



FUNDAMENTALS OF COMBINED ARMS MANEUVER



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Consistent with NATO doctrine, this document is part of national doctrine and lays out the general manner in which the resources of land forces in operations must be combined for coherent employment, depending on the different commitment contexts which can be envisaged today. It excludes missions on the national territory.

FT-04 is part of the series of founding documents of the French Army’s doctrine corpus and is coherent with joint documents. It is also intended as a reference for the drafting of employment doctrine for warfighting land functions.

Major General Olivier TRAMOND



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FOREWORD

This document describes broadly how a land force's assets must be combined, in relation to the various currently foreseeable engagements. It serves as a reference for personnel developing warfighting doctrine as well as those conducting training, education and leadership development, force generation, planning and conduct of land operations. However, the contingencies of armed combat will always be a central parameter in any engagement. This doctrinal document in particular has therefore a dual objective:

- on the one hand, it is ambitious, demanding a coherent vision of combined arms operations from the Army's planning and execution actors;
- on the other hand, it must be reasonably limited because its principles must in the end be adapted to the actual operational environment, whose reality is characterized by complexity and responsiveness. It is necessary to extrapolate and to combine the patterns outlined in this manual.

We consider operations across the spectrum of conflict, namely offense, defense, security and assistance¹ while taking into account all possible adversaries (symmetric, dissymmetric and asymmetric). This document thus encompasses the doctrines specific to each military branch. It regroups field manuals governing the employment of combined arms brigades, battalion task forces and company teams, as well as those related to specific types or aspects of operations (urban or mountain areas, fire coordination, contact with populations, protection of facilities and/or convoys).

Land maneuver can be defined as the manner in which forces are committed on the battlefield. It combines movement, actual or potential fire and non-kinetic effects, so as to gain a physical and psychological advantage over the adversary while accomplishing the assigned mission.² This maneuver typically employs combined arms at all tactical levels.

¹ Assistance operations will only be touched upon. In this particular context – generally in crisis exit – military assets are merely a support force to those implemented at interagency or non-governmental organization (NGO) level. The military commander does not control the action and does not conduct any maneuver, but merely executes the tasks entrusted to him.

² Based on the definition given in French field manual FT 02 (p.54).

Three tactical purposes

- 1. Reducing the adversary's capabilities** has always been the fundamental objective of any military action. Land forces carry out decisive actions designed and executed in a joint context. They combine actions conducted by contact units using indirect fires and electronic warfare, along with tactical intelligence and information operations. Land forces are indispensable in gaining an advantage over the adversary without systematically or totally destroying them. Direct confrontation is not always sought. An indirect maneuver, i.e. military victory through collapse while using coercion rather than destruction, may often be preferred. Eventually, relative and temporary superiority should be applied upon an identified vulnerability to obtain the material and psychological dislocation of the adversary as in the past, but also through additional means.
- 2. Controlling the physical and human environment** used to be considered a mere means and not an end. It involves providing protection or security to threatened populations and forces deployed in the theater of operations, ensuring free movement of friendly forces locally and facilitating decisive tactical actions. The control of land requires varied and numerous resources, as well as coordinated action with other military and civilian actors.
- 3. Influencing perceptions** means accounting for the psychological and cultural dimensions of conflicts in a fully interconnected, over-informed and not always harmonized world. In contexts where the use of force must be limited to the minimum necessary, success is also achieved through presence, communication, explanation, advice and assistance. Military action needs to be legitimized at local and regional levels while restoring the self-confidence of the local population in order to prevent any resurgence of violence. It means providing advice to local government agencies so as to facilitate the recovery of social, economic and civic life. Security must be re-established, while ensuring the support of public opinion at home.

I. COMBINED ARMS ACTION

Combined arms action is both a modern and future requirement in land operations. It combines the capacities of the warfighting functions, components or branches,³ in order to boost the effectiveness of the overall maneuver. It aims to foster synergy between the various field components down to echelons lower than previously considered.

Within this context, combined arms action is the underlying rule for any force because it alone permits comprehensive tactical operations. It means unifying the actions of the warfighting functions or components under one command to ensure cooperation while pursuing a common objective. The warfighting functions and components are found within the organizational structure of a corps, division or brigade. They require combined arms structures to be established at lower levels.

Tactical units organize their actions in a *continuum* of operations. They operate at each phase – intervention, stabilization and normalization – according to specific tactical approaches: the offensive, the defensive, and those relating to security and assistance.

When engaged, the warfighting functions and components are systematically present within level 1 and level 2 forces (Corps and Division), partially in level 3 (Combined Arms Brigade), and sometimes within level 4 (Battalion Task Force), and level 5 units (Company Team).

1.1. GENERAL PRINCIPLES OF OPERATIONS

1.1.1. Constants

The constants of combined arms unit engagement are:

- taking and maintaining the initiative;
- seeking surprise;
- prioritizing maneuver (combination of movement, fire, and immaterial effects);
- optimizing the employment of resources (effort, relative combat power, sequence of deployment);

³ These terms are defined at § 1.2.

- permanently employing security and protection measures;
- optimally exploiting the terrain thanks to knowledge of the environment.

1.1.2. Keys to success

Whatever the course of action or level, the keys to success are the following:

- unity of command;
- permanent command through digitized (and redundant) connections;
- liaison with allies and with other services, especially the air force;
- three-dimensional coordination (3D) over the maneuver space;
- intelligence and information management;
- capacity to maneuver, encouraging a favorable balance of combat power;
- coherence of maneuver;
- four-block unit structure providing enhanced flexibility in action;
- establishment of a reserve;
- organization, coordination and combination of any type of fire support;
- terrain management;
- capacity to switch between operations;
- logistical support and its adaptation to the maneuver so as to create sustainment capacity.

1.2. WARFIGHTING FUNCTIONS OF LAND FORCES AND THEIR COMPONENTS

The necessary effect must be generated at each tactical level, i.e. reduce the adversary's capabilities, control the environment, and influence hearts and minds, while retaining resources for action (command, support). That is why land forces are organized in terms of warfighting functions, each corresponding to an effect. The combination of these functions and the consideration of the characteristics of a theater of operations or the type of commitment are done through the force generation process. This process makes it possible to adjust

the volumes and proportions of its different components in order to determine their task-organization, providing the Chief of Defense Staff with a land component formed with the capacity to meet the requirements of a specific commitment.

1.2.1. Key joint functions

“The joint warfighting functions provide the dynamic combination of warfighting capacities, playing a particular contributive role in military action.”⁴ Among these functions, regardless of the nature of the commitment, the joint action of armed forces always requires mastering the four key functions: *command*, *achieve information superiority*, *operate*, *sustain*. These functions are closely intertwined. They can be further split into specialized warfighting functions, especially those specific to each component.

“Command” ensures the synergy of the other three key functions: operate, sustain, and achieve information superiority. The latter also contributes to sustaining command. It encompasses the authority of the operating command while allowing the commander to commit and combine military capabilities in physical, human or immaterial fields, most often in a multinational or multi-agency context, in order to contribute to permanent or temporary political objectives.

“Achieving information superiority” includes gathering and exploiting information, i.e. knowledge acquisition, particularly through intelligence collection. It also involves information management and protection, damaging the adversary’s information systems and the operational use of information, particularly through influence. Lastly, it consists in dissemination, through operational communication.

“Operating” essentially aims at physically threatening and tangibly affecting the adversary, making them unable to conduct physical actions. It implements a number of functions while combining them in time and space, namely through “deployment, combat, self protection, and endurance.” It is the most concrete expression of military action and actual or potential combat mark its specificity.

“Sustaining” aims to ensure that the committed forces at the level required by the command are constantly supplied with the resources and services needed for their functioning and action. Sustainment is organized in two warfighting

⁴ As defined in the French doctrine publication DIA 01 “Doctrine d’emploi des forces”.

functions: “logistical support” and “military administration.” In turn, these two warfighting functions break down into thirteen subordinate functions that enable forces to deploy, live, act, fight, endure, and remain combat-ready.

Although the key functions are distinct, they cannot be separated in either the initial planning or the conduct of an operation. To be successful, the task of the “command” function is to create the most judicious synergy possible between the other functions, in order to achieve the desired end state.

The following chart illustrates this classification that must be regarded as the **dominant but not exclusive contribution** of the components to the warfighting functions, and of the warfighting functions to key joint functions.

This is why the electronic warfare component, which belongs equally to the intelligence component and to the combat support function, is described under the latter heading, but this in no way diminishes the importance of the first.

JOINT	LAND FORCES	
4 KEY FUNCTIONS	8 WARFIGHTING FUNCTIONS	24 COMPONENTS
COMMAND	UNIVERSAL	
	COMMAND	Command
		Headquarters and Staff techniques
	COMMAND SUPPORT	CIS (Communication and Information Systems)
		Support to HQs
	INTELLIGENCE	Intelligence
		Geography
		Meteorology
	IN OPERATIONS	
	ACHIEVE INFORMATION SUPERIORITY	CONTACT (CLOSE COMBAT / MANEUVER)
Dismounted combat		
Aviation combat		
COMBAT SUPPORT		Engineers
		Indirect fires
		Air defense
		Electronic warfare
ACTION ON PERCEPTIONS AND OPERATIONAL ENVIRONMENT		CIMIC
		Military influence operations
		Operational/Strategic Communication
OPERATE	MANEUVER ENHANCEMENT	Support to movement
		Mobility support to armored units
		CBRN
		UNIVERSAL
SUSTAIN	LOGISTICS	Flow control
		Maintenance
		Personnel support
		General engineering support

1.2.2. Warfighting functions of land forces

As a joint consideration, DIA 01 provides a definition of the warfighting function that can be adapted to land forces: *“a dynamic combination of one or more warfighting capacities in order to play a particular part contributing to military action.”*

As far as the French land forces are concerned, the different warfighting functions are not always homogeneous in terms of volume. Eight land warfighting functions can be identified and organized in two major groups:

- The **so-called “operations” warfighting functions** whose objective is to produce military effects on the environment and/or the adversary: *“Contact (close combat), combat support, maneuver enhancement, and actions on perceptions and the environment.”*
- The **so-called “universal” land warfighting functions**. These are indispensable to their implementation: *“Command, command support, intelligence, and logistics.”*

1.2.3. Components⁵

A component can be defined as elements of a force with specific capacities, equipment, and aptitudes that enable them to produce their own military effect on the adversary and/or environment. A component is made up of structures, personnel, equipment, knowledge, and procedures resulting in a common purpose in terms of effects to produce.⁶

24 components contribute to the action of the land forces.

⁵ Not to be confused with interservice doctrine: “component” used here to mean “part of” has nothing to do with “service component” as in the expressions “Army component,” “air force component,” or “navy component.”

⁶ In some cases, especially for the “contact” and “combat support” functions, this concept encompasses the previous concepts of branch, or military occupational specialty (MOS).

COMMAND function

The Command function encompasses all the human resources, authorities, structures, procedures, and equipment that enable the commander to:

- mobilize available resources;
- plan the employment of allocated forces, organize them, direct them, coordinate them, and lead them to accomplish the mission and evaluate the degree of accomplishment;
- possess the necessary tools for staff work and staff support.

a/ Command

Command is the preserve and duty of the commander. It includes the decision-making stages of order-drafting and the exercise of authority. In short it embodies the unique and personalized – but not isolated – nature of command.

b/ Headquarters and staff techniques

These are the personnel, structures, and warfighting staff procedures that enable the combined arms commander to design the maneuver, develop orders, and plan, conduct and assess the action.


COMMAND SUPPORT function

Command support includes all the physical and human resources that enable the authorities to command and HQs to function and communicate.

c/ Information and command systems

This component integrates personnel, equipment, organization, procedures, liaisons and elements of doctrine together in order to provide the authorities and their staff with the facts required to plan, conduct and control their activities in a timely manner.





d/ HQ support

The headquarters support component includes personnel, organization, equipment and elements of doctrine in order to provide the authorities and their staff with the structure necessary for the exercise of command, and ensures headquarters have the ability to maneuver, to endure and to ensure immediate security.

INTELLIGENCE function

Preceding, accompanying and extending any action, the intelligence function contributes to constant assessment of risks and threats by analyzing information on the adversary and physical and human environments. It assists the command in decision-making regarding:


- the goals to achieve;
- the design of the maneuver;
- the consequences of the maneuver on the adversary and on physical and human environments.

e/ Intelligence

Intelligence is organized around the concept of an “intelligence cycle” of successive phases: planning and direction, collection, analysis and dissemination. Direction and exploitation are largely the responsibility of various staff levels while collection is performed by different units, specialized or not, and organized according to their specialties. Finally, dissemination informs upper as well as lower echelons.

f/ Geography

This field encompasses structures, human and physical assets, and procedures dedicated to the collection of geographical information, to geographical support for staffs and units, in particular through the creation and delivery of geographical and mapping products. This component’s universal character stems from its integration with the intelligence function.





g/ Meteorology

This component of the intelligence function includes structures, human and physical assets and procedures dedicated to meteorological support of operations. Its integration with the intelligence function is purely functional and responds to no operational reality.

CONTACT (CLOSE COMBAT/MANEUVER) function

The *raison d'être* of the contact function is to gain an advantage over the adversary through a combination of tactical movements and fires. The concept of contact is not linked to a particular geographic location, or a determined opposing echelon.

h/ Mounted combat

This is an essential part of the action of armored units, allowing decisive and brutal action, direct engagement, and reconnaissance and intelligence actions, particularly in open terrain, while maintaining a high tempo over long distances. Armored units support control of vast areas and are characterized by shock and combat power by providing direct fire, mobility, speed and protection. They thus offer the tactical commander reversibility, gradation of effects and immediate posture changes.

i/ Dismounted combat

An essential part of infantry combat, enabling the force to conquer and defend land, control the environment over time, destroy or capture the enemy in difficult areas, and operate in contact with populations.

j/ Aviation combat

Aviation combat integrates aviation tactics, missions and courses of action into the land maneuver in combination with the other components of the contact function. Aviation combat offers the combined arms commander vision, mobility, responsiveness, reversibility and gradation of effects that fully contribute to near-ground tactical surprise and to maintaining initiative. To optimize limited resources, aviation combat must be included from the design phase of the combined arms maneuver and integrate aviation units at the most suitable command level.

COMBAT SUPPORT function

The combat support function encompasses indirect fires, terrain management and electronic warfare; any assistance which can be provided to contact units in accomplishing their missions.

This concept of combat support – the functional meaning of the term – is not to be confused with the position of a contact unit of the function “in support of,” which is specifically a mission term (see French Army field manual TTA 106).

k/ Indirect fires

Indirect fire is any high angle fire support delivered by land weapons in support of a land force. Indirect fire produces selective effects on the opponent in preparation or conduct of a maneuver.

l/ Engineering

Actions dedicated to direct support of engaged contact units by directly affecting the terrain and/or adversary. In addition to their general support role, engineering provides specific capacity to participate in close combat and collect terrain information.

m/ Electronic Warfare

EW units perform surveillance, electronic defense and attack missions by supporting units and involving assets and skills dedicated to the use and exploitation of the electromagnetic spectrum.

n/ Ground-air defense

Ground-air defense includes terrestrial forces combating the adversary’s aerial weapon systems. Its purpose is to contribute to the land force’s freedom of action by direct protection of a unit or site, while contributing to the attrition of enemy air capacities.

SHAPING PERCEPTIONS and the OPERATIONAL ENVIRONMENT function

This function includes all deliberate actions taken to affect perceptions directly or indirectly, i.e. actions contributing to cooperation, influence and communication. In tactical terms, they principally coordinate the following three components:

o/ Civil-military cooperation (CIMIC)

Civil-military cooperation aims to improve the force integration in the human environment of the commitment in order to facilitate accomplishment of the mission, normalization of the security situation, and the gradual ownership of crisis management by local civilian authorities (local administration, humanitarian work, economic recovery, etc.).

CIMIC aims to:

- achieve political objectives by facilitating coordination between the various military and civilian actors through the establishment of permanent liaisons with civilian authorities handling the crisis;
- enhance military action by favoring the acceptance of the force in a complex civilian environment and providing expertise on the civilian community to other operational functions;
- accelerate crisis exit by providing support to civilian actors so that they may assume their responsibilities as soon as possible;
- defend national interests by ensuring that our interests are legitimately considered and by paving the way for French civilian actors.

p/ Military influence operations

Military influence operations are the only contributing function related to influence actions. They include all activities aimed at affecting the behavior of individuals, groups or organizations (target audiences) in order to contribute to achieving political and military objectives. They employ means which do not necessarily involve the use of force or authority.





q/ Strategic communication

Strategic communication aims to guarantee a perception of military action that on the one hand ensures public support and understanding and on the other supports the action by contributing to the creation of a favorable environment. This communication addresses the following priority-order objectives:

- win over national and international public opinion;
- control the media environment of forces in operations;
- ensure local support for the action of armed forces in theater;
- support the morale of engaged forces;
- affirm France’s role on the international scene.

MANEUVER ENHANCEMENT function

Maneuver enhancement includes specific types of indirect support that aim to facilitate the operation, particularly before the decisive phase.

r/ Support to movement

“Support to movement” refers to all actions performed by traffic control units to support road travel in the deployment and conduct of the maneuver in a theater of operations.

s/ Mobility support to armored units

Any actions performed by units specialized in supporting the mobility of armored vehicles. Their role is to support the strategic, operational and tactical mobility of these vehicles in order to spare human and material assets when shifting the effort from one point of the theater to another in order to obtain a locally favorable balance of combat power.

t/ CBRN defense

CBRN covers the range of plans and measures to avoid or reduce the effects of the actual or threatened use of CBRN weapons or devices. It also concerns prevention and self-protection from the occurrence of a secondary danger due to the effects of a friendly strike, or of industrial substances being released into the environment.

LOGISTICS function

The logistics function aims to provide land forces with means to live, fight and move, of the appropriate quantity and qualities, where and when needed. It also includes medical support for personnel and equipment maintenance.

u/ Flow control

Flow control concerns all logistical support operations ensuring that the force is autonomous and that its needs are satisfied, through strict definition of needs and linear tracking of human, material and nonmaterial resources.

v/ Maintenance

This component involves ensuring that all units have available the materiel and equipment needed for their warfighting missions. This is achieved through the following functions:

- maintenance and repair of hardware, equipment, and weapon systems;
- recovery and evacuation of assigned and friendly equipment (or even that of the adversary);
- organization of local procurement, if necessary.

w/ Personnel support

All of the operations contributing to maintaining the soldier's readiness in various fields, including in the areas of administration, law (disputes), health, field services, health and safety in operations, and protection of the environment.

x/ General engineering support

This component consists in maintaining, adapting, rebuilding or creating the infrastructures needed by people and materiel, including the production and distribution (of water and energy).

1.3. TACTICAL LEVELS OF COMMAND AND EMPLOYMENT

Air-land maneuvers are planned, conducted and executed at tactical level in order to achieve the theater commander's objectives. Overall responsibility for the conduct of the land force's tactical maneuver rests with the land component commander, a direct subordinate of the joint theater commander.

Air-land tactical maneuver is an integral part of the joint operational maneuver. Its aim is to destroy, neutralize, or control enemy nerve centers, such as combat units, reserve elements, support units, command posts, and telecommunications centers, as well as vulnerabilities (unoccupied areas in their disposition, logistics areas, etc.) It also aims to hold key terrain for surveillance, intelligence, control of the environment, and neutralization of the opponent by combined fire and movement.

Combined arms units are classified into several levels of command and/or employment:

- Level 1: capable of manning a corps HQ or LCC (Land Component Command), this level possesses all land warfighting functions;
- Level 2: capable of manning a divisional HQ or a Land Component Command HQ in a joint environment (such as "Guépard" or "Neptune," including on the national territory if necessary), this is the integrated and synthetic level of a predominantly land-based maneuver;
- Level 3: capable of manning a combined arms brigade HQ, this is the level where the combined arms tactical maneuver is designed;
- Level 4: applies to the combined arms or aviation battalion task force (battalion +);
- Level 5: applies to the combined arms or aviation company team (company +).

Platoons (including those belonging to combat support and aviation branches) (level 6) and squads (esp. from CS branches), armored vehicles or helicopter teams (level 7) are not strictly command levels but operating levels.

While they ensure a certain degree of unit versatility due to their combined arms nature, their combined arms composition is based on a core consisting of a single unit. This gives them a dominant specialty, i.e. armor, infantry or aviation combat.

1.3.1. Army corps (LCC) level: includes all the warfighting functions of land action (level 1)

The level 1 tactical command provided by the French Rapid Reaction Corps has the full array of resources needed to encompass all air-land warfighting functions.

Level 1 is able to establish a corps HQ (with 3 or 4 divisions) or Land Component Command (LLC), depending on the scope of the commitment and force composition.

1.3.2. Division level: synthesis of predominantly land-focused tactical maneuver (level 2)

The level 2 tactical command is typically ensured by a force HQ.

Level 2 is capable of planning operations and conducting the maneuver of a force up to the size of three or four brigades, including one or two allied brigades, that can be reinforced or integrated into a joint environment.

Level 2 is capable of establishing a divisional HQ or LCC in a joint HQ depending on operation scope and force composition. It may also be reduced in size, as in the case of operation “*Guépard*.”

The force HQ which establishes level 2 HQ is the highest level of operational staff which internally possesses all tactical-level warfighting functions. It also has joint modules to interface with the component commands of other services that could be engaged.

As such, it is the first complete maneuver level, whatever the strength of the committed force.

1.3.3. Combined arms brigade level: design of combined arms tactical maneuver (level 3)

The level 3 tactical command is ensured by the combined arms brigade.

Deployed, the brigade is the basic combined arms formation, responsible for the design and execution of contact actions (close combat and the unit’s relationship with the environment) while coordinating combat support in its area of operations.

It does not have permanent and internal capacities in all tactical-level warfighting functions (including logistical support, CIMIC, and military influence operations) and its planning capacity is limited to future maneuvers. To mitigate this, when it must operate independently, it receives reinforcements from level 2. It is then able to engage the warfighting functions needed for mission success.

It may also be granted operational capacity when specific reinforcements are available. It then becomes a contingency formation and is built up around a core – a permanent peace-time structure – in order to execute a given operation. Its optimal structure for a maneuver includes 4 battalion task forces and two combat support units.

Its strength ranges from 2,000 to 6,000. It is committed within a national or multinational force, as an operational land force or a subordinate land formation.

This level of command makes up on the one hand the level of warfighting coherence around which the Army is organized and, on the other, the first level of multinational interoperability, with the subordinate task forces remaining strictly national.⁷

1.3.4. Combined arms battalion task force level: conduct of the combined arms tactical maneuver (level 4)

The battalion task force is “the core tactical element” able to produce a significant effect in a basic mission assigned by the brigade. It consists of a core detached from a regiment or battalion belonging to a “close combat” warfighting function. This provides a dominant specialty (whether dismounted, mounted or aviation combat) and cohesion. It always contains units or detached elements from other warfighting functions.⁸

Five principles underpin the establishment of a task force:

- 1: Unity of command;
- 2: Capability to command and fight enduringly;

⁷ Apart from exceptional cases.

⁸ In the context of force generation, a battalion task force is preferably organized with elements from the same organic brigade. This principle of cohesion also prevails when possible during the organization or re-organization of a task force during action. One of the “contact” components puts its stamp on the task force. It is then referred to as an infantry-centric, armor-centric or airmobile-centric task force.

- 3: Combat support (artillery - engineers) is always included;
- 4: Four-company organization;⁹
- 5: Exclusively national character.¹⁰

1.3.5. Combined arms company team level: execution of the combined arms tactical maneuver (level 5)

The combined arms company team is the coherent base unit for the execution of combined arms combat. It addresses capacity requirements for complementarity at the lowest levels. It is central to the combat maneuver.

Established for a given time to conduct one or more actions the combined arms or aviation company team is organized according to the desired effects, the nature of the adversary and the environment in which it operates. It thus includes squads, platoons and detachments which may have different but complementary rhythms, equipment and courses of action. That is why, beyond simple coordination of assets, the combination of effects requires real tactical cooperation between combined arms actors.

While the combined arms task force has a headquarters, the commander of the company team – for reasons related to the space/time framework of the missions – designs and conducts a combined arms maneuver with a reduced command post.

Five principles govern the composition of combined arms company teams:

- 1: Unity of command;
- 2: Four-platoon organization;
- 3: Design around a cohesive core;
- 4: Infantry - armor - aviation combination;
- 5: Capability to use support.

Unlike the battalion task force, the company team does not have significant internal self-sufficiency in terms of command, intelligence, integrated combat support and sustainment. Possible reinforcements exist only in physical and human terms (command structure, liaisons, personnel, equipment, and vehicles).

⁹ This is the preferred structure for the success of the maneuver, even though various constraints may lead to a reconsideration of this principle, which sometimes proves difficult to apply.

¹⁰ *Ibidem*.

II. TYPES OF OPERATIONS¹¹

Today, land forces design their maneuver around four tactical methods. They characterize a specific type of action depending on the nature of the desired effects on the opponent or environment. These four methods include offensive, defensive, security and assistance operations. In principle, the dominant tactical method to be employed in a given operation is decided at operational level, preferably alongside force generation.

The *continuum* of operations (see FT 01 and 02) demands that these types of operations vary according to the intensity of combat and violence in different times and places. This is the case for each of the considered schematic phases.

2.1. TYPES OF OPERATIONS IN THE STRICT SENSE

2.1.1. Offensive operations

Offensive actions are intermittent and limited to surges in violence, often during the initial entry into the theater or during attempts to regain initiative. Offensive actions are decisive.

2.1.1.1. Principles of offensive operations

In combat, if the approach is direct, success is always obtained by an offensive action. Even in a defensive posture, all opportunities should be seized to regain initiative by offensive actions (counter-attack).

Offense holds significant advantages for the attacker:

- choice of the time and place of the attack, provoking surprise;
- capacity to determine objectives and directions of effort;
- control of synchronization and pace of actions.

Land forces are equipped, organized and trained to perform essentially offensive actions.

¹¹ Tactical methods are as defined in French field manual FT 02.

2.1.1.2. Purposes of offensive actions

Offensive action aims to gain advantage over the adversary and disable its forces. If it occurs in the pattern of an overall defensive posture, it can halt an opposing attack (counter-attack) and restores a unit's coherent disposition.

In the case of a secondary action (an action on an adversary's fringe that is not taken into account by the main effort), it is intended to divert the adversary's attention from the main effort.

2.1.1.3. Sequencing of offensive actions

When facing an identified adversary, offensive action is conducted through phases whose rapid sequencing is critical:

- preparation and planning;
- intelligence-collection related to the terrain, the adversary and the environment;
- making **contact** to confirm or reverse initial intelligence reports;
- initial **disruption** which comes down to weakening the adversary by reducing the coherence of its defensive system (capacity of command and of communication and its intelligence and air defense systems) and to attrit their combat power initially. The lines of communication that connect echelons of combat to their logistic support are potential objectives. All objectives aiming to disrupt the adversary are handled through:
 - actions in the depth (land and joint fires, EW support, and special forces);
 - specific maneuvers (such as deception).
- **breaking through** the opponent's disposition by targeting weaknesses identified or created in the previous phase. This relies on surprise and may be achieved by:
 - an indirect approach and flexibility; by enveloping and bypassing;
 - a direct approach by force, penetration, frontal attack or infiltration.

- **exploitation** that can amount to destroying but more often to the material and immaterial neutralization of the adversary. Whatever its nature, it is always carried out against the adversary's nerve centers. The fundamental determinant of success in this phase is the pace of action which encourages the paralyzing effect obtained in the previous phase and prevents the adversary from regrouping. This is made possible through the quick re-launching of the attack using reserves and through constant coordination of simultaneous actions. The neutralization of the in-depth critical points is conducted either by successive maneuver phases at the enemy's rear, or in the form of raids or pursuit;
- **consolidation:** The forces may temporarily adopt a defensive posture to protect themselves against an attack and reorganize, before switching to a properly anticipated and organized defensive action, then resume offensive action, or even be relieved.

2.1.2. Defensive operations

Insofar as is possible, defensive tactical actions should be limited in space and time (particularly in dynamic engagements). They can be a temporary means preceding an offensive action, in the same space as the maneuver or in a different zone. This defensive posture may contribute to combating an unexpected threat.

2.1.2.1. Principles of defensive actions

Defensive action is not an objective in itself. It may be:

- a preliminary stage prior to offensive action;
- a limited phase – in space and in time – of an offensive maneuver;
- a temporary action to oppose or protect the force from an identified threat in a view to re-launch offensive action.

Defensive action must not be a loss of initiative. The force benefits from the change in posture by shifting the relative combat power (offensive: 3 to 1; defensive: 1 to 3). To maintain the initiative, defensive action can generally take the form of a mobile defense maneuver to best impose the force's pace on the adversary.

2.1.2.2. Purposes of defensive actions

Defensive action is intended to:

- prepare the conditions for the offensive to resume;
- neutralize the opposing force by trapping it in a mobile defense;
- deny the adversary access to an area or seize an objective (area defense);
- in an offensive maneuver, save forces locally to transfer effort to another point.

The emphasis is on neutralizing the adversary or holding ground. It is essential to set aside a significant reserve to remain capable of responding to an unexpected threat or of conducting a counterattack.

2.1.2.3. Sequence of defensive actions

Defensive action includes three main aspects that can be combined according to the situation:

- **installation and terrain improvement** to take advantage of arriving in the zone before the adversary. It is vital to:
 - prepare terrain;
 - deploy intelligence and target acquisition systems;
 - position a defensive disposition echeloned in the depth;
 - conceal and protect the force's own vulnerabilities.
- **weakening** the enemy through:
 - countering the adversary's preparations through counter-intelligence, camouflage, deception and terrain management, and destruction or neutralization of the adversary's means of in-depth action;
 - breaking the rhythm of the opposing attack through brutal offensive responses in the form of counter-attacks and ambushes, in-depth fire to deny the re-launch of action and threaten opposing acquisition and command systems, notably through electronic warfare.

- **blocking actions** to definitively stop the adversary seizing an objective while putting the force in a position to resume the offensive. This blocking maneuver should take advantage of a favorable, strongly improved terrain enabling:
 - rearward passage of lines of friendly forces involved in breaking the opponent's attack;
 - concentration of friendly fires and use of electronic warfare assets;
 - employment of reserve forces for counter-attack.

2.1.3. Security operations

Combined arms tactical units may have to secure areas of various sizes, including urban areas, and provide assistance to the populace and non-combatants. It may be the force's main or secondary mission. This pattern fits adequately into the stabilization phase described in the *continuum*.

2.1.3.1. Principles of security operations

Security actions are essentially focused on human and physical environments. Effort is often directed to immaterial fields. These operations seek to prevent escalation or mitigate surges of violence and often involve deterrence (i.e. persuading the populace that violent action is useless), control (of human and physical environments) and response (counter-insurgency).

2.1.3.2. Purposes of security actions

The primary aim of stability actions is to create a safe, stable environment. It is either for the benefit of the local populace or that of military units not directly involved in combat (especially logistics). In the case of a simple deployment of forces, security may be the type of operation chosen for the initial phase of the action.

2.1.3.3. Sequence of security actions

These steps may be adapted to the general situation:

- **deterrence** aims to show the force's strength and determination in order to persuade the adversary or the potential opposing forces that the use of force would be ineffective. It is based on a capacity for immediate response, ostensibly demonstrated through the behavior of the force, possible shows of force, and well-targeted, determined information campaigns;

- **control** over the human and physical environments as well as the electromagnetic spectrum with an objective of domination over the assigned zone. It includes monitoring what is said, what occurs, and preparing to conduct preventative actions or react. According to the desired level of security, this control can be local, zonal (extended to non-assigned areas) targeted at certain specific threats or activities considered a priority, or generalized to all physical, human or non-material aspects of the theater;
- **response:** where deterrence is ineffective or bypassed and when control proves locally insufficient to prevent or contain an outbreak of violence, the security force must be able to respond through adequate courses of action, such as counter-insurgency. Response requires optimum responsiveness sufficient to:
 - engage armed elements, to destroy, or at least neutralize;
 - control crowd movements;
 - secure lines of communication and certain vital points;
 - accomplish temporary security missions to assist authorities, or during events.

2.1.4. Assistance operations

2.1.4.1. Principles of assistance actions

Assistance involves helping populaces which are victims of conflict or natural or technological disaster, and taking part in rebuilding the State and infrastructure. Land forces act in support of local, national or multinational interagency assets deployed to the theater and are not the first to intervene.

2.1.4.2. Purposes of assistance actions

Assistance actions are meant to accelerate normalization, or at least to arrive at the minimum conditions required for governance and the functioning of institutions and governance, and reestablishment security and socio-economic life.

2.1.4.3. Sequence of assistance actions

When on assistance missions, land forces mainly conduct actions consisting of relief, advice, training, information and reorganization/reconstruction. These actions principally include the operational functions, support (engineering), logistics and administration.

2.2. SPECIFIC FEATURES OF CERTAIN COMMITMENTS

2.2.1. Urban areas¹²

In urban areas, the non-linear disposition of the force, the intermingling of units, and the challenges of locating the adversary increase the need for initiative at the lowest contact levels. However, coordination of all actions and support requires appropriate centralization. Units engaged in urban areas face three types of difficulties:

- technical difficulties (observation, acquisition and positioning, navigation, response times and the outbreak of fire, fire safety distances, communications and liaison);
- tactical difficulties (intermingled units, identification friend or foe, split units, protection of civilians and infrastructure, pace of advance and mobility);
- psychological difficulties (human consequences related to fatigue, casualties and collateral damage to the populace).

The use of units in urban terrain is based on a combined arms structure involving rather low tactical levels (sometimes down to level 6) in order to profit from comprehensive and fairly versatile combat tools.

2.2.2. Mountain areas

In this particular geographical space, specialized mountain troops, like other units, meet restrictions to their freedom of action and initiative if they fail to follow a few simple but essential principles.

To gain advantage over the adversary in mountainous terrain, one has to overcome constraints related to the environment and, more than in any other terrain, preserve tactical mobility and the ability to surprise the adversary. Two specific principles contribute to this capability: dominance and ubiquity. The principle of domination in particular requires the use of the high ground and vertical capabilities. The principle of ubiquity involves simultaneous and omnidirectional

¹² In light of the increasing likelihood of engagements in the urban environment, the maneuver consequences in terms of requirements and constraints will be specifically developed in the following chapters devoted to the description of warfighting functions.

threat to the adversary in order to provoke a commitment of their reserve in a poor area of enclosed terrain, and to subsequently concentrate effort on a weak point of the enemy defense in order to prevail.

It is important to be aware of some success factors in mountainous areas. In addition to hardiness and endurance, these consist in preserving the force from wear, the opportune exploitation of the adversary's vulnerabilities and, even more than in other environments, tactical boldness that can transform constraints into an advantage.

2.2.3. Desert areas

From a military point of view, the desert environment, wherever situated, possesses constants associated with climatic and physical demands as well as with its inhabitants, whether adversarial or not. It is essential to anticipate the troops' vital needs and the technical constraints on weapons and their employment.

Five specific aspects of desert and semi-desert environments should be considered:

- the harshness of the climate (e.g. extreme heat; dry, windblown sands; occasional torrential rainfall; large difference between daytime and nighttime temperatures, etc.);
- the nature of reliefs and topography (mobility corridors, natural paths and choke points, depending on the quality of road infrastructure);
- the heterogeneous nature of extended maneuver spaces allows large outflanking movements and encourages non-linear combat with non-assigned areas;
- the need for drinking water (its available volume determines the logistical maneuver and thus the maneuver itself);
- the key points of inhabited areas and the major lines of communication.

2.2.4. Wooded environment

From a military perspective, the wooded environment possesses constant features associated with climatic and physical demands as well as with the adversaries who may be found there.

The built-up areas account for the major part of areas of confrontation. Often located on or in the mouth of rivers, they are generally isolated and often accessible only by a single road and/or by river. With many sensitive and vulnerable points, they lend themselves to subversive operations.

The road network is often sparse. It may even be limited to roads that are quickly degraded by weather conditions. These routes of communication offer observation and enfilade firing opportunities. Vegetation along their sides closes off the maneuver of vehicles. Dismounted maneuvers off major roads soon encounter orientation problems.

2.2.5. Actions through the adversary's depth

Even at tactical level, areas of action and interest for formations have grown. With their previously unprecedented reach, modern assets capable of fire saturation can deliver fires (GMLRS) twice as far as generally admitted.

As far as intelligence is concerned, in-depth reconnaissance units have the ability to infiltrate the opposing disposition in the depth. By exploiting intelligence supplied by UAVs, aviation and armor units, they can act on the adversary's rear echelon by bypassing the bulk of its disposition and/or by infiltration.

2.2.6. Amphibious operations

Amphibious operations involve using specialized land forces transported by vessels. They are characterized by the definition of a temporary amphibious operations area¹³ in which the commander of the amphibious task force¹⁴ has the prerogatives of a component commander for the conduct and coordination of all sea, air and land action. These operations end when the amphibian area of operations is dissolved, either through the transfer of authority over the disembarked troops to the commander of the landing force¹⁵ or through the troops' re-embarkation.

Generally, amphibious operations are an alternative to the creation of a land base or the initial-entry phase needed to conquer one. However, current national capacities limit amphibious operations to coasts that are weakly or

¹³ *Amphibious Operations Area* – AOA.

¹⁴ *Commander Amphibious Task Force* – CATF.

¹⁵ *Commander Landing Force* – CLF.

un-defended. Amphibious operations must generally be conducted under naval and air protection and preceded by shaping actions (neutralization of enemy mines and defenses, intelligence, etc).

In addition to the typical example of a troop landing, amphibious operations range from raids (whether coastal, or in-depth to facilitate transportation to a port or safe beach) to humanitarian missions along the coastline as well as to ship support of previously landed forces. In the latter case, on-board support seeks to limit as much as possible both footprint and establishment costs when, for example, the operation is of limited duration, as is generally the case given current national capabilities.

2.2.7. Airborne operations

The airborne aspect of certain operations aims to:

- provide flexibly, often in emergency conditions;
- facilitate the deployment of a larger force by initial capture and protection of a bridgehead or airport area, by intelligence collection in enemy territory, etc.;
- cover, support or sustain the overall maneuver. This is then an “integrated airborne operation.” The ABN operation contributes integrally to the achievement of the concept of operations. The airborne commitment involves elements of components involved in the broader operation. It is but a phase of the overall maneuver in accordance with planning.

The following are examples of ABN missions: capturing a crossing point; seizing and controlling key points, creating a climate of insecurity behind enemy lines; and protecting, covering or reinforcing a military or civilian disposition.

An ABN operation may be self-supported. In this case it must be limited in duration and strength (at most a battalion). It encompasses the entire operation. The composition and task organization of the intervention force favor responsiveness and operational efficiency. These two qualities are sought from the planning phase. Such actions can include raids, humanitarian missions, non-combatant evacuation, etc.

2.2.8. Operations among populations

2.2.8.1. General

Protection against crowds refers to all the protection measures that enable any soldier or unit to preserve combat power when facing the unexpected threat posed by a crowd to their mission and/or expressing hostility to the force or persons and property under its responsibility.

Crowd control represents a capacity encompassing all missions and processes allowing land forces to oppose a potentially hostile crowd actively at the suitable level and with the capacity to readjust their posture. Crowd control is exclusively carried out in overseas operations by specially trained and equipped units. It enables forces to cope with the full spectrum of individual and collective threats generated by local crowds. Crowd control is the responsibility of land forces when local police and judicial structures are absent, inadequate or failing.

2.2.8.2. The five key principles

In operations among the populace, it is vital that the force comply with the following five principles: impartiality, legibility, responsiveness, gradation, and reversibility.

⇒ Impartiality

The action of units must be legitimate, fair and impartial in the eyes of the populations concerned. This principle is difficult to actually apply and requires vigilance at all levels of command as opposing parties may seek support for their cause (through “directed” crowds), and will not hesitate to jeopardize the actions of the force. However, impartiality does not mean neutrality; the difference lying in the active and objective intention of the force to meet the terms of the assigned mandate.

⇒ Perception

Psychological factors are crucial for the sequencing of operations. The military commander must strive to establish a favorable psychological balance of power. Depending on the situation at a given time and on the sensitivity of the population, the commander can act simultaneously upon the following:

- the “language” of the uniform: the type of uniform worn by soldiers is often a clear signal to the population;
- equipment and weapons held or not, conspicuously displayed or not, which also display a posture, projecting determination or a desire to bring peace;
- the existence and display of intervention reserves (especially armored), which may serve as a warning;
- the choice of the force’s posture (passive, reactive or offensive) which makes it possible to maintain or regain the advantage;
- the distinction between less-lethal weapons and lethal weapons, which must be clear and obvious.

➔ Responsiveness

A force engaged in contact with a crowd must have intervention reserves to deal with sporadic and unexpected crowd movements. The ability to react instantly is crucial because of the volatile and unpredictable nature of crowds and because the first moments of confrontation are decisive.

➔ Gradation

More so than in other modes of action, operations among the populace require fine control of the use of force. This results in a variety of postures and measures allowing graduated use of force according to threat and limiting the risks of escalation, thus providing the tactical commander with greater freedom of action. As such, it may be wise to use less-than-lethal weapons, while retaining the use of lethal weapons as a last recourse.

➔ Reversibility

Linked to the previous principle, reversibility enables the force to maintain a self-protection and reaction capability from the outset. It takes the form of dispositions and equipment that ensure local superiority while allowing for sudden changes of attitude and subsequent returns to a lower level of tension as soon as possible. On the other hand, the use of lethal force must be envisaged whenever less-lethal weapons are used.

III. THE FOUR UNIVERSAL FUNCTIONS OF LAND MANEUVER

COMMAND – COMMAND SUPPORT – INTELLIGENCE – LOGISTICS

As shown in the chart of § 1.2.1, this proposed classification is a rough outline and the function-method association often results in a combination of the functions described below.

3.1. THE TWO INTERDEPENDENT FUNCTIONS OF COMMAND AND COMMAND SUPPORT

Command is a chain of decisions consisting of:

- giving orders, supposing they are prepared through a process of reflection and decision-making, and that are drafted and disseminated;
- controlling execution by monitoring and conducting the maneuver, in particular by coordinating the action of subordinate units between themselves;
- reorienting the force.

Command structures are based on a composition tailored to the operation or mission and on the organization of CP or HQ resources.

The military decision-making process (MDMP) includes all necessary steps between receiving the mission and issuing the orders needed to accomplish it. It is greatly speeded up and made more relevant through mastery of battlefield digitization.

The procedures aim to standardize and coordinate the activities and functioning of CPs and air-land force HQs at the different tactical levels, and to facilitate decision-making. Interoperability permits coalitions and facilitates coordination or integration of forces from different services and even nations in the context of multinational operations.

3.1.1. Command and command support functions in offensive operations

The offensive maneuver is characterized by mobile CP systems spread out on the ground allowing command to keep pace with the maneuver while ensuring permanence of command and reducing the risk of destruction by the adversary. It is widely agreed that level 1 staffs do not generally change location, but level 2 through 5 staffs must be able to relocate with a frequency and speed adapted to the level of command.

A change of location may be achieved:

- by deploying a “pioneer CP” as an advance party for a future CP; or
- through a system of two alternating CPs.

The latter option requires increased command and information system (CIS) assets to develop the architecture of the communications network (“area network” concept) at the pace imposed by the maneuver. These systems and the organization of the network must meet the requirements of simplicity, redundancy and modularity (switching from an “area network” pattern to a “non-linear” pattern).

This implies the need for security in the area where CIS assets operate. It also requires increased resources in headquarters support, since CPs are more numerous and scattered. The duration of CP stability considers a number of factors:

- the pace and the phasing of the maneuver;
- the duration of the MDMP required to conceive and draft an order for any considered phase of maneuver, including validation by the superior echelon;
- tactical and technical constraints related to the CP’s change of location.

3.1.2. Command and command support functions in defense

When the maneuver is defensive, the maneuver of CPs is similar to that in offensive maneuvers, but with greater emphasis on protection. Spreading out and phasing are essential to limit the risks posed by an adversary. As in offense, the stability of the PC takes into account:

- the pace and the phasing of the maneuver;
- the duration of the MDMP required to conceive and draft an order for any considered phase of maneuver, including validation by the superior echelon;
- tactical and technical constraints related to the CP's change of location.

3.1.3. Command and command support functions in security operations

Security operations are long-term and characterized in the command function by:

- high stability of the main CPs;
- often, the deployment of a “hard CP”;
- the drafting of an order of operation (OPOrder) whose timeframe may last the duration of the campaign, with adjustments and adaptations issued as the operation progresses (FRAGOs).

In this context, the functions related to the maneuver lose some of their priority. Command systems extend to all actors on the theater who must act within or in support of the force. CIS architecture can then become more complex, but this complexity should be maintained at a reasonable level so as not to inhibit command.

Security actions are characterized by single CPs without duplication. The structure is usually that of a main CP, with deployment assets (tactical CP or dedicated CP) for temporary action. This is generally less costly in terms of command support resources. The architecture of telecommunications networks is almost fixed. However, the information system needs within the main CP are more important due to the presence of environment functions.

A reduction in the number of CPs is often sought because it reduces the number of facilities requiring support and protection; thus reducing the volume of resources required for headquarters support.

3.1.4. Command and command support functions in urban areas

Urban areas are characterized by two key elements: infrastructure and population. Both are at stake in a conflict, to varying degrees. The population (except in cases of voluntary or provoked evacuation), is also a potential actor

for the tactical echelons. The urban area is thus a preferred space for the comprehensive maneuver. It requires both fine and strong action, where intelligence plays a key part as it integrates relations with the population.

Tactical actions are prepared in the greatest detail – rules of engagement (ROE) and identification procedures in particular – and are conducted in a decentralized but continually coordinated way. Permanent, all-directional monitoring must be ensured (including the vertical dimension from high to low) and an immediate and powerful centralized response capacity must be maintained.

Decentralization and coordination of missions are necessary because of the compartmented nature of the terrain, where orders and reports abound. They require that each level have an effective reference tactical situation, at least in terms of mapping and positioning of friendly entities.

For CPs, the maneuver is characterized by the following imperatives:

- for execution echelons, generally levels 4 and 5, deployment preferably within the urban area;
- for the higher echelon of maneuver design, deployment outside the urban area is recommended.

CP maneuver is simplified by the relatively low tempo of operations and by use of existing infrastructure. However, this may create new constraints for protection, especially in terms of resources. At level 5 and below, effort is focused on CIS assets suitable for the urban environment.

3.2. THE INTELLIGENCE FUNCTION

In principle, the intelligence function is part of the “orientation-collection-exploitation-dissemination” cycle which consists in providing the tactical command of the level in question with situational knowledge and understanding of the forces present and of the environment. Intelligence is directed according to the choice made on the efforts to employ. It consists in collecting information through the maneuver of the different sensors (tailored to the echelon where they are employed), and using them to support the tactical maneuver.

The intelligence function is integrated into the combined arms maneuver, and has the capacity to disseminate intelligence in real time (not limited to supplying objectives to combat support units).

Once directed, the intelligence function develops its collection maneuver which involves combining the employment of specialized and non-specialized sensors in time and space. It develops and disseminates responses to intelligence needs expressed by the tactical commander. Processed intelligence is then delivered to higher and lower echelons and to all HQ units.

Geography is accounted for in the MDMP as early as the planning phase. It provides the combined arms command with all the information needed to understand the land space in which the force operates.

Intelligence and geography are both indispensable to any operation. They are involved in land forces operations from the lowest tactical levels in order to achieve objectives safely.

3.2.1. The intelligence function in offense

The intelligence function focuses on one or several specific objectives. It requires decisive coordination and effort prior to every tactical action. It supports action by both identifying the adversary's disposition and anticipating their maneuver, and by providing timely situation and objective intelligence, making it possible to engage the adversary with the utmost understanding of the context.

Various types of intelligence capabilities are integrated into the disposition as early as possible. They include human assets (human intelligence without contact), collection through imagery (UAVs, satellites, etc.) or electronic warfare (interception of adverse frequencies and networks). These capabilities contribute to identifying the adversary's efforts and locating his means of command and logistics (C2 - logistics). Prior to the combined maneuver, the intelligence function helps locate the opponent's intelligence assets to facilitate their neutralization or destruction.

During the action, intelligence:

- contributes to surveillance of a flank or intervals if necessary to avoid surprise;
- facilitates protection actions of the lines of communication and means of support of our troops, especially when the layout is stretched;
- provides specific support to the use of indirect fire (direction, detection and target acquisition, damage assessment, etc.).

In the case of deception actions, intelligence assets – electronic warfare in particular – contribute to the action and help measure its effectiveness.

3.2.2. The intelligence function in defense

Knowledge of the environment and of the opponent makes it possible for the intelligence function to anticipate actions. During the defense phase, it:

- contributes to identifying the intent or concept of operation of the adversary (axis, area or domain of effort, organization, etc.);
- assesses potential enemy actions (courses of action in particular);
- participates in securing the deployment – static or dynamic – and monitors flanks and non-assigned areas.

All human or technical collection assets may be used during this phase. Human intelligence assets without contact (long-range reconnaissance patrols) are able to provide intelligence from the depth of the enemy disposition and thus evaluate its potential and maneuver as it advances.

3.2.3. The intelligence function in security operations

On the ground, specialized intelligence units provide all other components with deep and maintained knowledge of the area of military interest that induces a network of surveillance and permanent alert, and helps conduct sustained actions.

They also participate in the surveillance of non-assigned areas that are not covered by units, using imagery and electronic warfare.

In this type of operation, the intelligence effort is focused on the population, because beyond military targets, the enemy may have political, economic and cultural objectives and rely on mafia-style networks. Taking into account populations and the social and economic environment is a major challenge. Intelligence collection therefore requires substantial commitment and rigorous coordination of specialized or non-specialized human sensors within the comprehensive intelligence maneuver.

3.2.4. The intelligence function in urban areas

In urban areas, the infrastructure and population help mask the adversary and his plans. Monitoring and surveillance technical assets face a number of physical barriers due to the compartmented nature of urban areas; it is therefore necessary to emphasize multi-sensor maneuver (electronic warfare, imagery, radar). The vertical dimension is also a major advantage in this area.

The compartmented nature of the urban environment requires significant surveillance, reconnaissance and intelligence efforts by essentially non-specialized human sensors (contact units).

3.3. THE LOGISTICS FUNCTION

Logistics is always included in the tactical maneuver. Like the other functions, it is based on the principles of war. The establishment of initial self-sufficiency is consistent with the principle of freedom of action. Keeping adequate levels of resources on-theater also complies with the other principles of concentration of efforts and of economy of resources. This is achieved through control of the employment of resources and centralized management at operational level. For any dynamic maneuver, logistical effort is always applied before and after the effort phase. This means the logistical approach is rather different when considering offensive, defensive or security of operations.

3.3.1. The logistics function in offense

In the offense phase, a balance must be found between the stability vital for support operations, and maneuver in the form of permanent flows on lines of communication. A few principles should be kept in mind:

- prior to action, the initial autonomy for the units in charge of the main effort (in most cases, attack) is maximized;
- during action, the logistical effort focuses on the means of evacuation and replenishment of ammunition and fuel. If the range of operations increases, building logistical stocks with reserved means of deployment (airdrop, airlift) is a solution to cope with a possible disruption of lines of communication;
- before, during and after action, the logistical maneuver is similar to the CP maneuver as it also entails change of location or deployment of temporary dispositions.

3.3.2. The logistics function in defense

The defensive phase may be more favorable to stable logistical deployments. If the depth of a dynamic disposition is substantial, the effort for contact units will focus on ammunition supply and the building of an on-wheels stock according to the front relief principle. The priority of equipment evacuation is then

reserved for the resources that can be repaired within required time limits. Building small logistical points distributed in the depth may be considered but the protection of these points will then require particular attention in the planning phase and during action. In a more static maneuver, this effort will be extended to physical terrain organization assets.

3.3.3. The logistics function in security operations

Logistical support in security operations will essentially be decided by the force's organization (national support, location of the theater-entry logistical support unit and subordination). Area support and, as the case may be, outsourced/pooled support is generally put in place:

- the host nation may provide technical assets (transportation, repair), health assets (existing hospitals) and resources (POL, energy, food, etc.);
- the coalition lead nation may be assigned the support of the whole force in interoperable fields (essentially fuel, food, or specific transportation);
- the state of the maneuver network (quality, security, number of routes) also contributes to the quality of logistical support in all its forms.

Considering the design factors of operation range and accessibility of unit sectors, a number of logistical steps may be taken:

- efforts to centralize the various support chains;
- necessity to build stocks (on the ground and/or on wheels) to avoid constraints caused by just-in-time logistics flows and to be in a position to respond to any contingency;¹⁶
- use of local contracts and employment of resources with the agreement of the host nation;
- centralized concentration of a maximum of logistical resources available for the sake of responsiveness, reversibility and coherence with the required control;
- outsourcing certain functions;
- emphasis on the health and safety in operations function.

¹⁶ Ideally these stocks should be multiples of the target cycle of 96 hours, in accordance with NATO planning guidelines: AD 8070 (*allied directive*).

3.3.4. The logistics function in urban areas

The urban environment is always a complex one, and influences the employment and support of forces. In this context, logistical support consists in:

- finding the right balance between self-sufficiency for units that are often split up and difficult to access, and the necessary lightness of forward troops, which must retain flexibility of employment;
- maintaining a balance between the proximity of the logistical deployment with committed forces to ensure necessary responsiveness, and the protection of support units, which are more vulnerable, especially on the roads;
- taking into account the specific needs of the urban area in planning to adapt support to combat units, but also to possible emergency assistance to the population.

To this end, logistics must stick to a number of general principles that are indispensable for this particular type of support:

- **adaptability:** logistics deployments and their command systems must follow the same principles as in operations in open terrain (concept of TC1, TC2,¹⁷ temporary detachment, etc.). However, the local situation is sometimes quite unpredictable and the battalion task forces can experience actions of varying intensity. In this context, logistics detachments must be flexible and modular in their organization to adapt quickly to the maneuver and respond to the evolving situation;
- **lightness:** The physical features of the urban environment require light and mobile logistics assets (removal of trailers, no on-ground storage, use of the vertical dimension, etc.);
- **self-sufficiency:** the compartmentalization of the urban environment and the intermingling of present forces may cause a unit to be temporarily isolated. Detachments must have the capacity to endure, and especially to handle their wounded. The initial self-sufficiency of units and their proximity support must be increased for this reason;

¹⁷ Maintenance teams level 1 and 2.

- **protection:** logistical units are particularly vulnerable in urban areas, because they are less mobile and often less protected than contact units. They are a prime target for an opponent seeking easy success and who lacks supplies. Sustainable and permanent protection and safeguard solutions are needed.

The logistics modules of the land component may also be called upon to assist or temporarily replace local civilian authorities or NGOs. This is emergency support with a view to hand over to the authorities in charge of normalizing the situation as soon as possible. Planning must anticipate the employment of these logistical assets dedicated to these tasks that may sometimes be a priority, in addition to the means already devoted to the support of the force.

IV. LAND ENGAGEMENT WARFIGHTING FUNCTIONS

4.1. THE CONTACT (CLOSE COMBAT/MANEUVER) FUNCTION

4.1.1. Dismounted combat

➔ In offense

The employment of infantry-centric units must be privileged in accordance with weapon range when the terrain is cut and compartmented (mountains, forest, urban areas, etc.). This terrain is difficult to penetrate and is characterized by reduced intervisibility. A largely dismounted force may overcome the constraints related to the difficult environment. Depending on the size of compartments, it may be tasked with:

- the main action: infiltrate, attack flexibly and seize favorable areas; or
- a secondary action: reduce bypassed resistance and cover the main action.

The purpose is always to carry out combat action by acting principally against a well identified opponent and with a minimum of friendly losses. The success of these actions is linked both to quality of preparation and to more technologically advanced equipment than that of the adversary. It also depends on the capacity to make precise, powerful strikes, and on maneuver pace of execution, linked to the flexibility of unit task organization. Lastly, success is also achieved by judicious use of the full palette of support options available to the combined arms commander.

➔ In defense

On favorable terrain (mountainous or urban areas, etc.), the employment of infantry-centric units is preferred to stop, slow down or harass the enemy. In addition, thanks to their capacity to hold ground, infantry units are particularly able to carry out sustained actions, which often characterize defensive action. In more open terrain, they can be used in a secondary action to pin down the

adversary echelon not performing the main action. They thus ensure the freedom of action needed by the maneuver force. The success of these actions depends on their self-sufficiency in combat resources as well as in terms of command and combat or general support.

➤ In security operations

Infantry units are particularly apt to control the environment sustainedly and in the space of maneuver, whatever the nature of the terrain, weather conditions, or other constraints of the physical environment and the requirements related to population protection. The wide range – and thus complementarity – of their weapons and equipment gives them a certain degree of versatility and enables gradation of violence. Thanks to their force strength, infantry units can operate in permanent contact with populations or the adversary, making decentralized action possible. In this context, when there an appropriate armed response is needed, the specificity of infantry-centric units makes them most apt to carry out counter-insurgency operations. They are also able to provide local protection for the benefit of the force and of civilian actors responsible for conflict resolution, as well as extended protection to restrict insurgency freedom of action. When long-term stability is achieved, these missions cease to be specific to infantry-centric units.

➤ In urban areas

Infantry units are preferably engaged in densely populated areas, and are generally organized in company teams with armor, engineering and heavy mortar reinforcements. They maintain a permanent presence in the assigned sectors and have a combined arms mix down to the lowest echelons. They perform all offensive and defensive missions adapted to the compartmented space where they are committed. Infantry units can generally conduct reconnaissance and clear certain pockets of resistance, and occupy and hold designated key points over time.

4.1.2. Mounted combat

Mounted combat units are centered on armor. In coercive commitments of any level, they are involved in the freedom of action of the combined arms commander (responsiveness and reversibility) and enable decisive actions (fire accuracy and power, environment control alongside dismounted combat, collateral damage control and psychological impact on the adversary).

➔ In offense

Employment of “mounted combat” function units is preferred when the action requires movement, speed, power, depth and/or surprise. Acting ahead of and/or on the flanks of the formation, armor units can collect intelligence by fire or by observation. They are particularly apt for counter-reconnaissance. Once intelligence is acquired, armor units alone, thanks to their power and their protection, are powerful enough to disrupt a strong adverse disposition by breaking through it. To this end, they then use maximum mobility to outflank, bypass or fight meeting engagements. They can exploit existing or created weaknesses and gaps in the enemy disposition to reach vital centers or key points, allowing them to disrupt the adverse disposition in the depth. In action, armor units can locally reverse relative combat power by counterattacks or support infantry units by powerful, accurate direct fires. Being mobile, they contribute to protecting the force in disposition gaps and the rear.

➔ In defense

Prior to the action of a major formation, priority is given to engaging armor units in counter-reconnaissance. During the main effort phase, their preferred course of action is counterattack against enemy units. They can act as a formation reserve unit or as a trap for the opposing main echelon. As in offense, armor units contribute to protecting the force in disposition gaps and the rear.

➔ In security operations

In the context of stabilization, armor units control wide areas in which they provide constant environment and contact intelligence. Their action covers the whole engagement zone and they ensure freedom of movement on the roads; they can intervene quickly and powerfully anywhere in the zone. In counter-insurgency, armor units can be a reserve element and provide direct combat support to infantry units on compartmented terrain, especially in cordon actions. They may be responsible for the main action in desert or semi-desert environments.

➔ In urban areas

In addition to a specific support effect provided by their accurate direct fire, armor units provide day and night detection capabilities and protection thanks to their armor. They are generally used in the outskirts of towns or in relatively

open areas and in the enfilade of roads, where they can deploy all their observation, fire and mobility capacities. Wherever possible, armor task forces and company teams are reinforced with infantry and engineering units that prepare, support and prolong their actions. In some cases (in wide streets) and under certain conditions (prior intelligence, air guidance by UAVs, etc.) they can conduct powerful armor raids that disrupt the enemy organization in the depth or help to seize key points.

4.1.3. Aviation combat

Whatever the tactical course of action, the employment of helicopter units is only possible in close coordination and combination with the other two contact function components.

➔ In offense

The employment of aviation units is characterized by flexible action in an environment favorable to the major features of helicopters (speed, range and accuracy). These units operate in formations as pawns of maneuver. Their action aims either to outpace the adversary to pin down and enclose him, or to disrupt his organization in the depth by judicious destruction of major objectives. This action facilitates capture of key points by combining speed of maneuver and ability to deliver powerful, accurate fire.

➔ In defense

As in offensive actions, the employment of aviation units is characterized by flexible action in an environment favoring the major features of helicopters (speed, mobility and range). Integrated in the land maneuver, their action aims to outpace, contain and weaken the adversary through a succession of partial destructions. It also makes it possible to disrupt the enemy disposition in the depth by acting against the second echelon or logistics.

➔ In security operations

Under certain conditions, the aviation combat component can control and monitor an area. It provides information and intervenes with helicopters over a wide area, and can carry one or more company teams. This is particularly true in non-assigned areas.

➔ In urban areas

With its invaluable “all-weather” capacity, the aviation combat component is an element of reaction that can execute vertical assault, support troops in contact, deliver fires, provide intelligence and transport emergency logistics. Its effectiveness requires real-time monitoring of the situation, the identification of friendly troops, and appropriate procedures. Although actions launched from town outskirts are most frequent, aviation units are also trained to intervene over urban areas.

4.2. THE COMBAT SUPPORT FUNCTION

4.2.1. Indirect fires

Indirect fires contribute in all circumstances to achieving the combined arms commander’s objectives. They:

- provide constant information on the enemy and environment;
- from the installation of friendly forces, participate in protection measures by posing a permanent threat to the potential adversary through appropriate deployments;
- in combat actions, primarily by contributing to fire superiority:
 - provide combat support to maneuver forces, especially outside the area covered by direct fire weapons in order to create or restore favorable relative combat power in the area;
 - attack the adversary in the tactical depth and intervals by fire actions related to the commitment of contact forces, or, if necessary, by destruction/neutralization separate from contact actions;
- contribute to joint action in the operational depth (intelligence and fires).

The priority accorded to these different missions is often decided by the commander of the highest tactical level, depending on the nature of the commitment, on the moment, and on the fire assets available.

The employment of indirect fires is up to the tactical commander, during planning and sometimes conduct.

➔ In offense

Indirect fires contribute to:

- providing direct support to all contact units by preparing and supporting reconnaissance and attacks;
- fire superiority by neutralizing opposing bases of fire (anti-tank and artillery);
- in the depth, enclosing and disrupting the opposing disposition;
- depending on the situation, coverage and/or flank-guard.

➔ In defense

They:

- provide direct support to units in contact by taking apart the opposing attack echelon (tanks/infantry fighting vehicle);
- maintain or achieve fire superiority (anti-tank fire base and artillery);
- neutralize reserve assets and CPs;
- support dynamic defense actions (delaying maneuvers) and facilitate the relief of units (destruction/neutralization, blinding, illumination, warning shots).

➔ In security operations

Their role involves direct combat support to units committed in counter-insurgency.

➔ In urban areas

Given liaison difficulties and reduced observation ranges, employment of artillery requires even closer coordination with supported units than in open areas. The risk of collateral damage requires total control of fire effects, including side effects (fire, ricochets, stagnant smoke). Because of the density of the fires, their safety requires controlling trajectories in the context of vertical coordination, and the use of high-trajectory fire should be preferred. The employment of mortars and Guided Multiple Launch Rocket Systems is preferred in town and city centers, while artillery guns are more used in approach and peripheral areas. Because of observation difficulties, use of intelligence function acquisition assets is often necessary.

4.2.2. Engineers

Engineers are involved in achieving the combined arms commander's objective in all circumstances. They:

- contribute to providing information on the environment;
- support force deployment;
- contribute to safeguard and protection;
- support close combat through mobility and counter-mobility support, and by implementing specific assault processes and assets.

The priority given to one or the other of the missions is determined by the commander of the highest tactical level, based on the operations to conduct, the timeframe, coordination needs and available engineering resources.

➔ In offense

In offense, engineer support to combined arms units includes mobility support (opening of routes, dry/wet gap crossing, minefield breaching, mine clearance on routes) and missions involving participation in close combat (capturing key points and preparing combat posts, etc.). Secondary missions include counter-mobility support barrier detachment, construction of obstacles to provide coverage) and of emergency deployment support, including mine clearance or explosive ordnance disposal (EOD).

➔ In defense

Engineering support is fundamental and involves counter-mobility support (construction of *ad hoc* obstacles or planned obstacle systems, barrier detachment) and of emergency deployment support (protection works and shooting positions). In mobile defense, mobility support operations may be carried out. Whatever the defensive mission, significant time may be needed for the creation of obstacles.

➔ In security operations

Engineer combat support means participation in contact actions (support fighting improvised explosive devices or IEDs, operational search, and crowd control), in mobility support (maintenance of routes) and in emergency deployment support (protection works, checkpoints and shooting positions, local mine

clearance and EOD). In this type of operations, the effort focuses on deployment support tasks and sometimes stationing support. The engineering contribution to civil-military operations is crucial. The full spectrum of engineer capabilities is best used in this type of operations, especially for construction and infrastructure.

➔ In urban areas

The urban environment is easily improved by the different parties present. It results in the construction of obstacles and strong points, in reopening roads, and in creating vertical and horizontal pathways across buildings. Particular attention should be paid to security intelligence, with the participation of specialized services (water, gas, electricity, etc.).

4.2.3. Air defense (AD)

Surface-to-air defense is always within the general scope of air defense, in international or at least interservice coordination, with air forces at a minimum. Complementarity with medium-range systems is vital. Without links with airspace control organizations, it can be used in self-defense.

AD action must always be additional to passive defense and anti-air warfare (AAW) measures. It contributes to sounding the alert.

➔ In offense

The action of very short range AD assets can only be local and aimed at ensuring fixed defense of essential and vulnerable elements (CPs, logistical deployments, crossing points, etc.). The support of units in action can also be considered, but must be limited to self-defense.

➔ In defense

For above reasons, only the most vulnerable points, areas or deployments will have specific surface-to-air defense.

➔ In security operations

Although lesser than in other types of operations, the threat still exists. Very vulnerable sites of high military or symbolic value must be a priority for surface-to-air defense measures. Its deployment has a deterrent effect.

➔ In urban areas

Vulnerable points, especially those in the axis of an air corridor, require specific AD measures.

4.2.4. Electronic warfare (EW)

Electronic warfare is an operational support function. It focuses on systems using the propagation of electromagnetic radiation. It is most effective as part of the maneuver and when integrated into the multi-sensor intelligence maneuver. Electronic warfare support covers three courses of action:

- electronic attack uses electromagnetic radiation for offense by disrupting enemy communications and contributing to deception actions (unperformed capability: destruction of electronic systems);
- electronic defense aims to guarantee freedom of action in the use of friendly communication systems by technical measures or advice to users;
- electronic surveillance provides information on the tactical situation (intelligence of immediate interest, alert and environment intelligence) and collects information for intelligence purposes. The exploitation of electromagnetic radiation makes it possible extract information for the conduct of the maneuver.

These three capabilities may or may not be employed simultaneously. The electronic environment varies depending on conflict type, but three courses of action remain.

➔ In offense

The nature of EW activities requires that its elements be deployed forward, almost in contact in the event of a linear conflict or even at the heart of the organization in an asymmetric conflict in order to provide continuous support. Electronic surveillance can provide information about the enemy disposition and intent and evaluate its intelligence potential. Electronic attack causes indecision, confusion or premature action on the part of the adversary.

➤ In defense

EW is used in defense for neutralizing actions, “blocking” adverse electromagnetic waves – e.g. triggering radio-controlled IEDs (RCIEDs) or jamming enemy communications – and electronic surveillance, determining enemy positions and intent.

➤ In security operations

EW focuses on research to support missions such as patrol, recognition, searching for individuals, and crisis monitoring. Electronic attack activities can be considered for force protection. Communications control and deception can be employed in counter-insurgency. Electronic defense can be used to defend fixed sites such as forward operating bases (FOBs).

4.3. THE MANEUVER ENHANCEMENT FUNCTION

4.3.1. Movement support

The missions of movement support units are organized around three main types of functions: intelligence, movement support (general and direct) and protection.

➤ In offense

- support concentration, and force deployment or redeployment movements;
- support installation movements on a line of departure or of relief by forward passage of lines;
- support gap- or obstacle-crossing in cooperation with engineers;
- install a line of control;
- facilitate pre-commitment reorganization of units;
- supply information to command and maneuver network users on route possibilities and trafficability;
- supply information on enemy activities, in particular in non-assigned areas;

- participate in assembly and evacuation of non-combatants and refugees;
- participate in assembly and movement of prisoners.

➔ In defense

- support relief movements (rearward passage of lines, in position or by forward passage of lines);
- support gap - or obstacle - crossing in cooperation with engineers;
- route surveillance;
- contain and regulate population movements.

➔ In security operations

- participate in area control;
- supply information to command and maneuver network users on possible routes and the general attitude of the population;
- participate in security and surveillance of logistical routes;
- participate in assembly and evacuation of non-combatants and refugees;
- escort logistical convoys and special movements (VIPs, etc.);
- participate in force and population protection by denying access to polluted, contaminated or mined areas.

➔ In urban areas

- participate in security of logistical routes;
- escort logistical convoys;
- supply information to command and users on route trafficability;
- participate in force and population protection by denying access to polluted, contaminated or mined areas;
- contain and guide population flows where needed.

4.3.2. Mobility support to armored units

The purpose of units supporting armored unit mobility is to transport armor/mechanized units and their environment over significant distances at high speed in order to preserve human and material potential.

The main goal is to obtain locally favorable relative combat power rapidly. These supporting units make it possible for the combined arms commander to switch breakthrough and fire support assets, thus contributing to surprise.

Today, these units can also play a major role in the maneuver of evacuating damaged equipment and in delivering complete equipment from maintenance.

4.3.3. CBRN

In offense, defense and security, the deployed Army units act, in accordance with the principles of CBRN defense, in three areas:

- prevention of force readiness reduction;
- management of CBRN event consequences;
- restoration of the force's operational capacity.

CBRN defense relies on the following components:

- detection, sampling, identification and control, reconnaissance and surveillance;
- alerts and reports;
- physical protection (individual and collective protection);
- CBRN risk management (modeling, risk and threat assessment, contamination and exposure control, decontamination, etc.).

Threats posed by State or terrorist action, industry and technology must be taken into account, regardless of the chosen or imposed type of commitment. Whilst the analysis of such risks and threats is performed during the planning of any operation, it must be continuously reassessed on the basis of information and intelligence acquired by the forces at every moment. Protection and safeguard measures are adapted accordingly. They may influence the maneuver and course of action.

4.4. THE “SHAPING PERCEPTIONS AND THE OPERATIONAL ENVIRONMENT” FUNCTION¹⁸

The armed forces interact with their environment. They wage war in the midst of populations that have become both essential actors and stakes. The importance of information in today's world is also fundamental. To address this concern, land forces execute information operations (IO) which, within headquarters, coordinate:

- information actions (counter-command, information protection and influence actions);
- communication actions;
- civil-military cooperation (CIMIC) actions;
- indirect actions.

In this context, only influence, communication and CIMIC actions represent the tactical dimension of IOs. They aim to guide the perceptions and attitudes of individuals and of groups to see the missions of the force positively. They:

- reduce the adversary's willingness and ability to comprehend;
- limit enemy action capacity;
- persuade actors involved to change behaviors and support our objectives.

The implementation of these operations at tactical level is achieved through the activation of the three contributing warfighting functions, which they coordinate:

- military influence operations;
- CIMIC actions.

4.4.1. In offense

In this type of operations, actions upon perceptions and environment have more to do with the strategic and operational levels than with the tactical one. The tactical commander's major effect primarily relies on the physical fields in

¹⁸ For the sake of simplicity, the expression “information operations” will be used.

a dynamic maneuver unfavorable to sustained actions. Of the three contributing warfighting functions, operational/strategic communication will be most used in offense.

4.4.2. In defense

Better adapted to sustained actions, the application of the major effect on the terrain and on an identified opponent remains a priority, which limits the relevance of environment actions. However, these actions, with their three tactical dimensions (military influence operations, operational/strategic communication, and CIMIC) can effectively complement defense, provided they have been initiated and developed prior to the defensive phase, for example in a security phase.

4.4.3. In security operations

Stabilization aims to create a stable and secure environment, primarily for the benefit of local civilian populations, which is why environment actions become a major component of the maneuver in security operations.

While acting in a much widened and often interagency context, land forces must identify the specific needs to be met in emergency conditions and in the long term, in the place of or in addition to dedicated organizations: emergency humanitarian assistance, infrastructure repair, participation in public security, reconstruction of security systems (armed forces, police, etc.).

CIMIC plays a key role in this context, potentially including emergency humanitarian assistance, infrastructure repair, and coordination with NGOs, whilst military influence operations (support from the population, winning over neutral elements, isolation of adversaries, etc.) and operational/strategic communication (public opinion) contribute to the consolidating the force's foothold in its environment and countering enemy propaganda.

V. SPECIFIC AND EMERGING ASPECTS OF CURRENT COMMITMENTS

5.1. FIRE SUPPORT COORDINATION AT LOWER TACTICAL LEVELS

Fire support is at the heart of maneuver unit combat. Its diversity and complexity require execution by true, trained specialists in their use, who are also experts in air-land maneuver.

In order to provide the combined arms commander with a single contact for the delivery of fires to support the maneuver, these specialists are grouped within a single entity: the Fire Support Team, commanded by the Fire Support Coordinator.

The Fire Support Coordinator coordinates fire support on the ground and in the vertical dimension from the conception of their maneuver, optimally employing a variety of specific and complementary tactical effects.

The Fire Support Team is not restricted to use of field artillery, but also handles any type of combined arms, joint, and interallied fire support.

5.1.1. Tactical effects of fire support

The integration of fire support in the land maneuver aims to deliver to the right place at the right time the best fire support to achieve the desired tactical effect. More specifically, the purpose is to:

- prepare combined arms action;
- support combined arms action through warning actions, neutralization, destruction, blinding and illumination;
- participate in covering the main combined arms action;
- contain adverse units and assets (action on enemy maneuver capabilities);

- disrupt (in particular through action on enemy logistics and command structures);
- participate in exploitation;
- provide intelligence.

5.1.2. The different types of fire support

➤ Mortar fire support

This is the preferred type of fire support in a battalion task force. It has a range of 1,100-8,000m. It allows high-trajectory shots which overcome obstacles, and is particularly suited to compartmented areas (mountainous or urban). Its light weight provides great mobility and excellent responsiveness to the rhythm of the combined arms maneuver.

➤ Field artillery fire support

The artillery gun weapon system is used and implemented at brigade-level in direct support to the battalion task force and to the overall action of the brigade. It is mobile, has a maximum range of 40km, and offers greater accuracy and power than the mortar. It can provide permanent fire over a large area.

➤ Rocket launcher fire support

The GMLRS provides a significant advantage in urban and non-assigned areas. Its accuracy – to within a few meters – and trajectory offer remarkable collateral damage limitation. In non-assigned areas, the major advantage of the GMLRS is its reach (70km) which ensures safe deployment and thus some stability. Within a few minutes, the application point of a fire effort can be moved dozens of kilometers without moving the launcher.

➤ Close Air Support (CAS)

CAS is provided by ground attack aircraft that can carry guns, missiles and guided or free-fall bombs. Air support is characterized by its power, accuracy (laser-guided bombs) and significant psychological impact. CAS can cover the entire theater, and its missions are always under the responsibility of a Forward Air Controller (FAC).

➔ Close Combat Attack (CCA)

Apart from aviation combat integrated in contact commitment, the ability of helicopters to deliver precise and powerful fires and respond quickly over large distances provides flexible fire support capability. As CCA or even CAS assets, attack helicopters offer versatile fire capacities (of 20 and 30mm rounds, 68mm rockets, HOT and Hellfire missiles) very close to contact. Their psychological impact is very significant and often decisive.

Helicopters are able to pursue and to engage an opponent, even beyond the view of land elements.

➔ Naval fire support

The 100mm gun enables French Navy ships to contribute to inland support fire in coastal areas.¹⁹ Its practical range is about 14km.

5.2. THE USE OF UAVs (DRONES)

UAV systems have become an essential component of air-land operations and technological developments have increased their range and employment options. Able to carry a variety of payloads including imagery, EW, laser designators, SIGINT, and in some cases weapons, they are increasingly versatile and modular.

Their employment, initially reserved for the higher levels, has become more generalized down to the lower tactical levels, to which they are also indispensable. The growing place of drones in the air-land maneuver stems from the inherent capacities that they have by design:

- reliable, precise day-and-night information-gathering capacity, and ability to visualize the physical environment beyond direct sight, crossing obstacles;
- capacity to extend range and self-sufficiency in flight, allowing real-time detection or even identification of the enemy disposition, nature, and movements, before, during and after commitment;

¹⁹ The naval cruise missile is considered not a fire support asset but a way to strike in the depth.

- capacity to carry out surveillance of non-assigned areas to detect threats and cover units engaged in the main action, avoiding surprise;
- capacity for action over hostile areas and to preserve human resources in burdensome or dangerous missions, including by deception actions, which could for example consist in flying a UAV over a different area from that where action is intended.

UAV support is provided through a broad range of missions. Depending on the circumstances, these missions put the stress on particular forms of support. In many cases however, a single mission may include several forms of support.

UAV systems are operated as part of a multi-sensor maneuver. Observation by drones is combined with radar detection, ground observation by land units, eavesdropping through electromagnetic search assets, sources processing by HUMINT units, and by any other combined arms, joint or interallied air assets.

To be efficient, this information collection maneuver must be conducted and controlled by the command team of the supported tactical unit. Tactical drone systems are therefore placed under the tactical control of tactical units during the commitment, in order to:

- adapt quickly to the command's changing tactical intelligence requirements. Depending on the level of employment, the response time required of UAVs may extend from a few minutes to an hour;
- process collected images as close as possible to command so as to supply information immediately and direct other collection means without delay;
- control the influence of UAV flights on different actors.

5.3. FORWARD POSTS AND BASES

In today's ground operations of stabilization, counter-insurgency is among the most complex types of operations. The terrain and population are controlled by the effective presence of forces. By contrast, any territory where land forces are absent is considered a non-assigned area and can serve as a refuge for irregular adversaries.

The choice is often made to install forward posts and bases, even if protecting them requires permanent personnel. Although these tactical assets are static, they often allow units to rely on a secure site from which to plan and prepare

operations. In their own way, they help preserve the commander's freedom of action and therefore his ability to maintain a certain degree of initiative. Insofar as is possible, a network of forward bases and outposts in mutual support and set along multiple lines of defense provides optimal coherence in the organization of area of operations protection.

During counter-insurgency operations, forward posts and bases can participate in limiting the mobility of irregular adversaries in the vicinity by fostering a sense of insecurity among them. They also contribute to the security of the local population who may, if necessary, take refuge there.²⁰ Their relevance is proven where the adversary lacks sophisticated military organization or credible weapons systems that delivering indirect fires.

5.4. COMBATING IEDs

Forces engaged in operations increasingly face the specific threats of asymmetric warfare. In this context, opposing forces use IEDs to establish and maintain a climate of constant insecurity, especially during stabilization and normalization phases.

The threat posed by IEDs is difficult to grasp and address. The force must therefore take adequate measures to protect itself, seeking complementarity between available capacities and coordination of actions.

Fighting IEDs requires taking into account the intensity of the threat, as well as the opportunities offered by the theater and the force's mandate. It involves sustained intelligence action and relies on combining offensive and defensive actions – conventional military operations – and police and special operations.

5.4.1. In offense

Offensive action by forces aims to:

- deter the adversary from using IEDs (action on the adversary's will);
- reduce the adversary's planning and attack capacities (action on human, material and nonmaterial resources);
- limit exploitation of successful attacks (action on effects).

²⁰ It should be kept in mind, however, that the proliferation of isolated outposts or even the fragmentation of units over too many positions is always counter-productive.

These actions are most effective ahead of attack and offer an opportunity to take the initiative over the adversary. They are more focused on the chain of execution (network in the broad sense) than on IEDs themselves. They branch out with scientific or even forensic analysis of execution sites, searching for clues to identify, track or hunt down IED bombers.

At best, offensive operations identify and neutralize or destroy the networks employing IEDs, and they at least reduce the intensity of the threat the devices present. They also contribute to protecting civilian populations and persuading them of the legitimacy of the force's action.

Offensive actions are executed:

- partially, with preference given to indirect approach of the adversary, on all theaters where the IED threat level is low;
- gradually, directing the effort simultaneously on all or part of the enemy chain of execution on theaters where the IED threat level is high, or even omnipresent.

5.4.2. In defense

Counter-IED defensive actions aim to:

- stop the adversary placing IEDs near or within the force's facilities or sites under its responsibility;
- achieve the same objective, or otherwise reduce the threat on routes used or controlled by the force, by preventing triggering;
- render inoperable IED attacks which cannot be detected early enough;
- reduce the direct or indirect damage of these attacks;
- protect personnel as they travel, using electromagnetic self-protection capabilities to prevent triggering.

These actions are executed:

- on all theaters of commitment as part of the minimum security posture against IEDs;
- gradually on theaters where the IED threat level is low;
- in the most complete way possible on theaters where the IED threat level is high or very high.

5.5. CONVOY PROTECTION

Lessons learned from recent conflicts (Côte d'Ivoire, Iraq, Lebanon, Afghanistan) show that convoys are by nature very vulnerable, regardless of whether they come from a logistical support unit or a combined arms battalion task force. This is particularly true when carrying dangerous goods (munitions, fuel). They must be reinforced for protection.

The logistical convoy (combined arms, joint, perhaps including civilian vehicles) is the type of convoy needing most protection because:

- its partial or total destruction reduces or even eliminates the supported force's ability to combat, as it is deprived of supplies. This has a major psychological impact that also affects the morale of friendly troops;
- it is a source of supplies for the adversary (munitions, fuel and food) as well as for populations.

It has the following vulnerabilities:

- it has limited internal protection and self-defense capabilities;
- It is often linked to an identifiable route and is difficult to maneuver (few or no alternative routes, actions in urban areas, ill-suited assembly or stationing areas, etc.);
- its mass, length and pace, depending on terrain constraints give the adversary constant opportunities for attack, giving the convoy a disadvantage.

The success of a convoy operation depends on compliance with certain principles. The multinational nature of operations and hardening of conflicts make these operations more complex to execute. Two key points emerge to ensure success:

- meticulous planning, taking into account all tactical and logistical constraints, on-theater and at the time in question;
- once the mission begins, particularly fine conduct is required (especially in terms of coordination), in order to allow all available assets to best respond.

CONCLUSION

“The art of war is a simple art and all in the execution.” This well-known statement by Napoleon is an ambiguous doctrinal heritage. The times of long, massive tactical movements, conducted by the sergeant-major’s baton in step with marching infantry, with drums and trumpets doubling tempo on contact, are long behind us.

Of course, even today, the tactical commander must give easily executed orders in order to conduct a maneuver that is easily understood by subordinates. But the combined arms aspect of the ground maneuver is now vital, from platoon and company levels. It is complex to harmonize different war-fighting functions, whatever the level. The tactical actors of these functions must intertwine their respective actions and go beyond simple coordination. CP and staff work is increasingly dense, despite digitization, as ground forces have an impressive, complementary collection of individual and collective skills, capabilities and equipment, types of armament and munitions. The synergy of these assets and combat capabilities must be thought out and prepared ahead of missions, and then carried out in action whatever happens during combat.

Of course, the combined arms maneuver almost always forms part of a joint context. Land forces draw great benefit from this context, especially in terms of strategic, and sometimes tactical, mobility; intelligence; fire support; general support; logistics; and influence actions. However, control of the combined arms dimension of combat is a fundamental prerequisite for land forces in the joint dimension of contemporary commitments.

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