight 8,000 kg Speed 70 kph Range 320 km Fuel xxx L	30 mm 2A42 2x 7.62 mm PKT AT5 Spandrel "Konkurs" (Tandem HEAT) HE (Grenade Launcher) Amphibious	2,000 m 1,000 m 75–4,000 m 1,700 m	300 2,940 3 msls 200

INFANTRY FIGHTING VEHICLES—BMD3

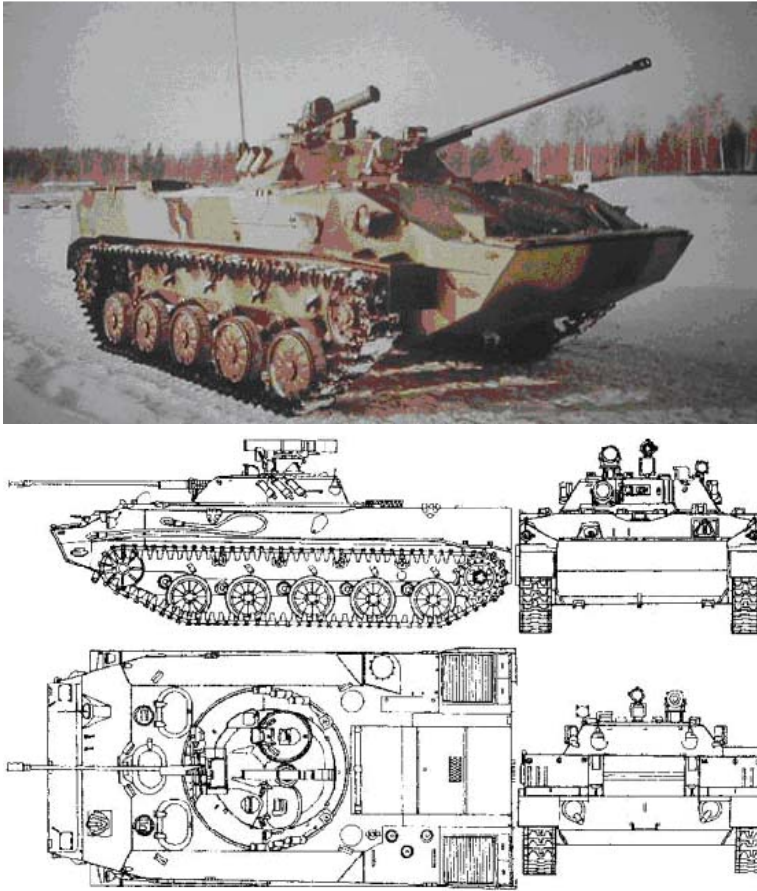


Figure 3-7-32: BMD3

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
3+7	Weight 13,200 kg Speed 71 kph Range 500 km Fuel xxx L	30 mm 2A42 2x 7.62 mm PKT 5.45 mm RPKS bow gun AG-17 Grenade Launcher AT5 Spandrel "Konkurs" (Tandem HEAT) Amphibious	2,000 m 1,000 m 1,700 m 75-4,000 m	500 2,000 200 3 msls

INFANTRY FIGHTING VEHICLES—M113**Figure 3-7-33: M113**

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
2+11	Weight 12,150 kg Speed 65.7 kph Range 480 km Fuel 360 L	12.7 mm M2 MG Amphibious	1800 m	2,000

INFANTRY FIGHTING VEHICLES—AFV432

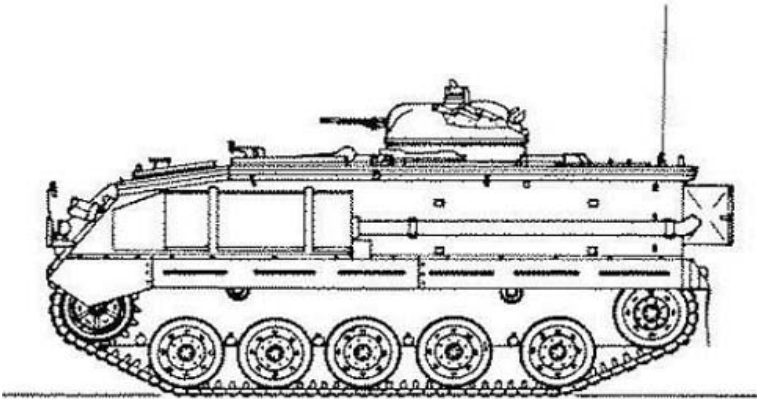


Figure 3-7-34: AFV432

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
2+10	Weight 15,280 kg Speed 52.2 kph Range 480 km Fuel 454 L	7.62 mm MG 2x3 66mm grenade dischargers	1,100 m	1,600

ENGINEER—ROUTE CLEARANCE—IMR

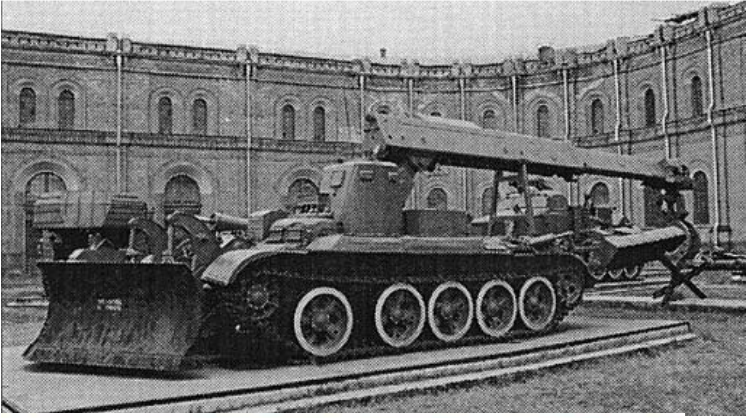
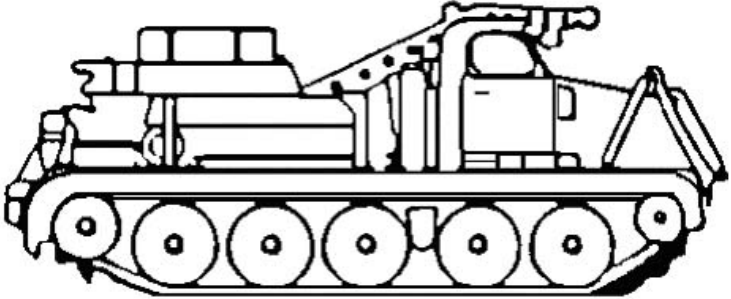


Figure 3-7-35: IMR

Land Force Threat Force Model

Crew	Characteristics	Explanation
2	<p>Weight 37,500 kg Length 10.6 m Width 3.27 m /blade 3.48 m Height 2.48 m /traveling 3.37 m Max speed 48 kph Range 400 km Fuel capacity 812 L.</p>	<p>T-54/55 chassis Hydraulic crane and dozer blade Crane capacity = 4-7 mt. IMR-2 (formerly called IMR 1986, Obstacle-Clearing Vehicle) T72 chassis Hydraulic crane and dozer blade Crane capacity = 5-11 mt.</p>

ENGINEER—ROUTE CLEARANCE—BAT-2**Figure 3-7-36: BAT-2**

Crew	Characteristics	Explanation
2+8	Weight 37,500 kg Range 500 km Working Speed 2.3–6.8 m/hr	Vehicle Fighting Positions /hour 6

ENGINEER—DIGGING/DITCHING—BTM-3

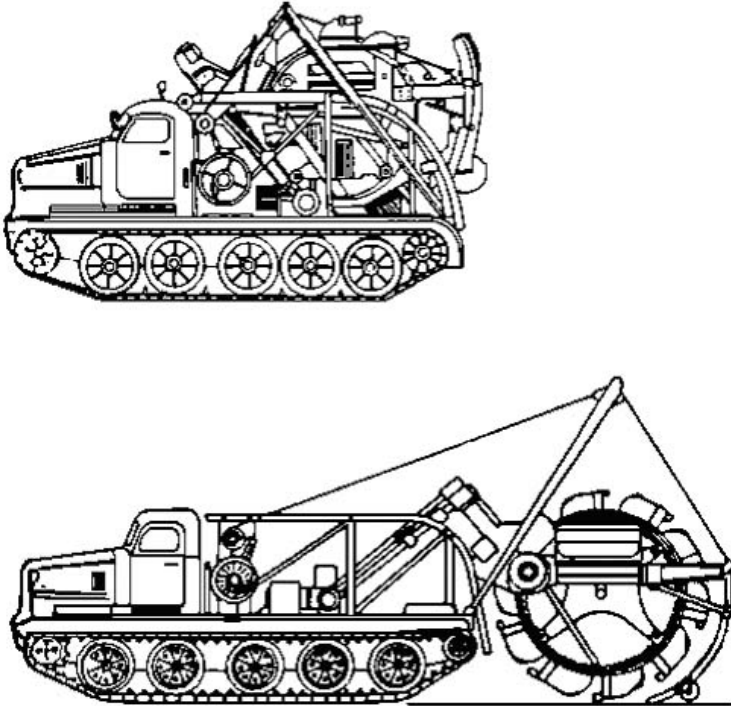
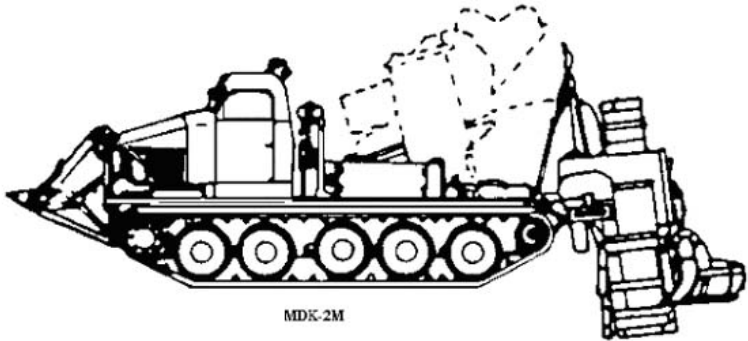


Figure 3-7-37: BMT-3

Crew	Characteristics	Explanation
2	Weight 27,000 kg Range 500 km Working Speed 220–600 m/hr Digging Depth 1.5 m Digging Width 4 m	Vehicle Fighting Positions /hour 14

ENGINEER—DIGGING/DITCHING—MDK-2M**Figure 3-7-38: MDK-2M**

Crew	Characteristics	Explanation
2	Weight 28,500 kg Range 500 km Working Speed 200–800 m/hr Digging Depth 0.8–4.5 m Digging Width: 4 m	Vehicle Fighting Positions /hour 7

ENGINEER—DIGGING/DITCHING—MDK-3

No image available

Crew	Characteristics	Explanation
2	Weight 28,500 kg Range 500 km Working Speed 200–800 m/hr Digging Depth 1.7–3 m Digging Width 4 m	Vehicle Fighting Positions /hour 12

ENGINEER—DIGGING/DITCHING—PZM

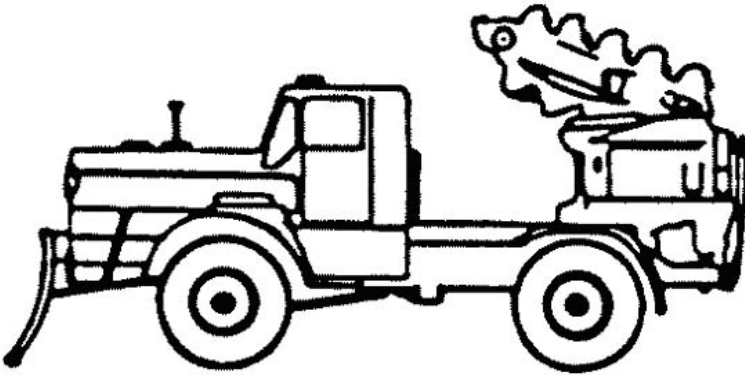


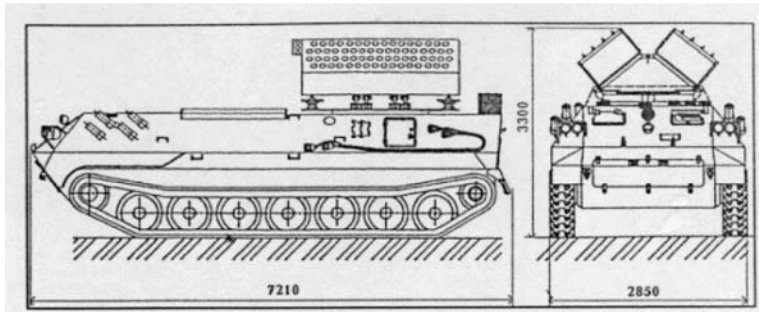
Figure 3-7-39: PZM

Crew	Characteristics	Explanation
	Working Speed 208 m/hr Digging Depth 1.5 m (max) Digging Width 1.1 m	

ENGINEER—DIGGING/DITCHING—PJM 3

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Crew	Characteristics	Explanation
	Weight 12,800kg Speed 44 kph Range 500 km	Can trench at 180 m per hr, 35 m per hour on frozen ground. Depth/width of trench 1.2/0.9m up to 3 pits. Dozer blade.

ENGINEER—MINE LAYERS—UMZ**Figure 3-7-40: UMZ**

Crew	Characteristics	Explanation
	Length 7.1 m Width 2.5 m Height 2.973 m Speed , mine dispensing: 40 kph Weight without mine load: 8,300 kg with mine load: 10,100 kg ZIL-131 truck chassis	Mines per load PFM-1/PFM-1S: 11,520 POM-2S: 720 PTM-3: 180 Max length of minefield using 1 load PFM-1/PFM-1S: 3.2 km POM-2S: 5 km PTM-3: 0.6 km Minefield depth 15 to 240 m

ENGINEER—MINE LAYERS—GMZ

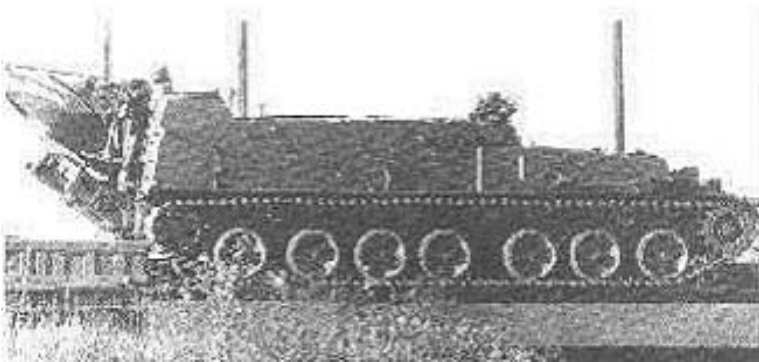




Figure 3-7-41: GMZ

Crew	Characteristics	Explanation
3	Weight 28,500 kg Length (travelling) 8.62 m Width 3.25 m Height (travelling) 2.7 m Max speed road: 60 kph road, cruising: 40–45 kph dirt roads: 25–30 kph Range (road) 500 km	Armament 14.5 mm KPVT MG Mine capacity 208 Work speed surface laying: up to 16 kph burying: up to 6 kph Minelaying rate surface laying: 8 mines/min burying: 4 mines/min Mine spacing 5 or 10 m Reload time 15–20 min

ENGINEER—MINE LAYERS—PMR-3





Figure 3-7-42: PMR-3

Crew	Characteristics	Explanation
3-4	Length 3 m Width 2 m Height 2.5 m Reload time 10-12 min	Mine spacing 4-5.5 m Burial depth (soft soil) 300-400 mm Work speed (surface laying) 4-10 kph (burying) 2-3 kph Laying rate 10-12 mines/min

ENGINEER—MINE CLEARANCE—KMT 4, 5, 7

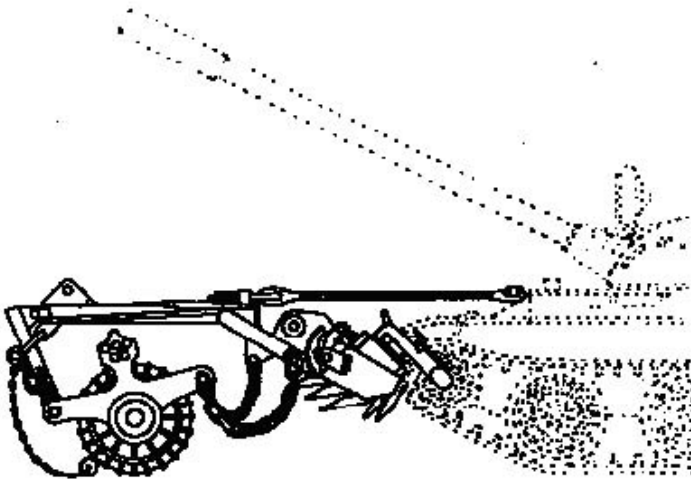


Figure 3-7-43: KMT 4, 5, 7

Crew	Characteristics	Explanation
	<p>Weight 7,500 kg Mounted on T-55, T62, T64</p>	<p>Three carried on a ZIL-131 3.5 t truck</p> <ul style="list-style-type: none"> - Mounts on any type tank - Clearance depth = 10 cm - Estimated clearance speed = 6-12 kph - Assigned to Regt's Engr Coy; issued one per Tank Coy - Installation = 30-45 min/Removal = 8-13 min - Luminous lane-marking device - Rollers and plows do not operate at the same time

ENGINEER—MINE CLEARANCE—MTK**Figure 3-7-44: MTK**

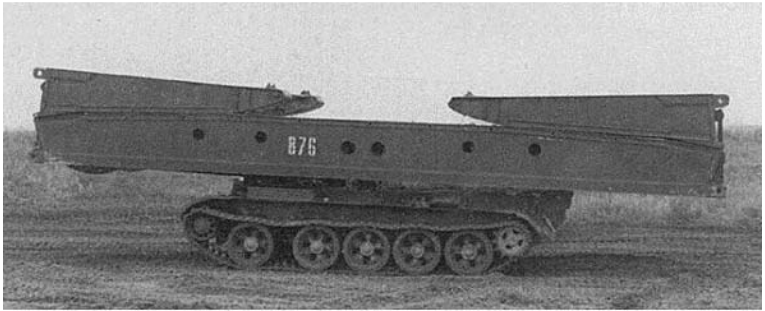
Crew	Characteristics	Explanation
	<p>Weight approx 14 tonnes Length 7.1 m Length of line charge 170 m</p> <p>Mineclearers with line charges. MTK</p>	<p>The MTK armoured mine clearing vehicle is a derivative of the BTR-50PK tracked armoured personnel carrier. It carries a UR-67 rocket launcher to tow a length of UZR-3 high-explosive line charge across a minefield. The line charge is then finally positioned by the vehicle crew using the securing line, and detonated to clear a breach through the minefield. The breach would normally be enhanced using mechanical (plough and roller) follow-up mine clearing expedients.</p> <p>The MTK carries three UR-67 rocket and line charge systems.</p> <p>Clears path 140 m long by 2 to 8 m wide</p> <p>MTK-2</p> <p>Fires one or two line charges</p> <p>Clears path 180 m long by 3 m (pressure fuse mines) or 8 m (tilt-rod mines) wide</p> <p>2S1-type chasis (amphibious)</p>

ENGINEER—MINE CLEARANCE—UR-88P



Figure 3-7-45: UR-88P

Crew	Characteristics	Explanation
	<p>The UR-88P portable mineclearing system is carried in sections and assembled at a point close to the minefield to be breached. It can also be launched from landing craft during amphibious operations or from the load areas of suitable trucks or trailers.</p>	<p>The system consists of a launching rack, base and anchorage, two lengths of DKRP-4 detonating cable, two MD-70 rocket units, two retarding cables, a detonator unit, VR-04 fuze, connecting cable, a launch device and a set of spares, tools and accessories. Assembly time is 90 min. Once emplaced the system can be operated by a crew of two.</p> <p>The system uses a UZP-88 extended line charge packed in two units placed in front of the launch unit. The combined line charges weigh 1,380 kg or 1,810 kg when packed. Line charge length is 114 m with maximum delivery range 440 m (+20 m/-40 m). When the line charge is detonated, a breach up to 115 m long and 6 m wide can be cleared.</p>

ENGINEER—TACTICAL BRIDGING—MTU-20**Figure 3-7-46: MTU-20**

Crew	Characteristics	Explanation
2	Weight 37,000 kg Length 11.64 m Width 3.306 m Height 3.4 m Max speed 54 kph Range 485–500 km Fuel capacity 960 L	

ENGINEER—TACTICAL BRIDGING—MTU-72

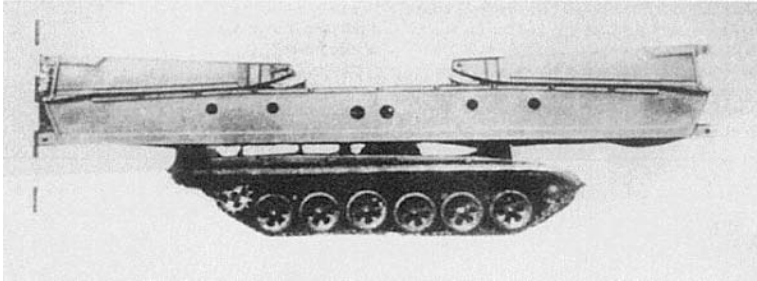


Figure 3-7-47: BMD2

Crew	Characteristics	Explanation
2	Weight 40,000 kg Length 11.64 m Width 3.46 m Height 3.381 m Max speed (road) 60 kph Range 500 km Fuel capacity 1,000 L	Armament 1 × 7.62 mm PKM MG Bridge capacity 50,000 kg Bridge weight 6,400 kg Bridge length (extended) 20 m (folded) 9.42 m Bridge width 3.3 m Gap spanned 18 m

ENGINEER—BRIDGING—PMP-M**Figure 3-7-48: PMP-M****SPECIFICATIONS—BRIDGE CONSTRUCTION (PMP-M)**

Type	20 t	60 t
Roadway width	3.25 m	6.5 m
Length of bridge		
(whole set)	382 m	227 m
(half set)	281 m	119 m
Working party	72*	72*
Drivers	36*	36*
Assembly time	50 min*	30 min*

incl shore		
(whole set)	32	32
(half set)	18	18

Number of whole pontoons

	River pontoon	Shore pontoon
	(open)	(open)
Weight	6,676 kg	7,252 kg
Length	6.75 m	5.58 m
Width	7.1 (3.21 m)*	7.02–7.32 m (3.3 m)*
Depth	0.915 m	0.73 m

- **Data is for whole set**
Two additional shore pontoons are held in bridge set
The bridge can be constructed in water with a maximum velocity of 2 m/s

RAFT CONSTRUCTION (PMP–M)

Type	40 t	60 t	80 t	120 t	130 t	170 t
Length	13.5 m	20.25 m	27 m	40.5 m	46 m	59.5 m
Rafts per set	16	10	8	5	4	4
Pontoons per raft	2	3	4	6	6 + 1 shore	8 + 1 shore
Assembly time	7 min	8 min	9 min	12 min	14 min	18 min
Working party	4	6	8	12	14	18
Drivers	2	3	4	6	7	9

* Folded dimensions are in brackets



Figure 3-7-49: Raft Construction (PMP-M)

ENGINEER—BRIDGING—PTS-M





Figure 3-7-50: PTS-M

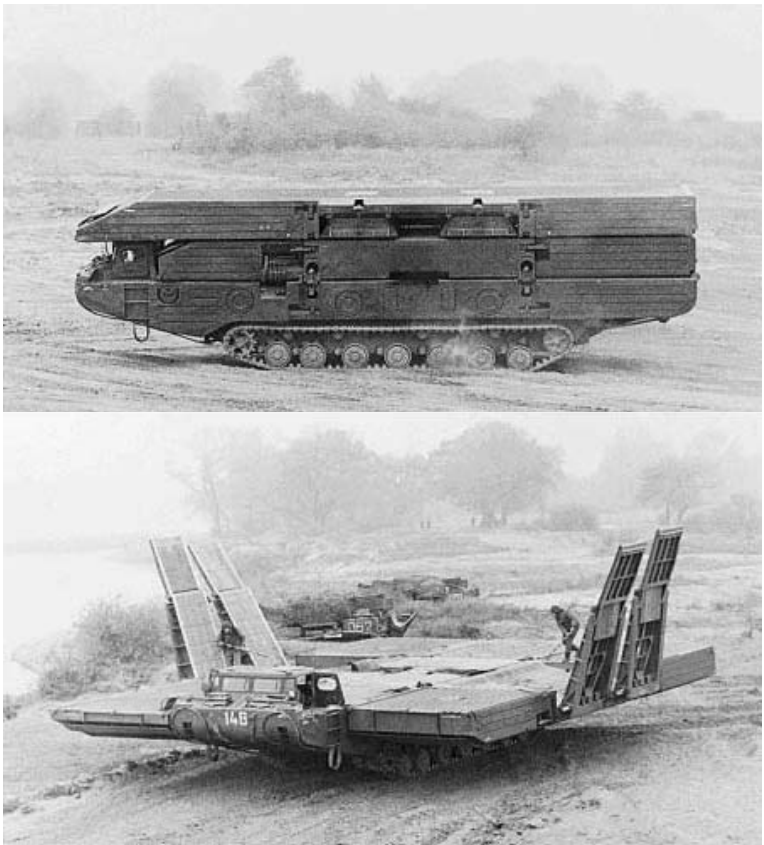
Crew	Characteristics	Explanation
1 + 1 can carry up to 70 troops	Weight 22,700 kg Max load (land) 5,000 kg (water) 10,000 kg Load area 7.9×2.6 Length 11.426 m Width 3.3 m Fuel 705 L	<p>The vehicles were designed to carry 5,000 kg on land or 10,000 kg on water, or up to 70 personnel. In the ambulance role, up to 12 stretchers can be carried in the open cargo area. The PTS–M has also been used to lay portable trackway across beach areas.</p> <p>The PKP trailer was designed specifically for use with the PTS–M.</p>

ENGINEER—BRIDGING—PKP (TRAILER)



Figure 3-7-51: PKP (Trailer)

Crew	Characteristics	Explanation
	<p>Overall length 10.3 m Width (traveling) 2.82 m Height 2.2 m Weight 3,600 kg Ground clearance (loaded) 0.4 m Axle track width 1.89 m Payload on land 2,500 kg on water 5,000 kg</p>	<p>The PKP trailer was designed specifically for use with the PTS–M. The PKP is a boat-shaped trailer having two small folding side pontoons for improving trim and increasing buoyancy, which rest on top of the trailer when it is traveling and are swung through 180° and locked in position before entering the water. It has a foam plastic filled, watertight hull and treadways on its deck with recesses for the wheels of transported artillery pieces. Loading ramps are provided. The trailer is normally used to carry 122 mm howitzers, while the PTS carries the prime mover, for example the Ural–375D truck. The PKP can be towed at a speed of between 20 and 25 kph laden or 25 to 30 kph unladen.</p>

ENGINEER—BRIDGING—PMM-2**Figure 3-7-52: PMM-2**

Crew	Characteristics	Explanation
3	Length 13.35 m Width 3.36 m Height 3.65 m Speed (Land) 55 kph (water) 10 kph Max load 42,500 kg Ferry length 13.5 m width 10.5 m	The PMM-2 is the replacement vehicle for the GSP heavy amphibious ferry. It uses a similar chassis and float layout, but the PMM-2 float units unfold for use and can be folded back for road transport. PMM-2 units can be connected together to form floating bridges by using latching mechanisms on the outer edges of the float units. Bridges up to 10 units wide have been reported and no bridging boats are apparently involved in the formation of such bridges. The PMM-2 system can operate in rivers with a flow rate of up to 2 m/s.

ENGINEER—BRIDGING—TMM-3

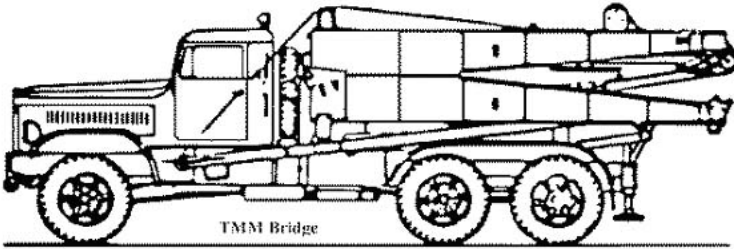


Figure 3-7-53: TMM-3



Figure 3-7-54: TMM-6, the TMM-3 Works on a Similar Principle

Crew	Characteristics	Explanation
	Weight 9,500kg Speed 60 kph Range 700 km	Tactical Bridging launched from a KRAZ-255B 4x 10.5 m spans in one set will span a gap of 40 m. The bridge, 3.8 m wide can be erected in 45-60 mins by day and 60-80 mins by night

RECCE—BRDM-1**Figure 3-7-55: BRDM-1**

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
2-5	Weight 7,000 kg Speed 80 kph Range 500 km Fuel 150 L	1 × 7.62 mm SGMB MG NBC system: yes Night vision equipment: yes Variants: BRDM-U (Command) BRDM-1-RKHB (NBC)	1,500 m	1,250

RECCE—BRDM-2



Figure 3-7-56: BRDM-2

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
2-5	Weight 7,000 kg Speed 100 kph Range 750 km Fuel 290 L	14.5 mm KPVT mg 7.62 mm PKT coax Variants: BRDM2-U (Command) BRDM2-RKHB (NBC)	2,000 m 1,000 m	300 2,000

RECCE—BRM1K



Figure 3-7-57: BRM1K

Land Force Threat Force Model

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
3 + 8	<p>Weight 13,500 kg</p> <p>Speed (road) 65 kph (water) 7 kph</p> <p>Fuel 460 L</p> <p>Range 550–600 km</p> <p>Fording amphibious</p>	<p>73 mm 2A28 gun 7.62 mm PKT MG rail for 'Sagger' ATGW</p> <p>This reconnaissance variant consists of the BRM1 with the addition of a PSNR–5K Battlefield Surveillance Radar, which is mounted in the rear part of the turret. This radar is elevated above the turret roof when needed, and then lowered into the turret when not used. This vehicle also includes a DKRM–1 laser rangefinder, ARRS–1 location device, IMP mine detector and 1PN33B night binoculars. Navigation equipment carried includes TNA–1, IG11N gyro–compass and 1T25 survey device.</p>		<p>40 2,000 4+1 msls</p>

RECCE—BRM3K



Figure 3-7-58: BRM3K

Land Force Threat Force Model

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
	IRL-133-1 TALL MIKE radar; 1PN71 NOD (TV); 1D14 LRF	This vehicle is a reconnaissance variant of the BMP3 and was designed to conduct battlefield reconnaissance by day and night and under all weather conditions. The main external differences include no firing ports in the rear troop compartment, removal of the two bow-mounted 7.62 mm PKT machine-guns and removal of the 100 mm 2A70 rifled gun. Equipment installed for the reconnaissance role includes the mast mounted IRL-133-1 TALL MIKE battlefield surveillance radar (which can be retracted into the vehicle when not in use); the 1PN71 night observation TV device; the 1PN61 night observation device; and the 1D14 periscopic laser rangefinder. The electro-optical devices are mounted on either side of the turret and when not being used, the optics are covered by a hinged shutter that opens to the left. The vehicle is also equipped with the TNA-4 navigation device and the 1G50 gyro compass which enables the crew to quickly determine their position on the battlefield		

RECCE—BRDM2-U**Figure 3-7-59: BRDM2-U Command Vehicle**

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
	No armament	There are several versions of this specialized command vehicle. The well-known model without a turret is designated the BRDM2-U (also referred to as the BRDM2-U3) and is equipped with a 1 kW generator AB1-P/30 and radios R-105M, R-108M and R-130M.		

RECCE—IRM



Figure 3-7-60: IRM

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
		<p>This vehicle is based on the BMP1 IFV chassis. It has a new hull and uses the engine and suspension of the BMP1 vehicle. It has been designed to undertake a variety of specialized engineer reconnaissance roles including mine detection with two devices mounted at the front of the vehicle which can be retracted flush with the front of the hull when not required.</p> <p>The IRM is fully amphibious, propelled by two shrouded propellers at the rear of the vehicle. When submerged a snorkel is erected on the top of the hull; it is kept horizontal when not required.</p>		

RECCE—R145BM



Figure 3-7-61: R145BM

Land Force Threat Force Model

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
	<p>Based on BTR60 No turret.</p>	<p>Fitted with a CLOTHES RAIL antennae on left side. Box on right hull side. HAWKEYE antennae right fwd fusealge just behind hatch. Large box left rear upper hull. Extra generator and boxes on engine deck. Tube located on left upper hull. Extra antennae, slightly offset to right, on rear hull just in front of engine deck. The main radio is the R-145. R145BM fitted with multiple radios.</p>		

RECCE—SCORPION**Figure 3-7-62: Alvis Scorpion Reconnaissance Vehicle**

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
3	Weight: 8,073 kg Length: 4.79 m Height: 2.1 m Speed: 80.5 kph	75 mm Cannon direct fire indirect fire 7.62 mm coax II sight	1,500 m 5,000 m. range: 1,100 m	

MISCELLANEOUS / SMALL ARMS—AK-74



Figure 3-7-63: AK-74

Details	Maximum range	Effective range	Weight	Length
5.45 x 39 mm ball Unit of fire = 300 rounds	1,000 m	500 m	3.75 kg	937 mm

MISCELLANEOUS / SMALL ARMS—RPK-74**Figure 3-7-64: RPK-74**

Details	Maximum range	Effective range	Weight	Length
5.45 x 39 mm ball Unit of fire = 1,000 rounds	2,500 m	800 m	5 kg	1070 mm

MISCELLANEOUS / SMALL ARMS—AGS-17

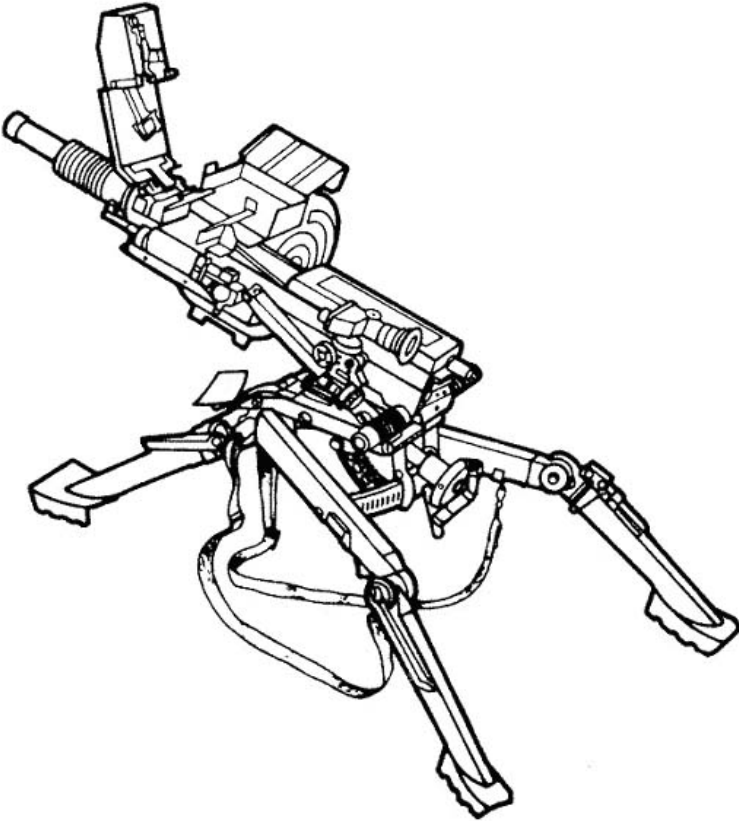
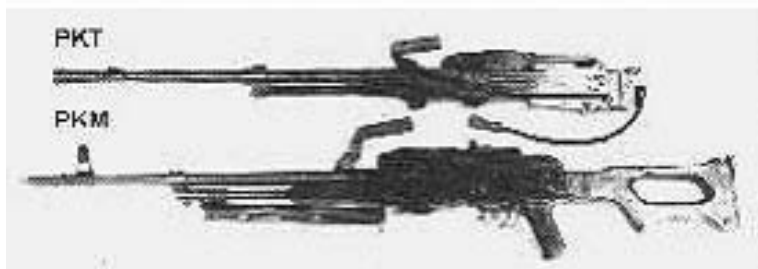


Figure 3-7-65: AGS-17

Details	Maximum range	Effective range	Weight	Length
30 mm Grenade Launcher 29 rd magazine	1,730 m	1,200 m	45.05 kg	1280 mm

MISCELLANEOUS / SMALL ARMS—PKM**Figure 3-7-66: The PKT and the PKM**

Details	Maximum range	Effective range	Weight	Length
5.45 x 39 mm ball				

MISCELLANEOUS / SMALL ARMS—AKSU-74

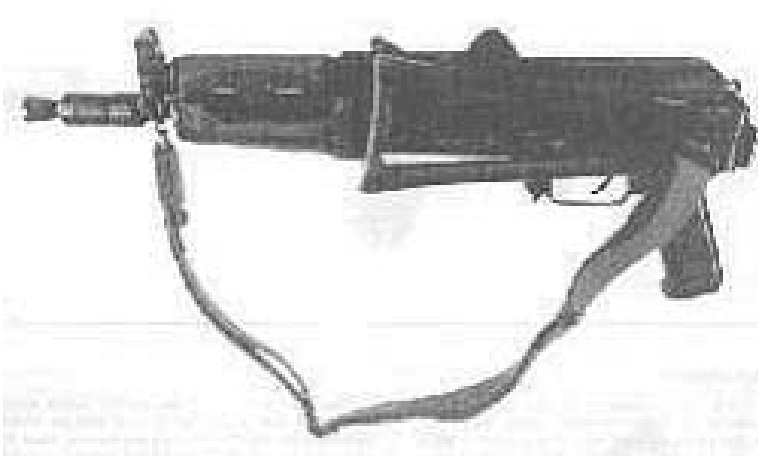


Figure 3-7-67: AKSU-74

Details	Maximum range	Effective range	Weight	Length
5.45 x 39 mm ball	1,500 m	300 m	3.11 kg	730 mm

MISCELLANEOUS / SMALL ARMS—SVD



Figure 3-7-68: SVD

Details	Maximum range	Effective range	Weight	Length
7.62 mm IR night sight	3,800 m	1,300 m with scope 800 m without	4.49 kg	1230 mm

MISCELLANEOUS / SMALL ARMS—PKT**Figure 3-7-69: PKT**

Details	Maximum range	Effective range	Weight	Length
7.62 mm	3,800 m	1,000 m	8.4 kg	1160 mm

MISCELLANEOUS / SMALL ARMS—DSHK

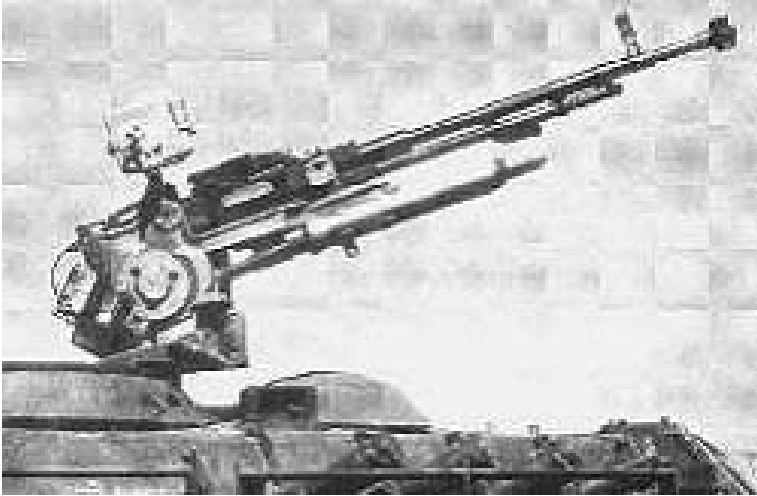
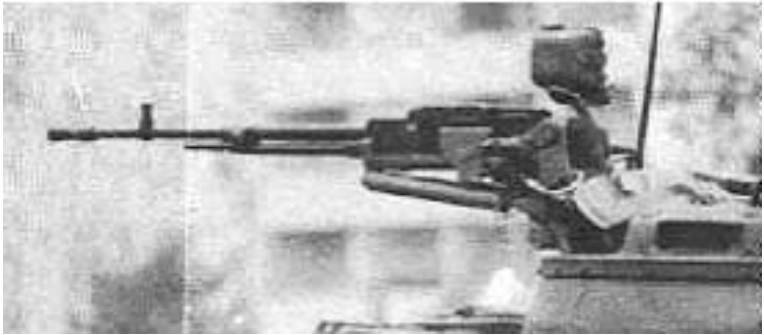


Figure 3-7-70: DSHK

Details	Maximum range	Effective range	Weight	Length
12.7 mm	7,000 m	2,000 m	157.5 kg	1560 mm

MISCELLANEOUS / SMALL ARMS—NSV**Figure 3-7-71: NSV**

Details	Maximum range	Effective range	Weight	Length
12.7 mm	7,800 m	2,000 m	25 kg	1580 mm

MISCELLANEOUS / SMALL ARMS—KPVT**Figure 3-7-72: KPVT**

Details	Maximum range	Effective range	Weight	Length
14.5 mm	7,000 m	2,000 m	49.1 kg	2000 mm

MISCELLANEOUS / SMALL ARMS—RPO



Figure 3-7-73: RPO

Details	Maximum range	Effective range	Weight	Length
Fuel Air Explosive (FAE) Weapons or Thermobaric 110 mm calibre Grenade launcher fires FAE or Smoke Issued to infantry units for use in Urban ops only	500 m		11 kg	

MISCELLANEOUS / SMALL ARMS—RPO A**Figure 3-7-74: RPO A**

Details	Maximum range	Effective range	Weight	Length
Fuel Air Explosive (FAE) Weapons or Thermobaric 93 mm calibre Disposable Weapon Fires FAE or Smoke Issued to infantry units for use in Urban ops only	300 m		3.5 kg	

ARTILLERY—TOWED—D20



Figure 3-7-75: D20

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
10	Towed Arty Towed by: AT-S Tracked vehicle; MTLB; Ural- 375; or a Ural 4320 Weight 5,700 kg.	152 mm Gun/Howitzer	max 17,400 m	FRAG-HE RAP (24,000 m) incendiary flechette concrete piercing laser guided HEAT Smoke/WP scat mines

ARTILLERY—TOWED—D30**Figure 3-7-76: D30**

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
7	Towed Arty Towed by a Ural 4320 Weight 3,210 kg	122 mm, 2A18M	min 1,000 m max 15,300 m	Frag-HE smoke (WP) illum incendiary flechette HEAT-FS

ARTILLERY—SELF PROPELLED—2S1



Figure 3-7-77: 2S1

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
4+2	Weight 15,700 kg Speed 60 kph Range 500 km Fuel 550 L	122 mm 2A31	min 1,000 m max 15,300 m	40 HE smk illum

ARTILLERY—SELF PROPELLED—2S19**Figure 3-7-78: 2S19**

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
5	Weight 42,000 kg Speed 60 kph Range 500 km Fuel 768 L	152 mm 2A64 12.7 mm NSVT MG ford depth 1 m wade 5 m	max 24,700 m	50 300 FRAG-HE, Base Bleed 29,000 m

ARTILLERY—SELF PROPELLED—2S3



Figure 3-7-79: 2S3

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
4	Weight 27,500 kg Speed 60 kph Range 500 km Fuel 830 L	152 mm 2A33 7.62 mm PKT MG	max 17,230 m	42 FRAG-HE, RAP (20,500 m) incendiary flechette concrete piercing laser guided HEAT smoke(WP) scat mines

ARTILLERY—SELF PROPELLED—2S5**Figure 3-7-80: 2S5**

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
5	Weight 28,200 kg Speed 63kph Range 500 km Fuel 768 L	152 mm 2A37 7.62 mm PKT MG	max 28,400	30 1,500 FRAG-HE RAP (40,000 m) incendiary flechette concrete piercing ICM, scat mines

ARTILLERY—SELF PROPELLED—2S9



Figure 3-7-81: 2S9

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
4	Weight 11,900 kg Speed: 60 kph Range 500 km Fuel xxx L	120 mm	8,855 (13,000) m	25 HE (RAP) WP illum smk LGP(A)

ARTILLERY—SELF PROPELLED—AS90**Figure 3-7-82: AS90 155 mm Self-Propelled Howitzer**

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
5	Weight 45,000 kg Speed: 55 kph Range 370 km Fuel 750 L	155 mm 39calibre HMG .50 veh mtd	24,700 (30,000)	48 HE (RAP) ICM RAAMS/ADAM smk illum

ARTILLERY—MRLS—9P140



Figure 3-7-83: 9P140

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
4	Weight 20,000 kg Speed 65 kph Range 500 km Fuel 768 L Mounted on Zil-135LM 8 x 8	220 mm, 9P140 16-tube launcher, reload time 20 mins into action 3 mins Extra ammo is carried on one or two 9T452 transloader vehicles	min 8,500 m max 35,000 m	unitary HE ICM incendiary scat mines

ARTILLERY—MRLS—BM21**Figure 3-7-84: BM21**

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
6	Weight 13,700 kg Speed 80 kph Range 1,000 km Fuel 360 L Mounted on Ural-375D 6 x 6	122 mm, 9P132 40-tube launcher reload time is 8 mins. into action 3 mins Extra ammo is carried on a 9F37 ammo supply vehicle	min: 5,000 m 20,380 m	Frag-HE incendiary scat mines AP/AT bomblets

ARTILLERY—MRLS—BM21V



Figure 3-7-85: BM21V mounted on a GAZ-66B

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
6	<p>Weight 6,000 kg Speed 85 kph Range 575 km Fuel 360 L</p> <p>Mounted on GAZ-66 or BMD</p>	<p>122-mm, 12-tube launcher reload time 6-8 mins. into action 3.5 mins</p> <p>Extra ammo is carried on a 9F37 ammo supply vehicle</p>	<p>min: 5,000 m 20,000 m</p>	<p>Frag-HE incendiary scat. mines AP/AT bomblets</p>

ARTILLERY—MRLS—9A52



Figure 3-7-86: 9A52-2 Smerch 300 mm Multiple Launch Rocket System (MRLS)

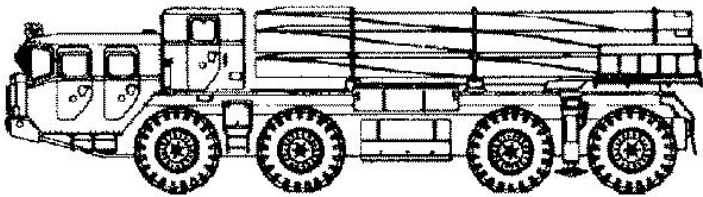


Figure 3-7-87: BM30

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
3	MAZ-543M (8 × 8) 9T234-2 Transloader	300 mm Frag-HE, 9M55F 300 mm DPICM, 9M55K 300 mm Sensor- fuzed (MOTIV- 3M), 9M55K1	Min: 20,000 m Max: 70,000 m	Other ammunition types: smoke incendiary chemical leaflet fuel Air Explosive (FAE) R-90 expendable miniature UAV (experimental)

ARTILLERY—SSM—SS21





Figure 3-7-88: SS21

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
3	TEL weight 18,145 kg ZIL-5937 or BAZ 5921 transloader vehicle carries a further two missiles and a crane. Supported by a tactical transloader (9T218) and a 9T238 missile transporter trailer towed by a ZIL-131 truck	9M79-1 (Tochka-U) Fired from the 9P129 6x6 wheeled transporter erector launcher	Range 120 km CEP 95 m Reload time 20 min, into action time 16 min.	HE-Frag chemical terminally guided smart- munition bomblet

ARTILLERY—MORTARS—2B14

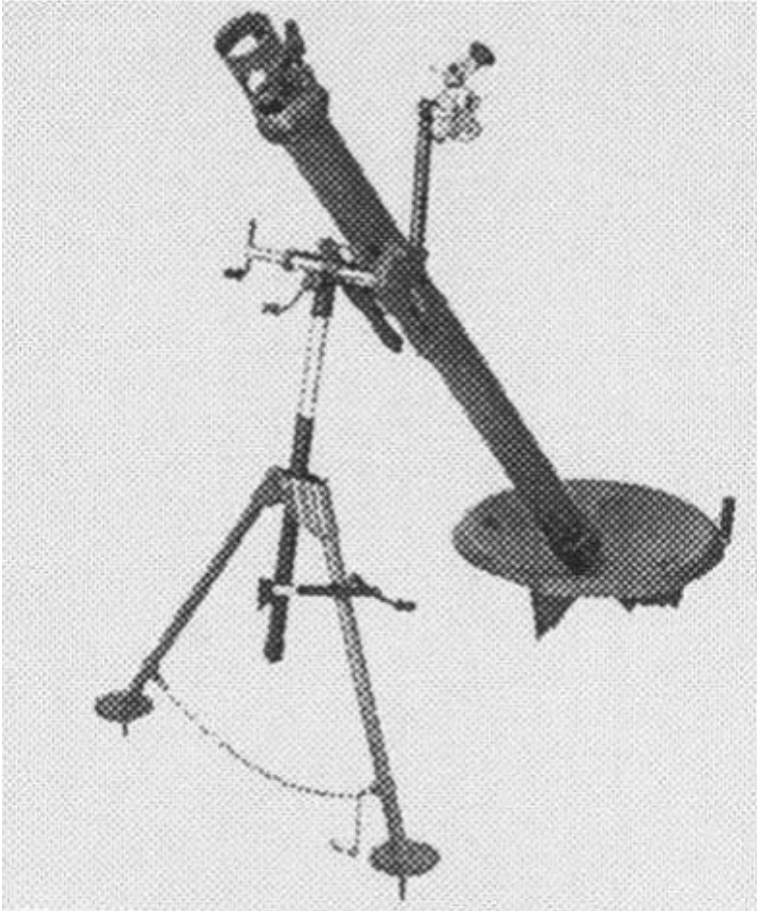
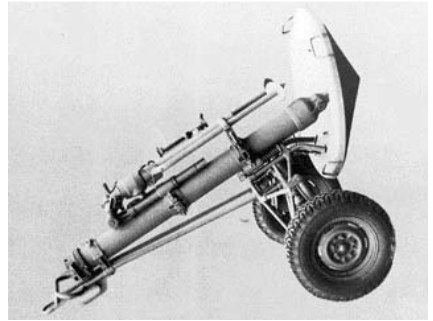


Figure 3-7-89: 2B14

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
3	Weight 42 kg Man-packed or vehicle carried	82 mm MOR rate of fire 24–30 rpm	125 m–4,300 m	HE illumination smoke

ARTILLERY—MORTARS—2B11**Figure 3-7-90: 2B11**

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
5	Weight 297 kg Carried or towed (for short distances) by GAZ-66 or MTLB	120 mm MOR rate of fire 15 rpm	460 m-7,180 m	HE incendiary illumination smoke

ARTILLERY—MORTARS—2S31

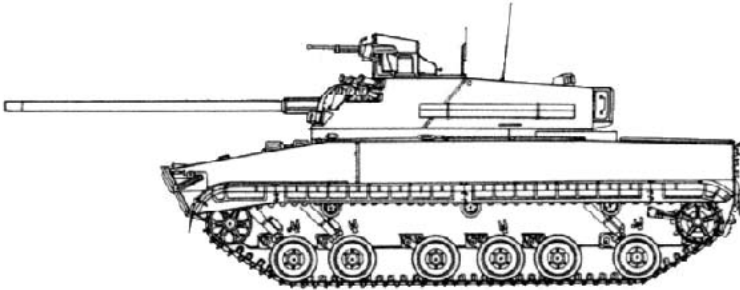
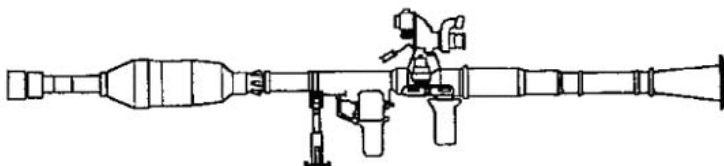


Figure 3-7-91: 2S31

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
4	Based on BMP3 Weight 19 000 kg Speed: 70 kph Range 600 km Equipments	120 mm Mortar	13,000 m 17,000 m for RAP	25 HE (RAP) WP illumination smoke LGP(A)

ANTI TANK—SHOULDER LAUNCHED—RPG7V**Figure 3-7-92: RPG7V**

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
1	Missile weight 2.2 kg	Calibre 40 mm length 953mm weight 7.9kg	300 m–500 m	HEAT

ANTI TANK—SHOULDER LAUNCHED—RPG29**Figure 3-7-93: RPG29**

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
1		Calibre 105.2 mm Length 1 m Weight 20 kg	500 m Max 800 m	HEAT

ANTI TANK—ANTI TANK GUN SYSTEMS—AT4A

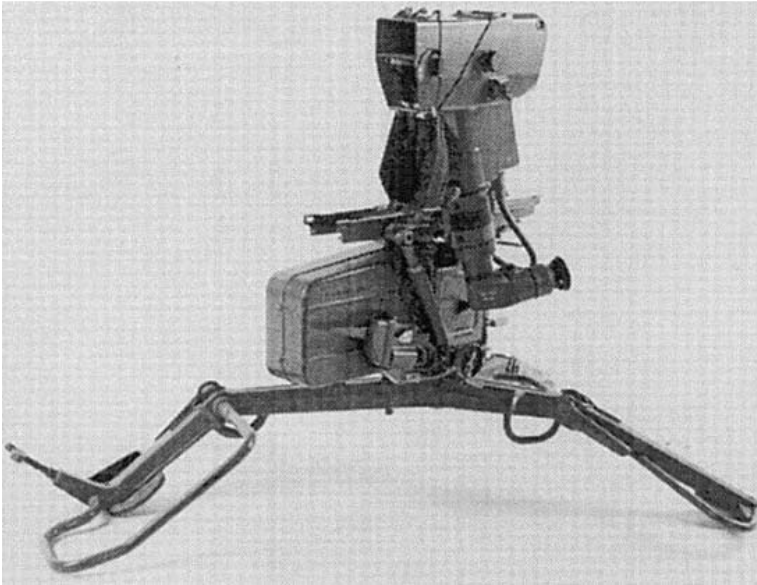


Figure 3-7-94: AT4A

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
	Missile diameter 119 mm	Thermal Sight	70 m–2,000 m	HEAT
		SACLOS	3,600 m	
		Identification	2,000 m	

ANTI TANK—ANTI TANK GUN SYSTEMS—AT5A**Figure 3-7-95: AT5A**

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
	Missile diameter 135 mm	Thermal Sight SACLOS, wire-guided Identification	70 m–4,000 m 3,600 m 2,000 m	HEAT

ANTI TANK—ANTI TANK GUN SYSTEMS—AT13

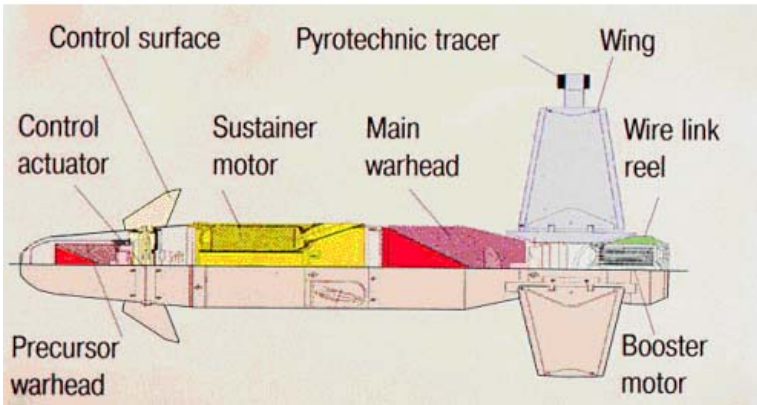


Figure 3-7-96: AT13

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
	Missile diameter 127 mm	SACLOS, wire-guided	30 m–1,500 m	Tandem HEAT FAE

ANTI TANK—ANTI TANK GUN SYSTEMS—AT14**Figure 3-7-97: AT14**

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
	Missile diameter 153 mm	Thermal Sight Laser beam rider SACLOS Identification	100 m–5, 4,000 m 3,500 m	Tandem HEAT FAE

ANTI TANK—ANTI TANK GUN SYSTEMS—9P148



Figure 3-7-98: 9P148 (BRDM3) Wheeled Tank Destroyer

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
2	BRDM3 Weight 7,000 kg Speed 100 kph Range 750 km Fuel 290 L	(SACLOS) 5 msl in lchr 5 msl stowed	100 m–4,000 m	Carries a mix of AT4 and AT5

ANTI TANK—ANTI TANK GUN SYSTEMS—9P149**Figure 3-7-99: 9P149**

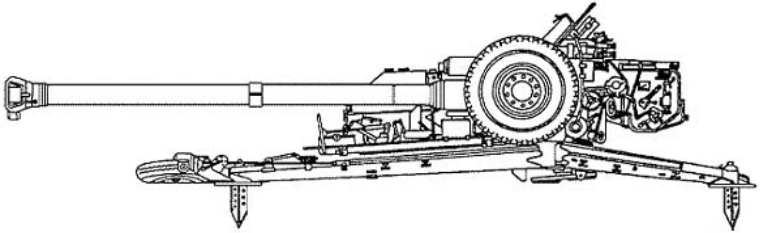
Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
2	MT-LB Weight 12,300 kg Speed 65 kph Range 500 km Fuel 290 L	Tandem HEAT (SACLOS) 1 msl in lchr 12 msl stored	400 m–6,000 m	Thermobaric and fuel air explosive (FAE)

ANTI TANK—GUN SYSTEMS—MT12



Figure 3-7-100: MT12

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
6	Weight 3,050 kg towed by MTLB	Calibre 100 mm Indirect fire Into/out of action in 30 sec	1,000 m 2,000 m 4,000 m 8,200 m	HEAT HVAPFDS ATGM

ANTI TANK—GUN SYSTEMS—2A45M**Figure 3-7-101: 2A45M**

Crew	Characteristics	Weapons/Misc.	Eff Range	Ammo
7		Calibre 125 mm Indirect fire Towed by URAL 4320 Into/out of action in 90–120 sec	1,000 m 2,100 5,000 12,200	HEAT APDS ATGM

NBC—BRDM2—RKH



Figure 3-7-102: BRDM—RKH NBC Vehicle

Crew	Characteristics	Weapons/Misc.
4	See BRDM	This is the chemical reconnaissance version of the BRDM. It is equipped with lane-marking poles and flags. The flag/pole dispensers are located on the rear corners of the vehicle hull. This version retains the standard 14.5 mm machine-gun.

NBC—RKHM

No image available

Crew	Characteristics	Weapons/Misc.
3	Based on 2S1 chassis Speed 60 kph Weight 13,000 kg Range 500 km Amph 6kph	1 x 14.5 mm MG (2,000 m) 1 x 7.62 mm MG (1,500 m) Detects and identifies CW agents, determines radiation levels, marks areas of contamination. Pers can conduct dismounted reconnaissance.

NBC—TMS-65**No image available.**

Crew	Characteristics	Weapons/Misc.
	Based on URAL0375E truck chassis	Rear Mounted VK-1 Aircraft turbojet engine Centre mounted 3,000 L decontamination solution tank Can decontaminate one vehicle in 2-4 mins

AVIATION/AIRCRAFT—ATTACK HELS—MI24 (HIND)



Figure 3-7-103: Mi24 Hind

Type	Range (km)	Crew	Armament	Max Speed (kph)	Rotor (m)	Ceiling (m)
Multi-role	1,000	2	55 mm and 80 mm unguided missiles, AT-2 Swatter AT missiles, 23 mm Gryazev-Shipunov GSh-23L two-barrel gun, 12.7 mm rotary four-barrel heavy machine-gun, 7.62 mm rotary four barrel machine-gun, 30 mm grenade launcher, HE bombs, cluster bombs, mine dispensers, 12.7 mm JakB-12.7 rotary four-barrel machine-gun	335	17.30	4,500

AVIATION/AIRCRAFT—ATTACK HELS—MI28 (HAVOC)**Figure 3-7-104: Mi28 Havoc**

Type	Range (km)	Crew	Armament	Max Speed (kph)	Rotor (m)	Ceiling (m)
	470	2	16 x AT6 Schturn anti-tank missiles, 55 mm and 80 mm unguided rockets, AAMs, one 30 mm 2A42 cannon	300	17.20	5,800

AVIATION/AIRCRAFT—SP HELS—MI8 (HIP)



Figure 3-7-105: Mi8T Hip-C

Type	Range (km)	Crew	Armament	Max Speed (kph)	Rotor (m)	Ceiling (m)
Transport and assault helicopter	1,200	4	55 mm unguided rockets, 250 kg bombs. Carries 24 combat equipped troops	260	21.30	4,500

AVIATION/AIRCRAFT—SP HELS—MI38 (COMD POST)**Figure 3-7-106: MI38 (Comd Post)**

Type	Range (km)	Crew	Armament	Max Speed (kph)	Rotor (m)	Ceiling (m)
Command and control	375	2	Can carry 30 troops but used in the CP role	275		6,500

AVIATION/AIRCRAFT—SP HELS—MI26 (HALO)

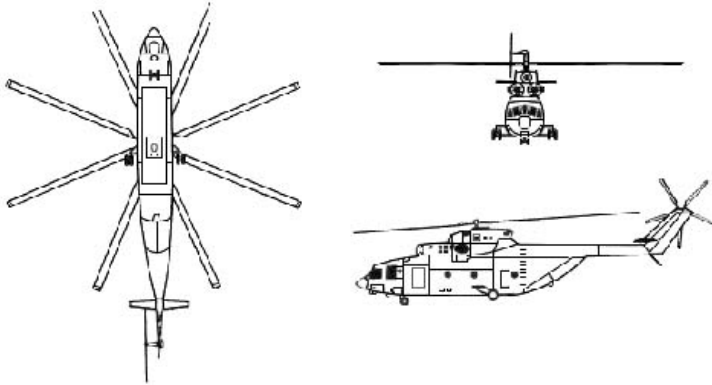


Figure 3-7-107: MI26 (Halo)

Type	Range (km)	Crew	Armament	Max Speed (kph)	Rotor (m)	Ceiling (m)
Transport		5	Standard Payload 20,000 kg internal or external load Over 80 troops, 60 litters, or 2 x BRDM2 scout cars, or 2 x BMDs, or 1 x BMP or, 1 x BTR60/70/80 or, 1 x MT-LB	295	32	4600

AVIATION/AIRCRAFT—RECCE/LO HELS—GAZELLE**Figure 3-7-108: S341 Gazelle**

Type	Range (km)	Crew	Armament	Max Speed (kph)	Rotor (m)	Ceiling (m)
Recce	670–735	1–2	GOA observation sight with II and x10 scope.	310	10.5	2370

AVIATION/AIRCRAFT—COMBAT AIRCRAFT—MIG23 (FLOGGER)

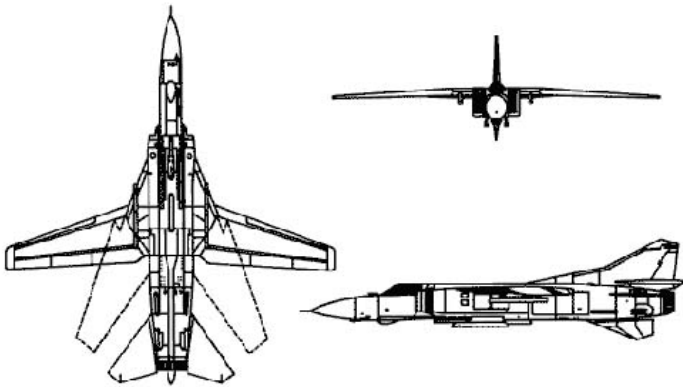


Figure 3-7-109: MIG23 (Flogger)

Type	Range (km)	Crew	Armament	Max Speed	Wing span (m)	Ceiling (m)
Ground attack, bomber	540	1	AA-2 Atoll, AA-8 Aphid; AS-7 Kerry, AS-10 Karen, AS-12 Kegler; 55 mm and 240 mm unguided rockets; 50 kg, 100 kg, 250 kg and 500 kg bombs; one 23 mm Gryazev-Shipunov GSh-23L cannon	Mach 1.7	13.96	14,000

**AVIATION/AIRCRAFT—COMBAT AIRCRAFT—MIG23 MLD
(FLOGGER K)**



Figure 3-7-110: MIG23 MLD (Flogger K)

Type	Range (km)	Crew	Armament	Max Speed	Wing span (m)	Ceiling (m)
Air Defence Interceptor		1	new air-to-air missile capability 4 x R37 LRAAMs, 4 x R37 MRAAMs, 4 x R73 SRAAMs Radar 200 km range; 120 km in look down mode	1500	13.96	20,600
<p>Avionics package dubbed Nucleus; includes: new digital computer systems; two Multifunction Colour Liquid Crystal Displays (MCLCDs); two multifunction control panels; RWR combat radius 850 km (71260 with AAR); endurance 3 1/2 hr (7 with AAR)</p>						

**AVIATION/AIRCRAFT—COMBAT AIRCRAFT—SU24M
(FENCER)**



Figure 3-7-111: SU24M (Fencer)

Type	Range	Crew	Armament	Max Speed	Wing span (m)	Ceiling (m)
All-weather attack fighter-bomber strike	1930 nm	2	Cannon: GSh-6N-30 30 mm rotary AS-7/9/10/11/12/14, AA-8, FAB-500, TN-1000, AA-11		17.26	16,500

AVIATION/AIRCRAFT—COMBAT AIRCRAFT—SU25 (FROGFOOT)



Figure 3-7-112: SU-25 Frogfoot A

Type	Range (km)	Crew	Armament	Max Speed	Wing span (m)	Ceiling (m)
Ground attack aircraft	1,250 (with drop tanks)	1	Cannon: 1 GSh-6-N-30 30 mm rotary AS-7/9/11/12, AA-8 Aphid, FAB-250, UV-32-57, FAB-500, 500 kg LGB, FAB-250			7000

**AVIATION/AIRCRAFT—COMBAT AIRCRAFT—SU24MR
(FENCER E)**



Figure 3-7-113: SU-24M (Fencer D)

Type	Range (km)	Crew	Armament	Max Speed	Wing span (m)	Ceiling (m)
All-weather recce (MR) and ECM (MP)	2,000	2	Cannon: 6 barrel 23 mm cannon 4 x R-60 SRAAM; nav/terrain avoidance; RWR/MWR; internal ECM; chaff/flare dispensers; sensors – MR, multi-mission SLAR, IRLS, TV, camera, ELINT pod, optional laser pod, data link to ground MP, radar and radio jammers.		17.26	17,500

AVIATION/AIRCRAFT—COMBAT AIRCRAFT—TORNADO**Figure 3-7-114: Panavia Tornado GR1 IDS (Interdictor/Strike)**

Type	Range (km)	Crew	Armament	Max Speed	Wing span (m)	Ceiling (m)
Strike aircraft	1850	2	AIM-9L Sidewinder; Sea Eagle; Paveway, GBU-15, BL755 cluster, 240, 227 and 113 kg bombs; 27 mm MauserBK27 cannon	Mach 2.20	13.91	21,335

AVIATION/AIRCRAFT—TRANSPORT AIRCRAFT—II-76MF (CANDID)

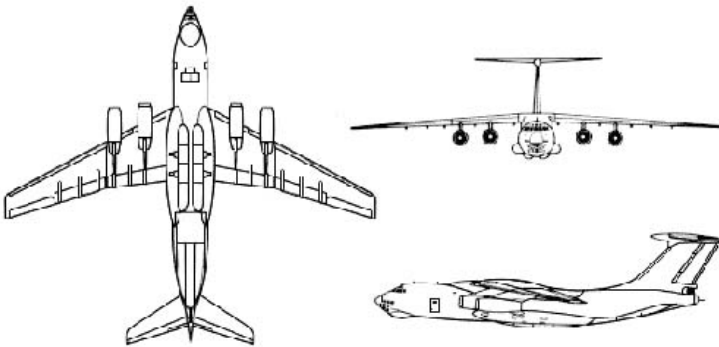


Figure 3-7-115: II-76MF (Candid)

Type	Range (km)	Crew	Armament	Max Speed (kph)	Wing span (m)	Ceiling (m)
Heavy-transport, cargo (tanks, guns, and other equipment)	3,000	7	Rear gun turret on military model. Carries 125 paratroops, 140 troops or 225 troops with second deck. IRCM packs.	750		11,000

AVIATION/AIRCRAFT—TRANSPORT AIRCRAFT—AN-124 (CONDOR)

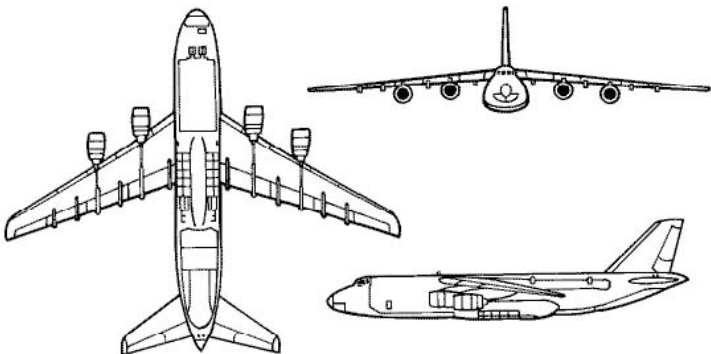


Figure 3-7-116: AN-124 (Condor)

Type	Range (km)	Crew	Armament	Max Speed (kph)	Wing span (m)	Ceiling (m)
Strategic transport	16,500	7	Payload 88 passengers or cargo in a 36.5 m x 6.4 m x 4.4 m (1027.8 cu. m)	865	73.3	12,000

AVIATION/AIRCRAFT—TRANSPORT AIRCRAFT—II-20 (COOT)

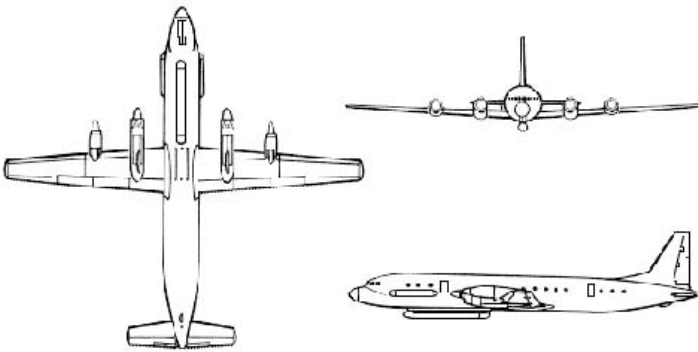


Figure 3-7-117: II-20 (Coot)

Type	Range (km)	Crew	Armament	Max Speed (kph)	Wing span (m)	Ceiling (m)
Electronics surveillance	6,500	5	SLAR and ELINT sensors	625	37.4	800-1000