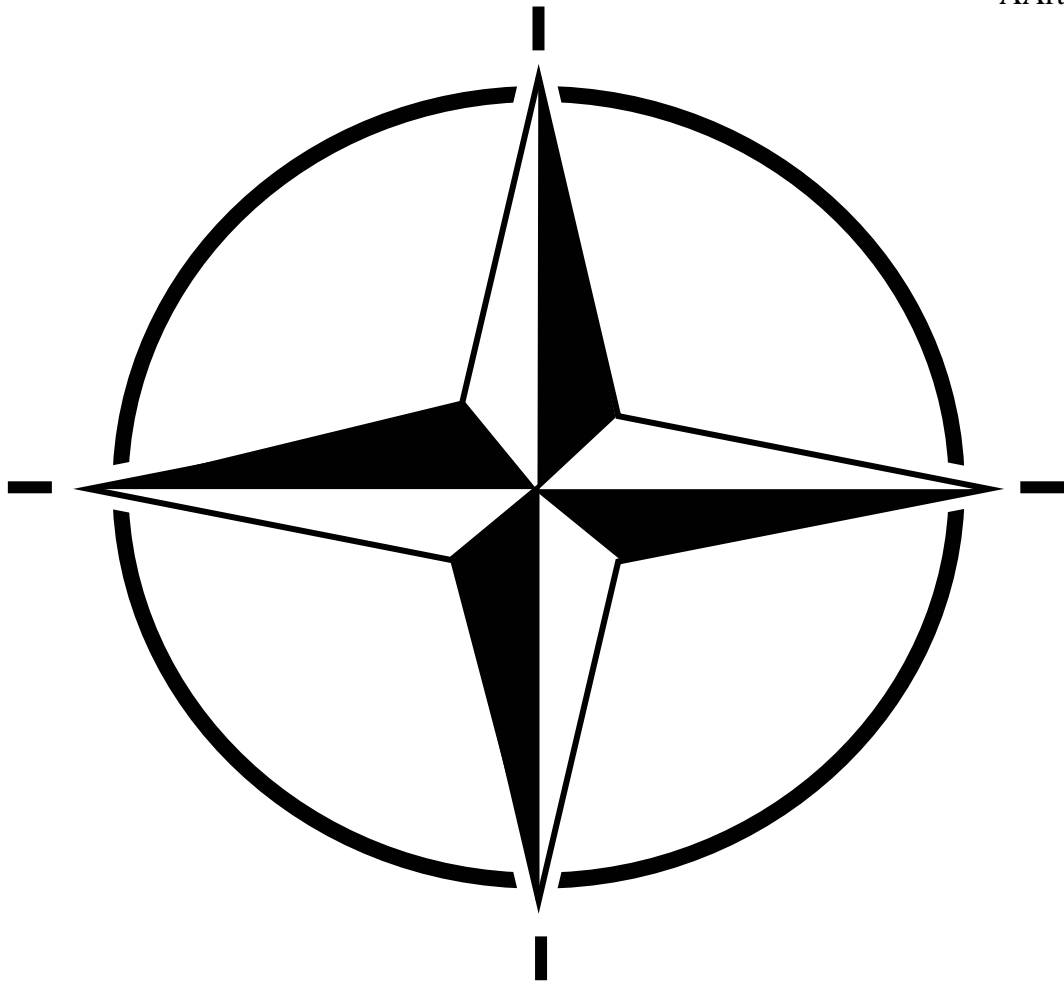


**NATO INDIRECT FIRE SYSTEMS  
TACTICAL DOCTRINE**

**AArtyP-5(A)**

**(INTENTIONALLY BLANK)**



**NATO INDIRECT FIRE SYSTEMS  
TACTICAL DOCTRINE**

**AArtyP-5(A)**

**NOVEMBER 2010**

(INTENTIONALLY BLANK)

**NORTH ATLANTIC TREATY ORGANIZATION**  
**NATO STANDARDIZATION AGENCY (NSA)**  
**NATO LETTER OF PROMULGATION**

25 November 2010

1. AArtyP-5(A) - NATO INDIRECT FIRE SYSTEMS TACTICAL DOCTRINE is a NATO UNCLASSIFIED publication. The agreement of nations to use this publication is recorded in STANAG 2484.
2. AArtyP-5(A) is effective on receipt. It supercedes AArtyP-5, which shall be destroyed in accordance with the local procedure for the destruction of documents.



Cihangir AKSIT/TUR Civ  
Director, NATO Standardization Agency

(INTENTIONALLY BLANK)

**RESERVED FOR NATIONAL LETTER OF PROMULGATION**

(INTENTIONALLY BLANK)



**RECORD OF RESERVATIONS**

<b>CHAPTER</b>	<b>RECORD OF RESERVATION BY NATIONS</b>
General	ITA

(INTENTIONALLY BLANK)

**RECORD OF SPECIFIC RESERVATIONS**

[nation]	[detail of reservation]
ITA	In accordance to national law, Italy will not use any device which may be classified as antipersonnel mine according to the following definition "An antipersonnel mine is defined as a device which may be placed above, under, inside or next to any surface and adjusted or adapted with specific measures in order to explode, cause an explosion or release incapacitating substances as the result of the presence, the proximity or contact by a person". Moreover, considering military activities in a multinational scenario, cooperation of the Italian Armed Forces also with no signatory Nations of the Ottawa Convention is permitted, with the proviso that activities by Italian servicemen be compatible to the Ottawa regulations.

**RECORD OF CHANGES**

<b>Change Date</b>	<b>Date Entered</b>	<b>Effective Date</b>	<b>By Whom Entered</b>

## **PREFACE**

The successful planning and execution of military operations requires a clearly understood and widely accepted doctrine, especially when these operations are conducted by NATO or multinational forces.

This publication sets out fundamental doctrine for fire support and effects. It expands the application of fire support and effects as well as the role of field artillery commanders within the context of AJP-3.2 (STANAG 2288) “Allied Joint Doctrine for Land Operations”, ATP 3.2 (STANAG 2241) “Land Operations” and ATP 3.2.1 (STANAG 2605) “Allied Land Tactics”.

Due to the latest developments of NATO STANAG’s and AP’s statements which are contained in these will not be repeated in this AArtyP-5 (STANAG 2484). Therefore, statements which were contained in an earlier version of AArtyP-5 (STANAG 2484) (Edition 1) and which are now contained in others were taken out to prevent duplication and to minimize the size of AArtyP-5 (STANAG 2484).

This publication is the doctrinal application of integrated fire support and effects in particular field artillery, whereas AArtyP-1 (STANAG 2934) addresses Field Artillery Procedures and AArtyP-3 (STANAG 2432) addresses Field Artillery Procedures using automated data processing systems.

Other STANAG’s/AP’s may contribute to this publication on specific aspects of fire support integration to include:

STANAG 1034/ATP-04	Allied Naval Gunfire Support.
STANAG 1149/ATP-08	Doctrine for Amphibious Operations.
STANAG 3700/AJP-3.3	Joint Air and Space Operations – Doctrine.
STANAG 3736/AJP-3.3.2	Air Interdiction and Close Air Support.
STANAG 2999/ATP-49	Use of Helicopters in Land Operations - Doctrine.

This publication offers the artillery commander and his staff a conceptual framework and a “common language” for the planning and execution of fire support within his concept of operations. It is not the intention that AArtyP-5 (STANAG 2484) should restrict the authority of the maneuver commander. He is expected to organize the forces assigned to him and to plan and execute operations in a manner he deems appropriate to ensure unity of effort in the accomplishment of his mission. With the artillery commander, his staff and the availability of an existing artillery network he has also a specialist to integrate the fire support provided by other services (e.g. air and maritime components).

**TABLE OF CONTENTS**

**CHAPTER 1 – GENERAL INTRODUCTION**

**SECTION I – INTRODUCTION**

101 General.....15  
102 Aim of AArtyP-5 (A) .....15  
103 Scope of AArtyP-5 (A) .....15

**SECTION II – JOINT FIRE SUPPORT (JFS) AND EFFECTS**

104 Joint Fire Support (JFS) and Effects ..... 15

**SECTION III – ALLIED JOINT DOCTRINE FOR LAND OPERATIONS (AJP 3.2)**

105 Allied Joint Doctrine for Land Operations (AJP 3.2) ..... 15

**CHAPTER 2 – TASKS OF INDIRECT FIRE SYSTEMS**

**SECTION I – INTRODUCTION**

201 Aim ..... 16

**SECTION II – CHARACTERISTICS OF INDIRECT FIRE SYSTEMS**

202 IFS (System of Systems) ..... 16

**SECTION III – ROLE AND PURPOSE OF INDIRECT FIRE SYSTEMS**

203 The role of IFS. .... 16

**SECTION IV – GENERAL TASKS OF INDIRECT FIRE SYSTEMS**

204 Tasks of IFS. .... 17

**CHAPTER 3 – FIRE SUPPORT CAPABILITIES**

**SECTION I – INTRODUCTION**

301 Aim. .... 18

**SECTION II – SURVEILLANCE TARGET ACQUISITION CAPABILITIES**

302 IFS STA Systems. .... 18

**SECTION III – LAND-BASED INDIRECT FIRE SYSTEMS CAPABILITIES**

303	Land-based IFS .....	18
	a. Mortar.....	19
	b. Tube artillery.....	19
	c. Rocket/Missile artillery.....	19

**SECTION IV – AIR-BASED INDIRECT FIRE SYSTEMS CAPABILITIES**

304	Fixed Wing.....	19
305	Rotary Wing.....	19
306	Combat Unmanned Aerial Vehicle (C UAV) / Weaponized/Armed UAV.....	19
307	Control of the air missions.....	19

**SECTION V – SEA-BASED INDIRECT FIRE SYSTEMS CAPABILITIES**

308	Sea-based IFS capabilities.....	20
-----	---------------------------------	----

**SECTION VI – AMMUNITION CAPABILITIES**

309	Ammunition capabilities.....	20
	a. Unguided munitions.....	20
	b. Precision guided munitions.....	20

**CHAPTER 4 – FIRES AND EFFECTS PLANNING, COORDINATION AND SYNCHRONIZATION**

**SECTION I – INTRODUCTION**

401	Aim.....	21
402	General.....	21

**SECTION II – PLANNING PROCESS**

403	Planning process.....	21
-----	-----------------------	----

**SECTION III – CONCEPT OF OPERATION**

404	JFS planning, coordination and synchronization .....	21
405	JFS plan.....	22

**SECTION IV – CONCEPT OF FIRE SUPPORT**

406	General.....	22
407	The concept of Fire Support (principles).....	22
408	The concept of Fire Support (contents).....	23
409	Preparation of orders.....	23
410	Starting movement.....	23

**SECTION V – JOINT FIRE SUPPORT COORDINATION ARCHITECTURE  
& ROLE**

411	Foreword. . . . .	24
412	Joint Fire Support Elements. . . . .	24
	a. Company Joint Fire Support Element (Coy-JFSE).....	24
	b. Battle Group Joint Fire Support Element (BG-JFSE).....	25
	c. Brigade (to Corps) Joint Fire Support Element (Bde-, Div- or Corps-JFSE).....	25

**SECTION VI – TARGETING PROCESS**

413	Targeting process. . . . .	26
-----	----------------------------	----

**SECTION VII –COORDINATION WITH OTHER  
COMPONENTS/BRANCHES**

414	General. . . . .	26
415	Cells. . . . .	26
	a. Legal Advisor (LEGAD) and Political Advisor (POLAD).....	26
	b. Targeting Cell of the higher level headquarters.....	26
	c. ISTAR assets in coordination with the G2/J2.....	27
	d. Information Operation (IO).....	27
	e. Civil-Military Cooperation (CIMIC).....	27
	f. Press information.....	27
	g. Meteorological Support.....	27
	h. Engineers.....	27

**SECTION VIII –COORDINATION MEASURES**

416	General. . . . .	28
	a. Permissive measures.....	28
	b. Restrictive measures.....	28
417	Definitions of Airspace Control Means (ACM). . . . .	28
418	Definitions of Fire Support Coordination Measures (FSCM). . . . .	28
	a. Fire Support Coordination Line (FSCL).....	28
	b. Coordinated Fire Line (CFL).....	29
	c. Free-Fire Area (FFA).....	29
	d. No-Fire Area (NFA).....	29
	e. Restricted Fire Area (RFA).....	29
	f. Restrictive Fire Line (RFL).....	29

**CHAPTER 5 – COMMAND & CONTROL RELATIONSHIPS AND  
TACTICAL TASKS**

**SECTION I – INTRODUCTION**

501	General. . . . .	30
-----	------------------	----



**SECTION II – COMMAND RELATIONSHIPS**

502 Operational Command (OPCOM)..... 30  
503 Tactical Command (TACOM)..... 30

**SECTION III – CONTROL RELATIONSHIPS**

504 Operational Control (OPCON)..... 30  
505 Tactical Control (TACON)..... 30  
506 Administrative Control (ADCON)..... 30  
507 Coordinating Authority or Direct Liaison Authority (DIRLAUTH)..... 30

**SECTION IV – INDIRECT FIRE SUPPORT SYSTEMS TACTICAL TASKS**

508 General.....31  
509 Direct Support (DS)..... 31  
510 Reinforcing (R)..... 31  
511 General Support (GS)..... 31  
512 General Support Reinforcing..... 32  
513 IFS non standard tactical mission..... 32

**CHAPTER 6 – INDIRECT FIRE SUPPORT IN LAND TACTICAL OPERATIONS**

**SECTION I – INTRODUCTION**

601 General..... 33  
602 Range of Tactical Activities..... 34  
603 Types of Area of operation..... 36

**SECTION II – FIRE SUPPORT IN LAND TACTICAL ACTIVITIES**

604 Foreword..... 38  
605 Operational Framework..... 38  
606 Offensive Activities..... 39  
    a. General..... 39  
    b. Attack..... 39  
    c. Raid & Ambush..... 40  
    d. Exploitation..... 40  
    e. Pursuit..... 41  
    f. Break-out..... 41  
    g. Feint and demonstration..... 41  
    h. Reconnaissance in force..... 41  
607 Defensive Activities..... 42  
    a. General..... 42  
    b. Defense..... 42  
    c. Delay..... 42  
608 Stability Activities..... 43  
    a. General..... 43  
    b. Security and control..... 43  
    c. Support to security sector reform..... 44

	d.	Initial restoration of services and initial governance tasks.....	44
609		Enabling Activities. . . . .	44
	a.	Reconnaissance.....	44
	b.	Security.....	44
	c.	Advance to contact.....	44
	d.	Meeting engagement.....	45
	e.	Link-Up.....	45
	f.	Withdrawal.....	45
	g.	Retirement.....	45
	h.	Relief of troop in combat.....	45
	i.	March.....	46
	j.	Obstacle breaching and crossing.....	46
610		Specific environments and tactical challenges. . . . .	47
	a.	Limited visibility.....	47
	b.	Wood and forest.....	47
	c.	Built up / Urban area.....	48
	d.	Cold weather and arctic conditions.....	49
	e.	Desert and hot regions.....	49
	f.	Operations in mountains.....	50
	g.	Operations in jungle and tropical terrain.....	51
	h.	Littoral regions.....	52
	i.	Operations in adversary controlled territory.....	52
	j.	Airmobile operations.....	53
	k.	Airborne (or air aussalt).....	54
	l.	Amphibious operations.....	55
	m.	Non contiguous, non linear areas.....	56
	n.	Asymmetrical threats.....	57

## **CHAPTER 7 – COMBAT SERVICE SUPPORT (CSS)**

### **SECTION I – INTRODUCTION**

701	Aim. . . . .	58
702	Scope. . . . .	58

### **SECTION II – PLANNING PROCESS**

703	General. . . . .	58	
704	Principles of CSS Planning. . . . .	58	
705	Multinational CSS Responsibilities and Requirements. . . . .	59	
706	Ground Indirect Fire System and CSS. . . . .	59	
707	Types of Support. . . . .	59	
	a.	Host Nation Support (HNS).....	59
	b.	National Support Element (NSE).....	59
	c.	Multi-National Support Element (MNSE).....	59

### **SECTION III – CHAIN OF COMMAND AND LOGISTICS**

708	General. . . . .	60
709	Responsibilities. . . . .	60

**SECTION IV – GROUND INDIRECT FIRE SYSTEMS AMMUNITION**

710	General. . . . .	60
711	Controlling Ammunition Requirements. . . . .	60
712	Multinational Employment of Ground Indirect Fire Systems Ammunition . . . . .	60
713	Means of Ammunition Transport. . . . .	60

**SECTION V – LOGISTIC PLANNING PROCESS**

714	General. . . . .	61
715	Ground Indirect Fire Systems Logistic Staff Tasks. . . . .	61
716	Ground Indirect Fire Systems CSS Staff Coordination. . . . .	61
717	The Logistic Estimate. . . . .	61
718	General Planning Considerations for the Primary Operations of War. . . . .	61
	a. Offensive activities. . . . .	61
	b. Defensive activities. . . . .	62
	c. Enabling activities. . . . .	62
	d. Stability activities. . . . .	62

ANNEXES:

ANNEX A	EFFECTS (DEFINITION). . . . .	63
ANNEX B	GRAPHICAL REPRESENTATION OF FIRE SUPPORT COORDINATION MEASURES (FSCM). . . . .	64
ANNEX C	INHERENT RESPONSIBILITIES OF STANDARD IFS TACTICAL MISSIONS. . . . .	65

GLOSSARY

GLOSSARY – 1 to GLOSSARY - 4

LIST OF ACRONYMS AND ABBREVIATIONS

LOAA – 1 to LOAA - 5

(INTENTIONALLY BLANK)

## CHAPTER 1

### General Introduction

#### SECTION I – INTRODUCTION

101. **General.** This publication should be read in conjunction with AArtyP-1 (Artillery Procedures).

102. **Aim of AArtyP-5 (A).** The aim of this publication is to provide guidance to all staff officers involved in planning and conducting Joint Fire Support (JFS) as a part of the overall campaign plan.

103. **Scope of AArtyP-5 (A).** This publication is applicable to indirect fire support personnel as well as other services staff officers.

#### SECTION II – JOINT FIRE SUPPORT (JFS) AND EFFECTS

104. **Joint Fire Support (JFS) and Effects.** JFS is the coordinated and integrated employment of all weapon platforms delivering fires<sup>1</sup> to achieve the required effects<sup>2</sup> on ground targets to support land operations in the full spectrum of conflict. It encompasses the integration of indirect fires and effects in order to influence the adversary forces, installations or functions<sup>3</sup>.

#### SECTION III – ALLIED JOINT DOCTRINE FOR LAND OPERATIONS (AJP 3.2)

105. **Allied Joint Doctrine for Land Operations (AJP 3.2).** AArtyP-5 (A) is mainly based on AJP 3.2 Allied Joint Doctrine for Land Operations. It is assumed that the reader of this AP is aware of the content of all relevant publications which are mentioned in the related documents. It covers the doctrine for the employment of fire support in the overall framework of allied land operations.

---

<sup>1</sup> It includes land, air, naval delivered indirect fires.

<sup>2</sup> See Annex A for definition of effects.

<sup>3</sup> Depending on national doctrine, the Joint Fire Support Element (JFSE) could either encompass influence elements as e.g. PSYOPS, CIMIC, EW or be incorporated in a wider cell dealing with overall influence activities.

(INTENTIONALLY BLANK)

## **CHAPTER 2**

### **Tasks Of Indirect Fire Systems**

#### **SECTION I – INTRODUCTION**

201. **Aim.** The aim of this chapter is to define land-based Indirect Fire Systems (IFS) and to describe the IFS contribution into land battle.

#### **SECTION II - CHARACTERISTICS OF INDIRECT FIRE SYSTEMS**

202. **IFS** is a system of systems, the main characteristics of which are its 24/7<sup>4</sup>, all weather capability to acquire ground targets and achieve effects over a wide area and in depth. It should be able to deliver guided or unguided munitions in order to strike point or area targets. The IFS is a system which includes the following five elements:

- a. A family of Surveillance, Target Acquisition (STA) systems which are linked to the wider ISTAR system,
- b. A command, control and information system (C<sup>2</sup>IS) which provides a command and control network over the battlefield and enables artillery commanders to act as fires and effect integrators also responsible for operational environment management in all dimensions,
- c. Delivery platforms like guns, rockets and missiles launchers, mortars, combat or weaponized/armed unmanned aerial vehicle (UAV),
- d. A variety of precision-guided, conventional and non-lethal munitions,
- e. An ammunition resupply system.

Moreover, IFS units are characterized by a very flexible organization in order to be able to deploy and operate on highly centralized or decentralized manner. Resulting from this flexible structure, IFS units are able to perform efficiently in a complex operational environment.

#### **SECTION III - ROLE AND PURPOSE OF INDIRECT FIRE SYSTEMS**

203. **The role of IFS** is to support the ground maneuver forces with fires and effects. The artillery commander at all levels is the adviser IFS of the maneuver commander and the expert to support maneuver forces with all types of fires. They are responsible for the integration, synchronization and coordination of fire support delivered by air, maritime and land effectors, in time, space and purpose, in support of the common land operational objective. It only emphasizes the fact that synchronization of JFS with the supported forces is essential. JFS may thus provide lethal or non-lethal effects in such a way as to have synergistic effects on land operations. Nevertheless, IFS provides close and deep fire support, counter battery fire and contributes to the suppression of enemy air defenses (SEAD).

---

<sup>4</sup> 24/7: Ability to function 24 hours a day and 7 days a week without interruption.

## **SECTION IV - GENERAL TASKS OF INDIRECT FIRE SYSTEMS**

204. The **tasks of IFS** are based on the concept of operations and intent of the maneuver commander. These are the basis for combat organization. In detail:

- a. Allocation of IFS assets (effectors and sensors).
- b. Taking part in the intelligence cycle and STA.
- c. Fire support and effects integration.
- d. Command and Control (C<sup>2</sup>) of all IFS.
- e. Coordinating the Joint Fire Support effects.
- f. Liaison and cooperation with other services, branches and combined forces.
- g. Execution of combat service support.
- h. Force protection.



## CHAPTER 3

### Fire Support Capabilities

#### SECTION I – INTRODUCTION

301. **Aim.** The aim of the chapter is to describe the capabilities of all JFS assets by environment air, sea and land. As well as the land component's organic fire support capabilities there are fire support assets integral to other components, such as Anti Surface Force Air Operations (ASFAO) and Naval Fire Support.

#### SECTION II - SURVEILLANCE TARGET ACQUISITION CAPABILITIES

302. **IFS STA systems** are designed to produce target data. They yield basic data and information for fire support as well as contributing to the development of situational awareness. IFS STA assets will be used for non-IFS intelligence collection tasks, but such use must be weighed against the need to acquire IFS targets. Sensors not belonging to IFS (e.g. sensors of reccee unit) could also contribute to the target acquisition process.

IFS STA uses ground and air systems.

The following assets are generally provided by IFS units to perform these activities:

- a. Forward observers and Forward Air Controllers (FO/FAC Teams) for target acquisition, target engagement with ground, air and sea based assets, airspace deconfliction as well as Battle Damage Assessment<sup>5</sup> (BDA).
- b. Radar systems for
  - (1) Target acquisition,
  - (2) Target engagement in the traditional fire support role or in the Counter Rocket Artillery & Mortar protection (CRAM) concept,
  - (3) Troop warning in the context of force protection engagement,
  - (4) BDA.
- c. Unmanned Aerial Vehicles (UAV's) for surveillance, target acquisition, target engagement and BDA,
- d. Acoustic Weapon Location (AWL) Systems.

All of these assets are integrated in a system of systems supplementing and overlapping each other, often operating independent of weather conditions and time of day.

---

<sup>5</sup> BDA see lexicon.

### **SECTION III - LAND-BASED INDIRECT FIRE SYSTEMS CAPABILITIES**

303. **Land-based IFS** uses a variety of weapon systems and ammunitions (guided and unguided) in order to cover the entire battlefield with indirect fire delivering a variety of effects, as determined by the maneuver commander. There are three principal types of ground-based indirect fire weapon systems. These are:

- a. **Mortar** uses self-propelled, towed and man-portable equipment<sup>6</sup>. In general it is integrated in the Indirect Fire System and uses precision as well as unguided ammunitions.
- b. **Tube artillery** uses self-propelled and towed gun equipment and is characterized by a high responsiveness, accuracy, and the capability to deliver sustained fire. An extensive selection of ammunition, coupled with sophisticated target acquisition assets permit the engagement of both point and area targets and a target effect adjusted to the tactical requirements.
- c. **Rocket/Missile artillery** uses guided or unguided ammunition and its long range enable it to strike high pay off targets throughout the depth of the battlefield. It has the capability to deliver a very heavy weight of fire for a short period.

### **SECTION IV - AIR-BASED FIRE SUPPORT CAPABILITIES**

304. **Fixed Wing.** ASFAO will be used in two aspects: Anti-surface warfare operations (maritime) and air-land operations (AJP-01). Air-land operations consist of Air Interdiction (AI) which is mainly used for operational level objectives and Close Air Support (CAS) which is mainly used for tactical level objectives.

CAS is an air action against hostile targets which are in close proximity to friendly forces and which require detailed integration of each air mission with the fire and movement of those forces (AAP-6). The mission must always be supported by a qualified Tactical Air Control Parties Forward Air Controller or TACP (FAC) and is flown in direct support of ground forces, in offensive and defensive operations, to destroy, disrupt, suppress, fix or delay enemy forces where they are in close proximity to friendly forces. This team should be included in the Joint Fire Support Element (JFSE) in order to ease integration of all fire support assets (further details to be found in chapter IV).

305. **Rotary Wing.** The primary missions of rotary wing assets are divided in two basic types of attack: Interdiction Attack (IA) and Close Combat Attack (CCA).

IA is a hasty or deliberate attack either to divert, disrupt, delay, degrade, or destroy the adversary before they can be used effectively against friendly forces. IA is conducted at such a distance from friendly forces that detailed integration with ground forces is not required.

CCA is a hasty or deliberate attack by providing air-to-ground fires for friendly units engaged in close combat. Due to the close proximity of friendly forces, detailed integration is desirable but not always possible.

306. **Combat Unmanned Aerial Vehicle (C UAV) / Weaponized/Armed UAV.** C UAV (or Weaponized/Armed UAV) is an armed UAV that can be used in a reconnaissance role and/or combat actions.

---

<sup>6</sup> In some nations these assets do not belong to the artillery.

The commander can use those assets to fly 24/7 operations throughout the Joint Operation Area (JOA) in direct support of own ground forces, in offensive and defensive operations.

307. All air missions flown short of the Fire Support Coordination Line (FSCL)<sup>7</sup> are controlled (e.g. positive control/procedural clearance) by the land force commander.

## **SECTION V - SEA-BASED FIRE SUPPORT CAPABILITIES**

308. Some land operations may be supported by sea based indirect fire systems as e.g. amphibious operations<sup>8</sup> and defense of coastal areas (contribution of the Maritime Component to Joint Operations). The coordination of naval fires happens at every level. Specialist naval fire support coordinators may be used for liaison through the Supporting Arms Coordination Center (SACC). If there is no allocated maritime fire support observer for ground troops, the JFSE has the additional responsibility of observing and controlling NGS in support of the land component. The NGS procedures and Amphibious Tactics, Techniques & Procedures (TTP) are described in detail respectively in ATP-04 and 08. A maritime fire support group consists of naval combatants assigned to support Land Forces operations ashore by naval gunfire support (NGS) and guided missile support. Due to the multi-role character of many naval combatants, units of an escort/screening group may conduct fire support missions without being formed into a separate fire support group and vice versa. NGS can provide large volumes of immediately available, responsive fire support to Land Combat Forces operating near coastal waters.

## **SECTION VI - AMMUNITION CAPABILITIES**

309. Nations use different munitions for target engagement. Comparable munitions can have a varying effect from lethal to non-lethal. The degree of interchangeability has to be determined in each case and in accordance with AOP-29. Of particular importance are ballistic data, the propelling charge system used and the performance data. The indirect fires munitions are divided into two different categories:

a. **Unguided Munitions**

It follows the ballistic trajectory. Their accuracy is directly related to the delivery platform (e.g. Topographical<sup>9</sup>, Meteorological and ballistic data). The ability to guarantee first round fire for effect is depended on the accuracy. The accuracy of the system can be improved through registration fires, calibration or/and adjustment.

b. **Precision Guided Munitions (PGM)**

PGM are munitions for which the effect and its point of delivery, in time and space, may be controlled, either internally or externally, after departure from the launch platform. PGM is to be divided in the following types:

- (1) Laser-Guided Projectiles (LGP),
- (2) Terminally Homing Projectiles (THP),

<sup>7</sup> See chapter IV – section 8 for complete definition.

<sup>8</sup> ATP 08 Vol 2 – TTP for Amphibious operations – An amphibious operation is a military operation launched from the sea by a naval and landing force embarked in ships or craft, with the principal purpose of projecting the landing force ashore tactically into an environment ranging from permissive to hostile.

<sup>9</sup> Topographical accuracy encompasses accuracy at effector level (also known as Gun Location Error [GLE]) and at target level (also known as Target Location Error [TLE]).

- (3) Trajectory Correctable Munitions as e.g. Course Correcting Fuzes (CCF) or GPS guided munitions,
- (4) Sensor Fuzed (Sub) Munitions,
- (5) Loitering munitions<sup>10</sup> (LM),
- (6) Video link lock on munitions.

Details concerning this specific topic are given in AArtyP-1 (STANAG 2934).

---

<sup>10</sup> Loitering munitions: Munitions able to remain in position over a target area and to be reassigned a target in flight. During the attack phase target can be aborted with the munition returning to the loitering mode. These munitions are delivered by a wide range of platforms e.g. rocket launcher, plane or ship.

## CHAPTER 4

# Fires And Effects Planning, Coordination And Synchronization

### SECTION I – INTRODUCTION

401. **Aim.** The aim of this chapter is to establish the essential elements of fire support planning and guidelines for the coordination of all fire support, lethal or non-lethal<sup>11</sup>.

402. **General.** This chapter describes the principles and concepts of JFS planning, coordination and execution. JFS planning is the continuous process of analyzing, allocating and scheduling the use of FS assets. Effective JFS planning places the right elements of the different FS systems in the right place at the right time with the required effects. JFS coordination is used to integrate and coordinate land, air, and maritime fires to support the maneuver commander's intent and operations plan. Therefore the artillery commander leads the JFSE as an effects coordinator. This is the only element which deals with JFS. The purpose of JFS coordination is to allow the maximum exploitation of all available FS assets while decreasing the risk of fratricide and/or collateral damage. To facilitate this clearance of fire, Fire Support Coordination Measures (FSCM) and Airspace Control Means (ACM) should be used.

### SECTION II - PLANNING PROCESS

403. JFS represents a significant contribution to the maneuver commander's combat power, and should be coordinated within the framework of a 'concept of fire support'. It is essential to have a concept of FS that is synchronized with and supports the maneuver commander's concept of operations. The ultimate purpose of the JFS planning, coordination and synchronization is to optimize the use of all FS assets delivering lethal or non-lethal effects. Although the concept of FS shall be drafted by the FS staff, the commander is ultimately responsible for ensuring that the application of JFS is synchronized with the other elements of his force.

### SECTION III - CONCEPT OF OPERATION

404. The **JFS planning, coordination, and synchronization** ensure that all available lethal and non-lethal FS assets are employed in accordance with the commander's concept of operations. The Effects Coordinator (ECOORD) is the primary staff officer responsible for the development, integration and synchronization of all FS assets lethal or not into the concept of FS. This role is usually assigned to the senior field artillery commander at Bde level and above<sup>12</sup>.

405. The concept of operation describes his intent and priorities for the FS. The **JFS plan** should reflect this concept of FS.

a. Intent for Joint Fire Support

The intent for JFS is the maneuver commander's declaration of what the FS assets must accomplish.

---

<sup>11</sup> It must be seen in the scope of the land battle. It implies that the Land Component is supported and the other components are supporting as foreseen in NATO publications.

<sup>12</sup> This role could be endorsed by the Fire Support Officer of the BG if no higher level is deployed and/or able to conduct those activities.

- b. Joint Fire Support Priorities  
The commander's guidance prioritizes the targeting effort, and clarifies the expected availability of FS assets for a given operation or period, and how resources should be allocated during the execution of the operation.
- c. The commander frequently delegates authority for drafting of the concept of FS, the planning and execution of FS for the operation, and the clearance of fires to the ECOORD<sup>13</sup> that will command and control the JFSE for applicable tactical level.

## **SECTION IV - CONCEPT OF FIRE SUPPORT**

406. After the concept of the operation has been formalized by G3/J3 in cooperation with G2/J2; the ECOORD will then finalize the Concept of Fire Support.

### 407. **The Concept of Fire Support (principles)**

In order to plan effective employment of FS assets, the ECOORD will rely on the following principles:

- a. Early involvement of all liaison and command elements deployed within the scope of the JFSE (e.g. TACP Air Liaison Officer [ALO]) in order to guarantee integrated and effective planning of non land organic FS assets,
- b. Early and continuous planning (in order to effectively integrate FS with the scheme of maneuver),
- c. Exploitation of all target acquisition assets (from own, higher and adjacent echelon),
- d. Effective employment of FS assets and capabilities (lethal/non-lethal, lowest suitable assets capable of achieving required effects [economy of forces], integration of all restraints),
- e. Air, naval and land coordination in order to minimize the risk of fratricide/collateral damage by deconflicting the use of the three dimensional battle space,
- f. Rapid and reactive coordination in order to effectively support the battle,
- g. Establishing coordinating measures as FSCM (see section 8 for details) or requesting other measures as ACM in order to speed up the target engagement process while safeguarding friendly forces,
- h. Flexibility in order to facilitate future operation (e.g. contingency, sequel, branch, on order plan).

### 408. **Concept of Fire Support (contents)**

The concept of FS will encompass the following elements:

- a. Allocation of JFSE – Land,
- b. Integration of JFSE of other components as mentioned in applicable guidance,

---

<sup>13</sup> The ECOORD is the artillery commander at brigade level and above.

- c. Translation of the commander's intent and guidance into fire support tasks<sup>14</sup> for each engaged component (subparagraphs will be provided by the respective specialists integrated in the JFSE),
- d. Projected changes to the allocation of FS assets based on approved concept of operations,
- e. Coordination and synchronization instructions for the timely detection and attack of high-payoff targets (HPT) in accordance with the Joint Prioritized Target List (JPTL),
- f. Setting of the clearance of fire process and definition of the type of fire that are pre-cleared,
- g. Applicable Rules of Engagement (ROE),
- h. Restrictions on ammunition expenditures, types of fires, areas of employment (in order to mitigate fratricide and/or collateral damages),
- i. Meteorological (Met) and survey support guidance and dissemination to mortar units, if applicable,
- j. Requirements for positioning of assets, the make-up of basic loads, the controlled supply rate, and required target damage and other applicable Combat Service Support (CSS) aspects.
- k. Together with G3/J3, the boundaries, FSCM and any other control measures necessary to ensure coordination.

409. **Preparation of Orders**

The form of the FS orders will be detailed in AArtyP-1 – Artillery procedures document. Drafting must begin as soon as possible. It may be necessary to issue fragmentary orders to start time-critical actions quickly. Most often, this will be to move FS assets and redistribute ammunition.

410. **Starting Movement**

Movement begins on orders to position the force to execute the mission in accordance with the developing plan. The ECOORD must ensure the movement of supporting IFS units provides continuously available and responsive effects.

## **SECTION V - JOINT FIRE SUPPORT COORDINATION ARCHITECTURE & ROLE**

411. **Foreword**

- a. Coordination is required at all levels of command from company level to Battle Group level. This level of coordination will be carried out by the Joint Fire Support

---

<sup>14</sup> The tasks should include a purpose, methods and effects and describes what targeting objectives (e.g. delay, disrupt, limit, harass or destroy), fires must achieve on an adversary capability. The purpose describes why the task contributes to maneuver. The method describes how the task will be accomplished by assigning responsibility to observers or units and delivery assets and providing amplifying information or restrictions. Typically the method is described by covering three categories: priority, allocation, and restrictions. Effects quantify successful accomplishment of the task.

Element. From Brigade and above, it may be necessary to restructure in order to support the lower Joint Fire Support Elements requirements.

- b. It is worthwhile to define some basic terms that will clarify the key role played by JFSE in the integration of effects delivered by multiple FS elements.
  - (1) **Coordination in the 3 dimensions and time**  
The fire support elements have to comply with applicable ACM in the JOA. If necessary, the land users can request additional measures if required to coordinate the fires and to avoid fratricide.  
In absence of a dedicated cell for airspace coordination, the JFSE should assume this responsibility.
  - (2) **Coordination of Fire Support**  
The planning and executing of fires must ensure that targets are adequately covered by a suitable weapon or group of weapons<sup>15</sup>.
  - (3) **Deconfliction of JFS**  
Coordination of the battlespace (air, naval and land environment) conducted by the JFSE to optimize the use of JFS assets in order to allow safe freedom of movement and delivery of fires and effects.

412. **Joint Fire Support Elements<sup>16</sup>**. The Joint Fire Support Element (JFSE) is the artillery led element responsible at all levels for the overall planning, coordinating and employment of all allocated JFS assets. It is the single point of contact for JFS coordination at all levels. This element should always be tailored to the mission and to the level of force and reinforced by all necessary liaison cells as required.

a. **Company Joint Fire Support Element (Coy-JFSE)**

- (1) Deployment level: maneuver company,
- (2) Role
  - (a) The Fire Support Officer (FSO) advise the maneuver company commander in all JFS matter,
  - (b) Deconflict available FS resources at the lowest level when applicable,
  - (c) Liaise with applicable command and coordination level,
  - (d) Command, control and deploy the sub capabilities (e.g. TACP (FAC)) after coordination with maneuver commander when applicable.
- (3) Skills  
Be able to call for fires (planned and unplanned) and to control FS delivered by air, ground and naval FS assets by integrating all applicable coordination measures as e.g. ACM.
- (4) When necessary, the maneuver company could be reinforced by STA assets or other coordination assets.

---

<sup>15</sup> The weapon systems performing the mission could belong to more than one component.

<sup>16</sup> This is a generic phrase not intended to replace any national term.



b. **Battle Group Joint Fire Support Element (BG-JFSE)**

- (1) Deployment level: maneuver battalion or Battle Group (BG),
- (2) Role
  - (a) The FSO advise the battalion/BG commander in all JFS matter,
  - (b) Command and control all deployed Coy-JFSE in his BG,
  - (c) Integrate and coordinate all liaison and command cells provided by supporting elements when applicable,
  - (d) Deconflict and coordinate the employment of all available FS resources at BG level (e.g. prioritized employment of FS assets),
  - (e) Liaise with applicable command and coordination level,
  - (d) Request higher level FS reinforcement,
  - (g) If necessary, be able to conduct mission analysis and to plan the employment of organic land FS assets and to disseminate JFS order.
- (3) Skills  
Able to integrate fires delivered by air, ground and naval FS assets, able to request and/or command and coordinate the employment of allocated STA assets, able to elaborate fire plan and to participate in the targeting loop, able to use and request ACM if necessary.
- (4) When necessary, the BG could be reinforced by STA assets or other coordination assets.

c. **Brigade (to Corps) Joint Fire Support Element (Bde-, Div- or Corps JFSE)**

- (1) Deployment level: Brigade to Corps level,
- (2) Role
  - (a) The ECOORD advise the Brigade to Corps commander in all JFS matter,
  - (b) Integrate, command and coordinate all liaison and command cells provided by supporting elements,
  - (c) Deconflict the employment of all FS resources from air, naval and land components,
  - (d) Liaise with applicable command and coordination levels,
  - (e) Request higher level FS reinforcement,
  - (f) Conduct mission analysis, staff estimate and plan the employment of organic land FS assets and integrate all FS reinforcement received from other components or higher levels,
  - (g) Disseminate JFS plan including all FS resources provided by supporting components.
- (3) Skills  
Able to integrate fires delivered by air, ground and naval FS assets; to participate in the elaboration and dissemination of coordination measures applicable for the users of the 2nd and 3rd dimension as e.g. FSCM; able to conduct current and future operations; able to liaise with intelligence cells in order to coordinate and integrate the employment of sensors in the comprehensive approach; able to liaise with non-lethal elements in order to guarantee the dissemination of an integrated effects matrix; able to elaborate fire plan and to participate in the targeting loop.

## **SECTION VI - TARGETING PROCESS**

413. **Land targeting** methodology is based on the Decide, Detect, Deliver, and Assess (D3A) functions which cover both planning and execution stages. This methodology organizes the efforts of the commander and staff to accomplish key targeting requirements. The targeting process supports the commander's decisions. It helps the targeting team to decide which targets must be acquired and attacked. It helps in the decision of which attack option to be used engaging targets for achieving the desired effects. It is a continuous process, constantly refined as the battle develops. The value of the targeting process is that it ensures the maximum numbers of decisions are taken in advance, so that targets can be engaged with the optimum weapons and without delay as soon as they are located or at a selected time and place. The commander and staff must remember the D3A targeting methodology occurs cyclically. The D3A functions blend into one another, are continuously reviewed and adjusted, and may recycle at any point. The Senior Targeting Officer is the only person who is in charge of the D3A targeting process. This is valid for LCC, which could be based upon Bde, Division or Corps level. The commanding levels below LCC have no targeting cell, although they are contributors to the targeting cycle. The land targeting cycle focuses on the Land Component deep/shaping battle, and aims to shape the battle-space for the maneuver elements. Elements of the close/decisive battle do not conduct targeting, but can support it. Although land targeting and joint targeting are separate cycles there are important linkages between the two which aim to deconflict and prioritize the prosecution of targets. Details are to be found within AJP-3.9.2 – Land Targeting.

## **SECTION VII - COORDINATION WITH OTHER COMPONENTS/BRANCHES**

414. **General.** It is mandatory that the effects either lethal or non-lethal induced by FS actors or other actors e.g. Electronic Warfare (EW), Psychological Operations (PSYOPS) are integrated in a combined and synchronized effects matrix in order to assist in the realization of the global campaign objectives. This wide coordination/integration is normally a top-down process but it could be necessary to execute this comprehensive approach at a lower level in order to deal with complex environment and engagement methods.

415. The **cells** with which we have to interact are:

a. **Legal Advisor (LEGAD) and Political Advisor (POLAD)**

(1) LEGAD

The ECOORD, when applicable, has to liaise with LEGAD regarding ROE, targeting, and other aspects in order to ensure that any action is carried out in accordance with international laws and the laws of armed conflicts.

(2) POLAD

Taking into account the main mission of the POLAD is to follow the political situation from a local, national and international perspective and as a result their evolution and possible implication on the conduct of operations. The ECOORD, when applicable, must liaise with POLAD cell regarding the campaign's effects while conducting targeting process or during the staff estimate as well as to be aware of all caveats when employing multinational assets.

- b. **Targeting Cell of the higher level headquarters**  
The ECOORD (or FSO when applicable) has to liaise with the higher headquarters' targeting cell if applicable in order to coordinate his own battle rhythm with the higher headquarters' targeting process. He must ensure that all the requirements (TNL process) are taken into account by the higher echelon and all the assigned targets have effectors allocated to them. Liaison is mandatory to permit the continuous refinement of the targeting process and to stay in line with the evolution of the overall operation plan.
- c. **ISTAR assets in coordination with the G2/J2**  
The ECOORD (or FSO when applicable) has to liaise from the outset of the staff estimate with the Intelligence cells (own, adjacent, higher) in order to have
- (1) Updated target array,
  - (2) Latest Intelligence Preparation of the Battlefield (IPB) products,
  - (3) Updated adversary Course of Action (COA) and capabilities,
  - (4) Mandatory inputs for the targeting cell,
  - (5) Coordinated employment of all collection and dissemination assets,
  - (6) JFSE employment supporting the Intelligence, Surveillance and Reconnaissance (ISR) assets.
- d. **Information Operation (IO)**  
IO is a coordinating and integrating function and not a capability in its own right, it encompasses capabilities or techniques such as PSYOPS, Information Security (INFOSEC), EW, and Computer Network Operations (CNO), Key Leader Engagement. In order to coordinate, integrate and synchronize his own IO Plan with the overall operational plan and the resulting long and short term effects, the ECOORD (or FSO when applicable) will liaise with the higher or adjacent echelon IO cell.
- e. **Civil-Military Cooperation (CIMIC)**  
The ECOORD (or FSO when applicable) should liaise with the CIMIC representative in order to be aware of CIMIC plans and to integrate these into the targeting concept.
- f. **Press Information**  
The ECOORD must liaise with the Public Affair Officer (PAO), owing to the importance of Media in the modern battlefield in order to clarify any situation concerning effects from Indirect Fire Systems (e.g. collateral damages).
- g. **Meteorological Support**  
Most FS assets require Met support. IFS, Air Force and Army Aviation usually provide their own Met, however, there is some interchangeability. It is the responsibility of the ECOORD (or FSO when applicable) to coordinate and to position the Met sections, if they belong or are allocated to IFS units. Planning and use of the Met section begins with the maneuver commander's intent, the guidance of the ECOORD, and the battlefield weather conditions if needed. During the planning, full consideration must be given to the commander's concept, mission priorities, tactical situation and security, prevailing winds, location of units supported, future operations, location of other Met sections, and communications facilities. The primary consideration is that the Met station must be located where the sounding of the atmosphere best represents the Met needs of the supported units. Since more and

more nations are going to use model data, a Weather Analysis Centre (WAC) has to be allocated to the Met station. The format to transport this data is Meteorological Gridded Message (METGM) which is described in STANAG 6022. The format to request and to specify the Met data from a WAC is described in STANAG 4103. Until MET organization assets and IFS C2 systems are able to perform with STANAG 6022 format, it is acceptable to perform with METBM and METCM format, described in STANAG 4061 and 4082 respectively.

h. **Engineers**

The ECOORD (or FSO when applicable) has to liaise with own, adjacent and/or higher engineer cell in order to ensure that the use of IFS mine laying has been approved by the commander on one hand and coordinated, synchronized and integrated in the engineer obstacle plan on the other hand. The same coordination applies when FS elements are involved in infrastructure destruction as e.g. bridge. The ECOORD (or FSO when applicable) must also liaise with appropriate command channels in order to disseminate location information of the minefield for safeguarding own troops and avoiding the unplanned reduction of the freedom of movement. The ECOORD (or FSO when applicable) must finally be prepared to strike own obstacles in order to deny adversary's breaching activity or to facilitate the neutralization of an adversary blocked or engaged on it.

## **SECTION VIII - COORDINATION MEASURES**

416. **General.** Coordination measures are used to coordinate and integrate land, air, and maritime indirect fires to support the maneuver commander's intent and operations plan. The purpose of coordination measures is to allow the maximum exploitation of all available FS assets while ensuring the safety of own troops against the effects of own fires.

In the event that fires or the effects of fires are outside the area of responsibility (AOR) or close to the boundaries of that commander, permission/coordination by liaison must be obtained prior to execution.

It also implies that when requested to clear fires, the command controlling that zone of operation has a clear responsibility to provide either clearance or denial of clearance to execute those fires. To facilitate this clearance of fire, FSCM and ACM may be used.

There are:

- a. **Permissive Measures** which have the purpose of facilitating the attack of targets. With the establishment of a permissive measure, no further coordination is required for the engagement of targets affected by the measure. Permissive measures for example include Fire Support Coordination Line (FSCL), Free-Fire Area (FFA) or Coordinated Fire Line (CFL).
- b. **Restrictive Measures** which have the purpose of providing safeguards to friendly forces or objects. The establishment of a restrictive measure imposes certain requirements for specific coordination prior to the engagement of those targets affected by the measure. Restrictive measures for example include Restrictive Fire Line (RFL), No-Fire Area (NFA) and the Restricted Fire Area (RFA).

417. **Definitions of Airspace Control Means (ACM).** See ATP 3.3.2.1 (STANAG 7144) Tactics, Techniques and Procedures for Close Air Support Operations and AJP 3.3.5 (A) (STANAG 3805) Doctrine for Joint Airspace Control for all detailed explanation concerning ACM.

418. **Definitions of Fire Support Coordination Measures (FSCM).**

c. **Fire Support Coordination Line (FSCL)**

Within an assigned area of operations, a line established by a land or amphibious force commander to denote coordination requirements for fires by other force elements which may affect the commander's current and planned operations. The FSCL applies to fires of air, ground or sea weapons using any type of ammunition against surface or ground targets. The establishment of the fire support coordination line must be coordinated with the appropriate commanders and supporting elements. Attacks against surface or ground targets short of the fire support coordination line must be conducted under the positive control or procedural clearance of the associated land or amphibious force commander. Unless in exceptional circumstances, commanders of forces attacking targets beyond the FSCL must coordinate with all affected commanders in order to avoid fratricide and to harmonize joint objectives. Note: In the context of this definition the term "surface targets" applies to those in littoral or inland waters within the designated area of operations.

d. **Coordinated Fire Line (CFL)**

The CFL is a line beyond which conventional, indirect, surface fire support means may fire at any time within the boundaries of the establishing headquarters without additional co-ordination.

e. **Free-Fire Area (FFA)**

The FFA is a specific designated area into which any weapon system may fire without additional co-ordination with the establishing headquarters.

f. **No-Fire Area (NFA)**

The NFA is an area into which no fires or the effects of fires are allowed except if temporarily authorized by establishing authority or if an adversary force within this area engage our forces.

g. **Restricted Fire Area (RFA)**

The RFA is an area in which specific restrictions are imposed and in which fires that exceed those restrictions are not delivered without co-ordination with the establishing headquarters.

h. **Restrictive Fire Line (RFL)**

The RFL is a line established between converging friendly forces (one or both may be moving) that prohibit all fire or effects from fires across the line without coordination with the affected force.

See Annex B for graphic representation. Procedural details can be read in AArtyP-1 (STANAG 2934).

(INTENTIONALLY BLANK)

## **CHAPTER 5**

### **Command & Control Relationships And Tactical Tasks**

#### **SECTION I – INTRODUCTION**

501. **General.** In order to exercise effective C<sup>2</sup>, a commander must be aware of the C<sup>2</sup> relationships which exist between himself and the formations and units allocated to him for his mission.

#### **SECTION II – COMMAND RELATIONSHIPS**

502. **Operational Command (OPCOM).** The authority granted to a commander to assign missions or tasks to subordinate commanders, to deploy units, to reassign forces, and to retain or delegate operational and/or tactical control as the commander deems necessary.

**Note: It does not include responsibility for administration.**

503. **Tactical Command (TACOM).** The authority delegated to a commander to assign tasks to forces under his command for the accomplishment of the mission assigned by higher authority.

#### **SECTION III – CONTROL RELATIONSHIPS**

504. **Operational Control (OPCON).** The authority delegated to a commander to direct forces assigned so that the commander may accomplish specific missions or tasks which are usually limited by function, time, or location; to deploy units concerned, and to retain or assign tactical control of those units. It does not include authority to assign separate employment of components of the units concerned. Neither does it, of itself, include administrative or logistic control.

505. **Tactical Control (TACON).** The detailed and, usually, local direction and control of movements or maneuvers necessary to accomplish missions or tasks assigned.

506. **Administrative Control (ADCON).** Direction or exercise of authority over subordinate or other organizations in respect to administrative matters such as personnel management, supply, services, and other matters not included in the operational missions of the subordinate or other organizations.

507. **Coordinating Authority or Direct Liaison Authority (DIRLAUTH).** The authority granted to a commander or individual assigned responsibility for coordinating specific functions or activities involving forces of two or more countries or commands, or two or more services or two or more forces of the same service. He has the authority to require consultation between the components involved or their representatives, but does not have the authority to compel agreement. In case of disagreement between the components involved, he should attempt to obtain essential agreement by discussion. In the event he is unable to obtain essential agreement he shall refer the matter to the appropriate authority.

## **SECTION IV - INDIRECT FIRE SUPPORT SYSTEMS TACTICAL TASKS**

### **508. General.**

- a. Once command relationships are established, the force commander assigns the IFS tactical missions. He bases his assignments on the advice of the ECOORD (or FSO when applicable).
- b. An assigned IFS tactical mission may be one of four standard IFS tactical missions or a nonstandard IFS tactical mission. The four standard IFS tactical missions are Direct Support (DS), Reinforcing (R), General Support Reinforcing (GSR) and General Support (GS). Nonstandard IFS tactical missions are developed when none of these standard missions sufficiently addresses IFS tactical requirements and/or responsibilities.
- c. An IFS tactical mission describes in detail the support responsibilities of an IFS unit. The mission also clearly defines the relationship of the IFS unit with a maneuver unit or another IFS unit. It does not affect the organizational structure or the command relationships that results from that structure. Each standard IFS tactical mission contains several inherent responsibilities<sup>17</sup> (see annex C for details).
- d. Nonstandard IFS tactical missions usually address changes that are needed in these responsibilities or additional responsibilities not addressed by the standard missions.

### **509. Direct support (DS).**

- a. DS is the support provided by a unit not attached to or under the command of the supported unit or formation, but required to give priority to the support required by that unit or formation (AAP 6 – STANAG 3680).
- b. The DS mission is used to provide responsive indirect fires to a particular maneuver unit and thus primarily concentrates IFS needs on that maneuver unit. The DS battalion commander is the ECOORD for the supported maneuver force. Fires are planned and coordinated with the maneuver unit and the DS battalion commander positions his units where they can best support the scheme of maneuver. Because of this, a DS IFS unit's planning process and operations are significantly integrated with their counterparts in the supported maneuver unit. DS is the most decentralized standard IFS tactical mission.

### **510. Reinforcing (R).**

- a. R is a tactical mission in which one IFS unit augments the fire of another IFS unit.
- b. Commanders use the reinforcing mission to add weight (fires) to a specific area or maneuver unit by designating one or more IFS units to augment the fires of another IFS unit. The reinforcing IFS unit will generally reinforce a DS IFS unit. A reinforcing IFS unit can reinforce only one IFS unit, but a reinforced battalion can be reinforced by more than one IFS unit.

---

<sup>17</sup> As e.g. to liaise with, to allocate sensors, to plan fires (complete list in Annex C).



511. **General Support (GS).**

- a. GS is a support which is given to the supported force as a whole and not to any particular subdivision thereof.
- b. An IFS unit in GS supports the maneuver force as a whole and remains under the immediate control of the applicable JFSE. This mission ensures IFS is immediately responsive to the needs of the maneuver force commander. Like the DS mission, the GS mission establishes a relationship between an IFS unit and a maneuver unit. It is the most centralized of the standard IFS tactical missions.

512. **General Support Reinforcing (GSR).**

- a. GSR is a tactical task in which an IFS unit fires in support of the force as a whole and, on a secondary basis, provides reinforcing fire for another IFS unit.
- b. The GSR mission requires the IFS unit to furnish IFS fires for the maneuver force as a whole and to reinforce the fires of another IFS battalion as a second priority. A GSR battalion remains under the control of the applicable JFSE. The GSR mission gives the maneuver force commander the flexibility to respond to a variety of tactical situations.

513. **IFS non standard tactical mission.** If an unusual tactical situation exists, or none of the standard IFS tactical missions accurately convey the maneuver commander's guidance for fires, he assigns a nonstandard IFS tactical mission to the IFS unit. A nonstandard IFS tactical mission may amplify, limit, or change one or more of the eight inherent responsibilities, or it may spell out contingencies not covered by those responsibilities. If the revision is so complex that the standard IFS mission is no longer recognizable, a nonstandard mission statement will address each of the seven inherent responsibilities. Units sometimes use a nonstandard mission when there are not sufficient IFS to cover all the contingencies or if an IFS unit is assigned with more than one functional mission. It is also a means by which the commander can tailor his IFS assets in anticipation of future operations. A nonstandard mission may involve limitations or guidance concerning ammunition, positioning, or other critical factors.

(INTENTIONALLY BLANK)

## CHAPTER 6

### Indirect Fire Support Systems In Land Tactical Operations

#### SECTION I – INTRODUCTION

**601. General.**

Campaign Themes. As described in AJP 3.2, there exists a set of distinct military campaign themes; major combat, counter-insurgency (COIN), peace support operations (PSO), and peace military engagement (PME) that may be generally plotted at appropriate locations on the spectrum of conflict. Within these campaign themes, it is important that land forces are able to conduct a wide range of military activities simultaneously and sequentially and shift quickly from one type of operation to another in rapidly evolving conflicts. The balance across this range of activities will directly reflect the type of campaign that is being conducted and its inherent principles.

**Error! Objects cannot be created from editing field codes.**

Figure 6.1 – Predominant Campaign Themes

602. **Range of Tactical Activities.** Land forces will undertake a wide range of tactical level activities. The tactical activities are divided into the following<sup>18</sup>:

- a. **Offensive activities:**  
Activities in which forces seek out the adversary forces in order to attack him;
- b. **Defensive activities:**  
Activities that resist adversary offensive activities;
- c. **Stability activities:**  
Activities that seek to stabilize the situation and reduce the level of violence. They impose security and control over an area while employing military capabilities to restore services and support civilian agencies; and
- d. **Enabling activities:**  
Tactical activities that link, support, or create the conditions for offensive, defensive and stability activities.  
Undertaken within a campaign at the tactical level, all these activities may be conducted simultaneously in the same operation. The balance between types of activities gives a campaign its predominant character. All those activities can take place in special environment (e.g. urban area) or in special circumstances (e.g. arctic conditions).

Land tactical activities are listed in the table below. Tactical activities are tangible undertakings that can be assigned to units and sub-units, usually through specific tactical tasks.

Stability activities involve both coercive and cooperative tasks that include establishing a secure environment to build essential services in conjunction with indigenous groups or NGOs. They may occur before, during and after offensive and defensive activities and may be the main effort of a campaign.

Offensive and defensive activities are physical activities that create effects in the physical and subsequently the psychological domains.

Just as offensive and defensive tactical activities are accomplished through tactical tasks, such as “destroy”, “seize” or “block”, stability activities will be accomplished through a series of tactical tasks, such as vehicle check points, observation posts, framework<sup>19</sup> patrolling, cordon and searches, humanitarian aid, and reconstruction to name but a few.

Each of the four types of tactical activities is accomplished through the assignment of tactical tasks. These are normally the tactical tasks assigned to units and below. An example of the types of tactical tasks (often equating to mission task verbs) that support their respective tactical activities is given in the table below:

---

<sup>18</sup> Taken from AJP 3.2 Allied Joint Doctrine for Land Operations Lexicon.

<sup>19</sup> Framework patrolling helps to secure an indigenous area and its population through the presence of a military force. They are normally conducted in an overt fashion.

	Offensive	Defensive	Stability	Enabling
<p>Tactical Activities</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <p>Activities are realised through the assignment of tasks &amp; effects.</p> </div>	<p>Attack Raid Ambush Exploitation Pursuit Break-Out Feint Demonstration Reconnaissance in Force</p>	<p>Defence Delay</p>	<p>Security and Control Support to Security Sector Reform (SSR) Initial Restoration of Services Initial Governance Tasks</p>	<p>Reconnaissance Security Advance to Contact Meeting Engagement Link-up Withdrawal Retirement Relief of Troops in Combat and Encircled Forces March Obstacle Breaching &amp; Crossing</p>
<p>Tactical Tasks and Effects (Not an Exhaustive List)</p>	<p>Destroy Seize Secure Support by Fire</p>	<p>Block Occupy Guard Fix Retain</p>	<p>Cordon and Search Observe/Monitor Vehicle Check Pt Framework Patrols Humanitarian Aid Delivery Train Indigenous Security Forces Crowd Control</p>	<p>Screen Guard Block Secure</p>
<p>Notes:</p> <p>1. Mission statements will be written with both the activity and the task or immediate effect, further described by the purpose, or secondary effect. The activity is not always stated in the mission statement, such as (Attack to) seize (object), in order to...</p> <p>2. Mission statements relating to stability activities and tasks will use the transient verb "conduct" to assign the activity, such as "...will conduct security and control in order to...". This would then be allocated as tactical tasks and effects to subordinates, such as VCPs, framework patrols, etc. At the lower tactical levels, the tactical tasks only may appear in the mission statement, but again continue to use the verb "conduct", such as, "...will conduct framework patrols in order to...", or "... will conduct humanitarian aid delivery in order to...". In this manner, they are similar to mission statements for enabling operations. See STANAG 2287.</p>				

Figure 6-2. Tactical Activities and Tactical Tasks (Not all inclusive)

603. **Four recognized types of Area of operation.**

a. **Contiguous-Linear Battlespace** (e.g. Gulf War – Cold War)

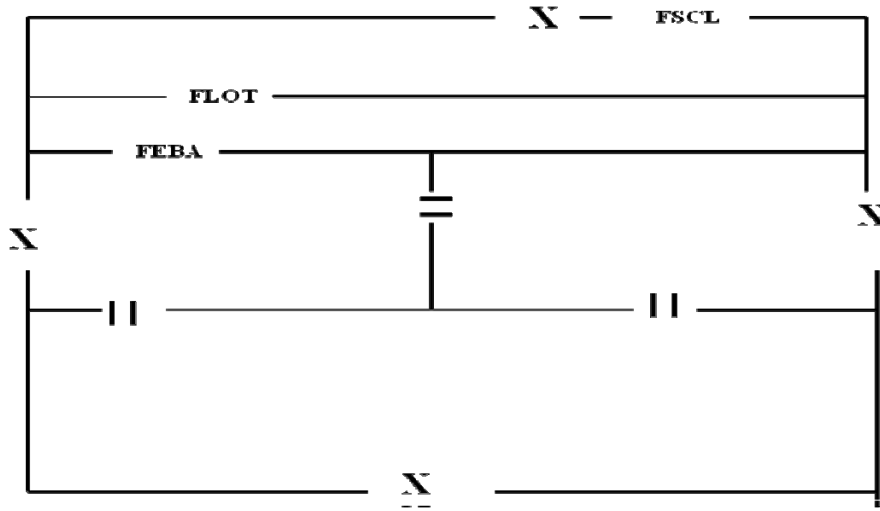


Figure 6-3. Contiguous-Linear Battlespace

b. **Contiguous-Non-Linear Battlespace** (e.g. BOSNIA)

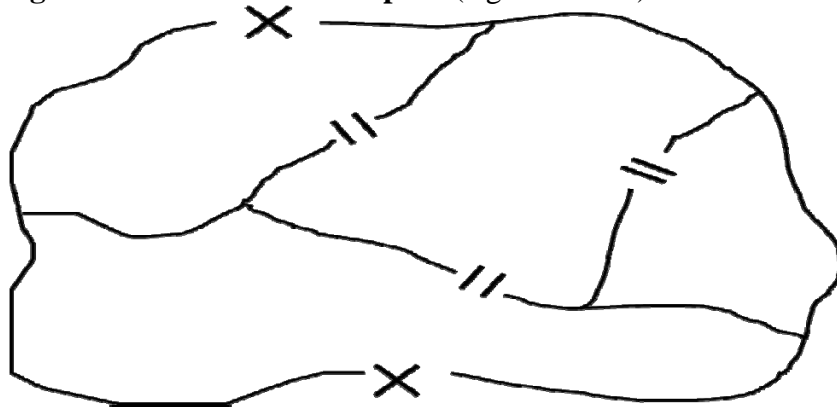


Figure 6-4. Contiguous-Non-Linear Battlespace

c. **Non-Contiguous-Linear Battlespace**

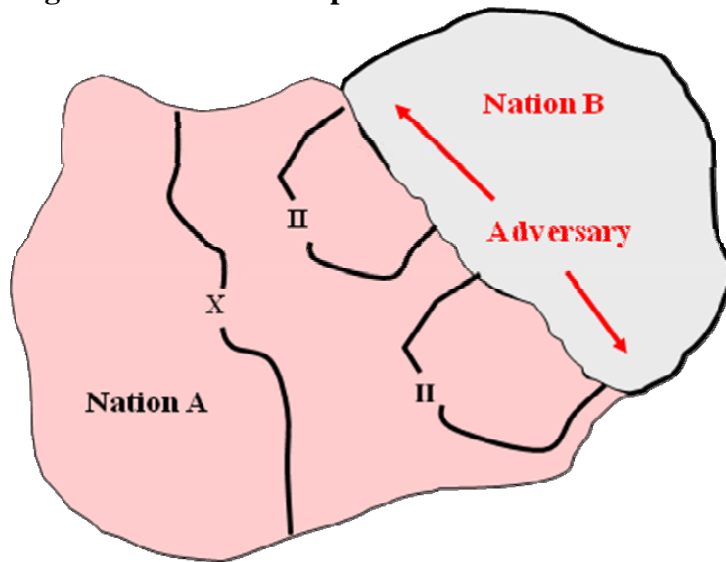


Figure 6-5. Non-Contiguous-Linear Battlespace

d. **Non-Contiguous-Non-Linear Battlespace**

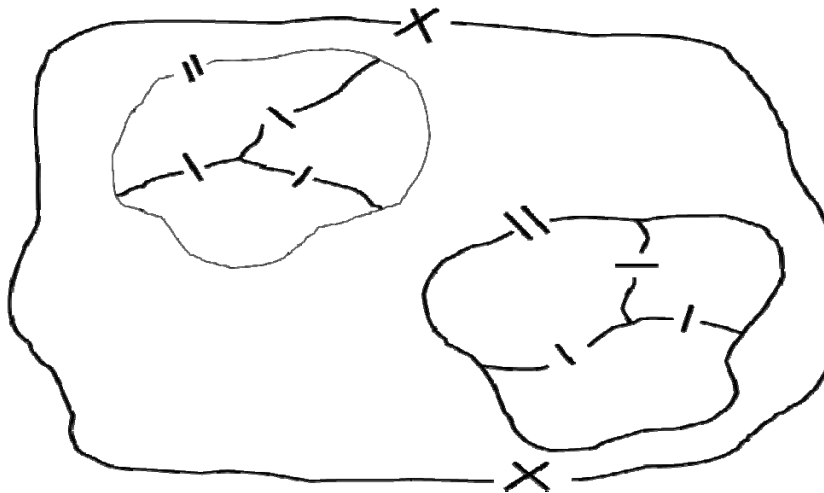


Figure 6-6. Non-Contiguous-Non-Linear Battlespace

**SECTION II - FIRE SUPPORT IN LAND TACTICAL ACTIVITIES**

604. **Foreword.**

- a. All details of the below mentioned tactical activities can be read in ATP 3.2.1.
- b. All the tasks depicted in the paragraphs below will always, when applicable, cover all the indirect fires (lethal or non-lethal) delivered by all available FS platforms and sensors participating to the overall joint campaign.

- c. The JFS sensors will always play a key role in some core functions as contribution to the creation of the Common Operational Picture (COP) and BDA.
- d. All applicable FSCM and ACM must be timely defined / requested / disseminated by all levels to allow speed for operations and to minimize risks of fratricide while not jeopardizing the joint campaign.
- e. The nowadays complex operational environment demands from the sensors and delivery platforms next to traditional area effect, the capability of high precision delivery as well as the capability to deliver fire close to own troop while (need to define the risk estimate distance).
- f. The need for accuracy emphasizes operational requirement to master all elements influencing the ballistic result as well as internal as external (e.g. Met, target and gun grid location).

605. **Operational Framework.**

- a. The Operational Framework provides a means of visualizing operations and aids coordination. It is most commonly used in the formulation and description of courses of action, and hence concepts of operations. The framework is used to describe how the missions of subordinates relate to each other by time, space, function, purpose and geography. It should primarily be viewed in terms of the purpose of the forces involved: what is considered will be decisive, and how other actions relate to that act by shaping conditions or sustaining the force. This is the purposive framework, which should be used for most operations. In some circumstances it may be simpler or clearer to describe operations primarily by their location in relation to the main force. This uses the geographic description of deep, close and rear operations. In straightforward operations, typically at lower tactical levels, operations may be described simply in terms of the Core Functions.
- b. Since the Operational Framework aids the commander in his description of missions to his subordinates, the particular framework used by one commander is not necessarily linked directly to that of another. An operation which is decisive in the execution of one commander's mission might, for example, be a shaping task within his commander's concept of operations. What is important is that each commander can visualize and clearly describe the actions he requires on the battlefield, in the way that he anticipates them unfolding in time, space and desired effect. That is the function of the Operational Framework.

606. **Offensive Activities.**

- a. **General.**  
In an attack, JFS assets may be required to deliver preparatory, covering and defensive fires. These tasks will occur in the close, rear and deep area of operations and may include
  - (1) Provide information from IFS ISTAR assets as part of the intelligence collection plan and the targeting process.
  - (2) Conduct deception fires to confuse the adversary forces as to the location of the objectives,



- (3) Conduct intense and concentrated preparatory indirect fires with available JFSE before and during the initial stages of the attack.
- (4) Conduct suppressive fires to isolate the objective of the main attack and to help fixing adversary forces during supporting attacks.
- (5) Provide suppression to allow attacking formations to close with the adversary forces.
- (6) Conduct Suppression of Enemy Air Defense (SEAD) missions, some of which are appropriate for non-lethal attack assets.
- (7) Provide counter-battery fire to diminish or stop the adversary forces' ability to effectively employ FS.
- (8) Execute deep supporting fire in concert with other assets.
- (9) Deny, through e.g. electronic attack or lethal fires, adversary use of critical C<sup>2</sup>, FS, intelligence systems or any other critical assets/facilities.
- (10) Conduct missions in support of the deception plan.

b. **Attack.**

- (1) Preparation fire is delivered to prepare a target for an assault. It is an intense volume of fire, normally delivered on a time schedule.
- (2) Suppression by direct and indirect fires, electronic attack or smoke on adversary personnel, weapons, or equipment prevents effective fire on friendly forces. Suppression fires help to isolate the objective of the main attack and help to fix adversary forces during supporting attacks. Suppression allows maneuver forces to close with the adversary forces and destroy him with organic direct fire.
- (3) Blocking fires isolate the main objective and fix other forces in the main defensive belt for the supporting attacks. Scatterable Mines (SCATMIN) may be used<sup>20</sup> if necessary; but minefield locations must be coordinated and disseminated to all units.
- (4) Obscuration and screening fires obscure maneuver forces from direct adversary observation. This may be achieved by using smoke and/or jamming.
- (5) Illumination fires may be used to support maneuver forces throughout the battlefield. Possible applications and control of illumination fire are detailed in AArtyP-1.
- (6) SEAD is critical for all operations involving air assets. Air, armed and attack helicopter operations in support of combat operations require SEAD fires against the many antiaircraft systems that may accompany the adversary force's forward elements. SEAD fires may be developed into a program of fires supporting friendly air operations, Joint Air Attack Team (JAAT) operations, and support to air corridors. Electronic attack assets that jam Air Defense (AD) radar systems may execute SEAD. Locating adversary AD weapons and facilities is critical to effective SEAD. Electronic Warfare Support Measures (ESM) and other target acquisition sources should be used to detect and track all relevant SEAD targets. ACM and Phase Line (PL) may be used to coordinate SEAD efforts.
- (7) Deception fires are normally required to support deception operations.
- (8) Counter battery fire is normally aimed against specific adversary FS functions. The destruction, neutralization, and suppression of adversary FS systems should:
  - (a) Prevent the adversary forces from disrupting our attack formations with counter-preparation fire, thus ensuring our freedom of maneuver.
  - (b) Prevent the adversary forces' ability to provide effective counter battery fire which would degrade friendly FS.

---

<sup>20</sup> In accordance with applicable international or national laws or conventions regulating the conduct of armed conflicts.

- (c) Eliminate or reduce the adversary's FS capability to mass indirect fires. Counter battery fire need not be limited to IFS. However, air support, electronic attack, attack helicopters, and NGS, if available, may be used.
- (9) Deep supporting fire. The targeting for deep attack in support of the commander's concept of operations and scheme of maneuver must focus on the adversary's capability to shift resources to defend, reinforce his positions, or counterattack. These fires help block adversary movement of reserves, destroy his Command, Control and Communication (C3) facilities, and prevent the escape of retreating elements.

c. **Raid & Ambush.**

Taking into account the available timeframe, the range of the operating area and the way the force will be projected:

- (1) JFS platforms may support those activities by delivering long distance precision fires (e.g. GMLRS) or deploying some IFS assets in direct support of the combat units.
- (2) JFS sensors will also be involved in the preparation (target acquisition or intelligence collection). The JFS sensors will maintain constant surveillance of the raid objective in order to ensure the adversary situation remains unchanged and within the capabilities of the raiding forces and will afterwards participate in the BDA process.

d. **Exploitation.**

The tasks are almost the same as the one defined in subparagraph "attack" but some considerations have to be highlighted:

- (1) Fires and ISTAR may be directed in depth and also to the flanks and rear.
- (2) Fires should be massed on adversary choke points and key terrain to canalize, slow, and block the adversary movement.
- (3) Suppression fires should be used to fix bypassed adversary pockets of resistance until friendly maneuver elements are safely past and follow-on forces can deal with them.
- (4) Special attention must be given while delivering fires (especially with high dud rate or mines sub munitions) in order to avoid the creation of "undesired" obstacles and barriers to our own forces.
- (5) FS assets should be positioned well forward and displaced continually.
- (6) Some available air assets (e.g. fixed or rotary wing) should be on ground alert.
- (7) FSC should be completed early. On-order measures should be used to facilitate rapid emplacement and movement of assets. Consideration should be given to placing RFLs between the leading force elements and the remainder.
- (8) Sustainment of the force is primarily an exercise in the movement of assets. The ability of the CSS structure to move forward with fuel, ammunition, and maintenance support determines the limits of advance for the force and FS elements.
- (9) Aerial resupply for units in exploitation is a planning option for consideration to sustain the operation.

e. **Pursuit.**

The tasks are almost the same as the one defined in subparagraph "exploitation" but some considerations have to be highlighted:

- (1) Integrated and coordinated use of available ISTAR assets.

- (2) Responsive FS for both encircling and direct pressure forces.
- (3) Provide fires to slow the adversary's retreat and to allow the enveloping force to catch up (If SCATMIN<sup>21</sup> is used to slow the retreat, ensure safety zones are properly disseminated).
- (4) Provide fires to stop reinforcements.
- (5) Use smoke to slow and disrupt the retreat.
- (6) Use hasty planning and engagement procedures to increase responsiveness.
- (7) Provide fires to fix bypassed forces until follow on elements can engage. Consider appropriate FSCM around bypassed pockets of resistance.
- (8) Use air assets for flexible man-in-the-loop terminal control and immediate BDA.
- (9) Plan RFL(s) when necessary between the converging enveloping and direct pressure force.
- (10) Plan for increased petroleum, oil and lubricants (POL) and ammunition usage (use adversary resources when possible).
- (11) Air transportation of supplies may be required.
- (12) Engage C<sup>2</sup> elements with lethal and non-lethal means in order to defeat the adversary will to reorganize.

f. **Break-out.**

- (1) If land FS platforms are included within the encircled forces, they should support the assault element in its attempt to break out and then participate to the security of the perimeter.
- (2) FS platforms from outside should support the break-out operations by delivering high precision fires and the subsequent link-up with friendly forces.
- (3) Available ISTAR assets will help the encircled commander, when possible, and the commander from outside in the elaboration of real time COP and target acquisition.
- (4) Special considerations must be given while delivering JFS with the troops in contact (e.g. danger close procedure for IFS).

g. **Feint and demonstration.**

JFS platforms assist the commander feint and demonstration operations by providing deception or deterrence fires, false Communication and Information System (CIS) transmissions and movement in support of a ruse, feint or demonstration giving a false impression of the commander's intent.

h. **Reconnaissance in force**

- (1) JFS sensors will contribute to the accomplishment of the reconnaissance in force by participating in the elaboration of the COP.
- (2) JFS platforms must also be prepared to deliver lethal or non-lethal fires when the reconnaissance elements engage the adversary forces in order to seize an opportunity or when they are engaged by those forces.

---

<sup>21</sup> See footnote 20.

607. **Defensive Activities.**

a. **General.**

The JFS plan for defensive operations should make provision for the following:

- (1) A security operation forward and to the flanks of the main defense area (MDA), such as a covering force action.
- (2) A continuous deep operation against specific targets and/or organizations within boundaries.
- (3) The main defensive battle is the decisive engagement and is fought in the MDA. It may be conducted as mobile defense or area defense, or both in concert.
- (4) Reserve operations in support of the MDA.
- (5) Rear operations to ensure continuity of support.
- (6) A transition to offensive operations.

b. **Defense.**

The tasks of JFS assets and sensors are:

- (1) To deliver fires during all phases of the defense in support of troops in contact (TIC).
- (2) To attack adversary forces in depth before they can be committed to the main battle.
- (3) To support the covering force.
- (4) To disrupt adversary preparations for attack by engaging its critical elements.
- (5) To separate attacking adversary tanks from dismounted infantry.
- (6) To engage adversary artillery and forward air defense elements.
- (7) To cover barriers, gaps and open areas.
- (8) To neutralize or isolate adversary forces that have penetrated the defensive area.
- (9) To impede the movement of adversary reserves.
- (10) To support counter-attacking forces.
- (11) To assist in battlefield surveillance and target acquisition with a focus on the HPT's.
- (12) To use SCATMIN<sup>22</sup> to block adversary approach routes.
- (13) As a last resort, to defend own gun positions by direct fire.

c. **Delay**

The tasks of JFS assets and sensors are:

- (1) To provide deep supporting and counter battery fire to attack adversary forces at maximum range,
- (2) To support battle positions and strong points,
- (3) To support limited counterattacks,
- (4) To cover or create obstacles, barriers, gaps, and flanks with fires and SCATMIN,
- (5) To organize and position JFS platforms in order to provide uninterrupted FS throughout the delaying operation,
- (6) To cover and screen withdrawals of own troops,
- (7) To provide immediate and accurate support in order to fix the adversary leading elements,
- (8) To mass fires to slow the adversary as he deploys to concentrate for attack of our delay positions,
- (9) To use air assets to help friendly forces disengage and slow advancing adversary forces, particularly to provide opportunities to reposition IFS assets.

---

<sup>22</sup> See footnote 20.

608. **Stability Activities.**

a. **General.**

- (1) Main challenges are the asymmetric threats and continuous shifting in the level of violence or intensity of operations present in the Area of Operations (AOO) that require a force with a highly versatile structure. The JFS elements are also facing huge AOO that is often non linear, non contiguous. As a result, it demands that the commander allocates scarce assets at a very low level providing DS whilst also retaining the capability to carry out deep fires in order to shape the AOO.
- (2) JFS assets assist commanders in carefully balancing deterrent force with combat power to accomplish the stability operation or the support operation and to protect the force.
- (3) The main challenge for JFS assets while delivering lethal effects in stability operations is to minimize collateral damage in order not to jeopardize the long term objective of this kind of operation.  
As a result it stresses the importance of real time and high precision target acquisition process in order to match the requisite, as the need to further develop new munitions with scalable warheads for example.
- (4) Precision munitions provide the commander with an important capability. There is often a need for high precision delivery in order to neutralize pinpoint target close to “neutral” parties or close to own troops in difficult environment (e.g. urban).
- (5) Non-lethal capabilities extend the range of firepower options and are particularly valuable in both stability operations and support operations as they enhance the ability to apply force in proportion to the threat and allow discrimination in its use. They expand the number of options available to confront situations that do not warrant using deadly force but require soldiers to use overwhelming, decisive power to accomplish their missions. Many capabilities exist that create non-lethal effects on personnel or materiel as e.g. irritating, non-penetrating projectiles, high-pressure water devices, smoke, and obscurants.
- (6) JFS assets can also provide deterrent effects e.g. illumination for demonstrating deterrent capability, for observing congested areas, for supporting friendly base security, or in support of patrolling maneuver forces.
- (7) The high decentralization of JFS assets and sensors may require dispersed deployments in insecure environments which may need force protection.

b. **Security and control.**

The tasks are:

With the JFS Sensors:

- (1) To participate to the global monitoring, control, guarding and surveillance of the AOO.
- (2) To contribute to the elaboration of the COP in order to assess how the involved parties respect e.g. buffer, neutral or protected areas.
- (3) To be prepared to engage critical targets in order to show the force or support combat actions.
- (4) To participate to some specific operations e.g. search, convoy in order to be able to conduct fires when necessary.
- (5) To participate in base protection by deploying a warning and counterstrike capability when necessary.

With the JFS Platforms:

- (1) To support the maneuver units with lethal or non-lethal fires while attempting to separate hostile forces or to enforce restricted areas.
- (2) To demonstrate a show of force in e.g. crowd control operations, violation of resolution.
- (3) To deliver warning shots in case of violence escalation in the AOO to demonstrate the resolve of own troops.
- (4) To participate in base protection with lethal or non-lethal capabilities.
- (5) To be the main lethal or non-lethal reserve force for a large set of operations.
- (6) To provide JFS to maneuver units while executing cordon, search, road block, patrol or convoy operations.

c. **Support to security sector reform.**

The tasks of JFS assets and sensors are.

- (1) To act as a mentoring team in order to assist the training of regular armed forces.
- (2) To secure highly critical sites (e.g. disarmament sites).
- (3) To participate in base protection.
- (4) To monitor with JFS sensors the disarmament operations, disbanding of irregular forces as all the movement of demobilized or displaced persons.

d. **Initial restoration of services and initial governance tasks.**

Not applicable except if IFS units are re-rolled in a non core function.

609. **Enabling Activities.**

a. **Reconnaissance.**

The JFS elements will contribute to this operation by gaining information and providing it to the relevant staff elements.

b. **Security.**

- (1) The JFS sensors will provide early and accurate warning of adversary dispositions and activities.
- (2) The screen forces could be reinforced by JFS Sensors in order to gather intelligence and contribute to the target acquisition process.
- (3) Some JFS elements could be part of the guard force in order to contribute to the attrition and the striking of adversary elements.
- (4) In function of the combat power needed for the covering force, some JFSE could allocate in order to contribute to the successful execution of the mission.

Considering JFSE are scarce, the commander must only allocate assets if the potential gain outweighs the potential risk of loss.

c. **Advance to contact.**

- (1) JFS sensors will contribute to situational awareness, assist with the identification of targets on known or suspected adversary locations, danger areas, and support future operations as well as reserves and logistics sites,
- (2) Some JFSE could be prepositioned in the scope of the covering force and/or advance guard in order to be prepared to deliver lethal fires when necessary and to significantly increase the firepower of those elements. Due to the tempo, the elements will not be deployed but ready to react on very short notice,
- (3) JFS platforms could execute deep fires in order to disrupt adversary communications and logistic units or possibly to help the seizing of crossing site, in particular, a bridge or defile,

- (4) JFSE could participate in the monitoring and protection of the flank in support of the flank guard.
- d. **Meeting engagement.**  
Due to the fact it's an unintended action, it's worthwhile to point out that the bottom up approach for JFS will guarantee maximum success by encouraging initiative at the lowest tactical level, reacting with a shortened staff estimate and available timing. A meeting engagement is also an ideal situation in which to make use of SCATMIN<sup>23</sup> to restrict the adversary's freedom of maneuver.
- e. **Link-Up.**  
Detailed coordination is necessary before any JFS engagement due to the presence of friendly converging troops. The emphasis will be on the establishment of FSCM and ACM as well as the use of high precision indirect fires in order to mitigate the risk of fratricide.
- f. **Withdrawal.**  
To support the withdrawal, a maximum number of JFSE should be positioned in order to monitor and deliver fires on the AOO to keep the interference of adversary operations on own troops to the minimum. Specific attention should be given to monitor the movement of adversary troops in order to intervene if a by passing maneuver is detected.  
In this specific situation, we will position Forward Observers (FOs) to overwatch friendly movement.
- g. **Retirement.**  
During a retirement operation the force is out of contact but should be able to react responsively in case of unexpected trouble. A part of JFSE and IFS should be positioned in a way that they can monitor and deliver fires on the AOO. Specific attention should be given to monitor and detect any unattended movement of adversary troops in order to promptly intervene when necessary.
- h. **Relief of troop in combat.**  
(1) **General.**  
(a) Special considerations will be given to global coordination and the handover of all collected intelligence and targets,  
(b) Special attention must also be given for command hand over of the JFSE between supported and supporting forces,  
(c) JFS Commanders must ensure a smooth exchange of standing operating procedures in order to mitigate the risk of misunderstanding,  
(d) A coordinated and synchronized employment plan of the JFS sensors has to be set up in order to provide an accurate and complete COP during the relief operation.  
(2) **Forward passage of lines.**  
The JFSE has to deploy as early as possible on their initial combat positions close to the line of passage without interfering with maneuver units in order to participate in the handover. All the FS elements will closely cooperate and coordinate with their in place elements in order to ensure smooth and efficient support during the operation.

---

<sup>23</sup> See footnote 20.

- (3) **Rearward passage of lines.**

The supporting JFSE should deploy in order to provide supported forces with the maximum of support during the rearward passage of lines. The main challenge for the JFS planners is to minimize the risk of a disrupted FS while the supported JFSE are moving rearward in order to redeploy beyond the relief line and without interfering the withdrawal of relieved maneuver units.
  - (4) **Relief in place.**

The relieving JFSE will be deployed as soon as possible but before the relief in place begins. The combat positions will be coordinated by the relieved commanders. The relieved JFSE will withdraw after the relief of the troop in combat is complete.
  - (5) **Encircled forces.**

The challenge for this operation is to mitigate the risk of fratricide for converging forces by an increased coordination and employment of precision munitions. As a consequence a key role will be played by all the JFS sensors to update permanently the COP and to acquire possible targets with small target location error.
- i. **March.**

In this kind of operation, the main effort will be to monitor the route in order to update the COP and especially identified choke points as e.g. mountain pass, or assessed dangerous area such as the crossing of urban area. Consideration must be given to plan deployment areas alongside the route in order to react responsively with shortened preparation time if the head, flank or rear elements encounter unattended adversary elements.

j. **Obstacle breaching and crossing.**
  - (1) **General.**

Special considerations will be given to the overall coordination problems in this particularly crowded area of operations as well as the collection of accurate intelligence concerning adversary combat position or crossing site location. The identification of HPT e.g. FS assets or C<sup>2</sup> facilities will represent one of the focal point of the targeteer.
  - (2) **Support force.**

The JFSE will be involved in the establishment of an updated COP as well as the preparation and the dissemination of target plans. The main effort will be to fix the adversary defending positions, to participate in the deception plan and to obscure (eventually irritate) when necessary the crossing area in order to hamper the conduct of the adversary defense activities while enabling the breaching one. The JFS platforms positions will allow them to support the whole crossing operations as well as the initial phase of the assault operations to avoid any disrupted fire support.
  - (3) **Breaching force.**

Some JFS sensors and eventually platforms will be embedded in this force in order to be able to conduct all opportunity fires as required in this close combat action.
  - (4) **Assault forces.**

JFSE will be integrated in the assault force, so they can occupy the first combat position after the crossing site allowing the rest of the JFSE to cross under the protection of a consistent FS umbrella.



610. **Specific environments and tactical challenges.**

a. **Limited visibility.**

(1) **General Description.**

Conditions of reduced visibility induced by night, bad weather (e.g. fog, heavy rain, dust) or terrain characteristics (see specific environment description for further details).

(2) **Environmental Consequences for Joint Fire Support.**

In limited visibility conditions, JFS employment could be hampered by limited observation/conduction of fire capability.

(3) **Fire Support Considerations.**

Night vision capability of JFS assets

- (a) for movement,
  - (b) for employment,
  - (c) for conducting and assessing the fires,
  - (d) for resupply,
- has to be considered.

b. **Wood and forest.**

(1) **General description.**

The term 'wood and forest' will be used to describe expanses of terrain which are completely covered by trees or where the majority of the area is wooded and where vehicle movement is largely restricted to roads, clearings and fire breaks, necessitating different tactics to those employed in more open terrain.

(2) **Environmental Consequences for Joint Fire Support.**

In wood/forest environment, JFS employment could be hampered by:

- (a) Reduced tactical mobility.
- (b) Difficult positioning of JFS assets and force protection difficulties due to concealment possibilities.
- (c) Need for support very small scale and dispersed maneuver units.
- (d) Ballistics problems (e.g. high angle, crest clearance, limited munitions capability).
- (e) An increased difficulty to locate target and/or to conduct fire due terrain features, poor visibility, echoes.
- (f) Increased risk of CIS and Global Positioning System (GPS) affiliation problems.

(3) **Fire Support Considerations.**

In order to resolve those challenges, recommendations are:

- (a) The employment of highly mobile JFS assets.
- (b) Planning of firing and observation positions integrating limitations of material resources.
- (c) Considering deployment of JFS assets from individually to multiple assets positions,
- (d) Highlighting employment limitations (e.g. reduced capability for airburst munitions, premature detonation due to thickness canopy, sensors limitations).
- (e) Considering increasing the number of observers, improving general visibility, general situation awareness and observation of fall of shot. This will enable redundancy and a possible reduction of fratricide.
- (f) Deploying relay, directional antennas.

c. **Built up / Urban area.**

(1) **General Description.**

The collective term built-up areas refer to towns, villages, hamlets, industrial areas and the associated infrastructure. The extent of their influence on operations depends on structure, density and size. Built-up areas are normally at road intersections and often form political, cultural and industrial concentrations. Furthermore, the largest part of the population usually lives in built-up areas.

(2) **Environmental Consequences for Joint Fire Support.**

In urban environment, JFS employment could be hampered by:

- (a) Reduced tactical mobility.
- (b) Difficult positioning of JFS assets and force protection difficulties due to concealment possibilities.
- (c) Need for support very small scale and dispersed maneuver units.
- (d) Ballistics issues (e.g. high angle, crest clearance, need for highly technological munitions).
- (e) An increased difficulty to locate target and/or to conduct fire due terrain features, poor visibility, echoes.
- (f) Increased risk of CIS and GPS affiliation problems.
- (g) Presence of non-combatants or protected persons.
- (h) Presence of protected sites or Toxic and/or Industrial and Material sites.

To conclude, we have to mention that there will be an increased number of time sensitive targets.

(3) **Fire Support Considerations.**

In order to resolve those challenges, recommendations are:

- (a) The employment of highly mobile JFS assets for inside positioning and heavy JFS assets for outside positioning.
- (b) Planning of firing and observation positions integrating limitations of material resources as well as difficulties induced by terrain characteristics such as limited cartography, poor visibility, echoes. The use of blue force tracking system.
- (c) Considering deployment of JFS assets from individually to multiple assets positions.
- (d) Highlighting employment limitations (e.g. increased of delay fuze, premature detonation of proximity, increased use of PGM, increased need for scalable munitions, sensors limitations).
- (e) Considering increasing the number of observers, improving general visibility, general situation awareness and observation of fall of shot. This will enable redundancy and a possible reduction of fratricide. This very complex operational environment demands an accurate target acquisition process which requires a wide range of sensors (e.g. FO/FAC, Mini UAV, robots) in order to cross check the collected data. Special attention must be given to grid location and coordination.
- (f) Deploying relay, directional antennas.
- (g) Increasing information campaign and employing loitering munitions in order to mitigate collateral damage.
- (h) Disseminating proper FSCM and ACM in order to decrease risk of unattended effects on protected or dangerous sites.
- (i) The decision cycle (locating – assessing [ROE-clearance of fire-LOAC]-striking) must be shortened in order to seize any fleeting opportunities to strike time sensitive targets.

d. **Cold weather and arctic conditions.**

(1) **General description.**

Cold weather operations involve unique weather and climate considerations. Summer has long periods of daylight; while winter has long nights, deep snow, and extreme cold. Spring thaws turn low-lying areas into a morass of mud, which severely degrades surface mobility. Weather phenomena such as whiteouts and greyouts cause loss of depth perception, which increases the hazards of driving. Ice fogs often form over troop concentrations and disclose their location. The adversary force is equally affected by these extreme conditions of subzero weather and snow.

(2) **Environmental Consequences for Joint Fire Support.**

In cold weather/arctic conditions, JFS employment could be hampered by:

- (a) Reduced tactical mobility.
- (b) Difficult positioning of JFS assets.
- (c) Ballistics problems (subzero munitions limitations, use of WP on snow, limited effectiveness of certain munitions).
- (d) An increased difficulty to locate target and/or to conduct fire due terrain features, poor visibility (greyouts and whiteouts for example).
- (e) Reduced battery life for dismountable assets.
- (f) Reduced CIS performance due to icing antennas.
- (g) Force protection.

(3) **Fire Support Considerations.**

In order to resolve those challenges, recommendations are:

- (a) Winterization of all material resources, the use of self propelled ground FS assets.
- (b) Taking advantage of daylight period for reconnaissance and preparation. Consider also the need for snow clearing in firing positions, ammunition sites and command post.
- (c) Highlighting employment limitations (e.g. subzero limitations munitions, longlasting and increase the use of airburst ammunition, colored smoke ammunition for marking purpose.  
Updating meteorological data frequently due to abrupt changes in temperatures.
- (d) Redundancy and winterization of sensors (e.g. FO, UAV).
- (e) Providing extra and improved battery sets for dismountable equipment.
- (f) Frequently controls of outside part of CIS equipments.
- (g) Equipping material and human resources with winter camouflage piece of equipment.

e. **Desert and hot regions.**

(1) **General description.**

Desert regions are usually located in warm or tropical climate zones, which mean that there is a combined effect of climate and terrain. Deserts consist of large stretches of terrain with a passable surface, fairly flat and relatively uninterrupted by obstacles. There are also areas with great differences in altitude and with steep rock formations, sometimes even in the nature of a low mountain range, and vast sand dunes. The lack of water makes the desert an inhospitable region. It is sparsely populated and has an extremely limited infrastructure. Inhabited areas are few and far between and are only to be found where there is water. The surface conditions away from the few roads require equipment with some degree of off-

road capability, such as tracked vehicles. Vegetation is scarce in the desert, which means that artificial aids have to be used for camouflage.

(2) **Environmental Consequences for Joint Fire Support.**

In desert and hot regions, JFS employment could be hampered/challenged by:

- (a) Rapid, highly mobile warfare conducted over great distances.
- (b) Ballistics problems (abrupt weather changes, enormous differences for night/day temperatures).
- (c) An increased difficulty to locate target and/or to conduct fire due to the absence of prominent landmarks, reliable maps, heat waves, mirages and sandstorms.
- (d) CIS performance due to long distances, high temperature.
- (e) Difficult resupply operation due to e.g. battle tempo, long distances, extreme wear of some pieces of equipment due to extreme high temperature, sand and dust, lack of water and reduced battery life for dismountable assets at night.
- (f) Force protection because of the lack of concealment, isolated engagement, and mutual support.

(3) **Fire Support Considerations.**

In order to resolve those challenges, recommendations are:

- (a) The employment of heavy or medium JFS assets (preferably self propelled). Due to highly mobile warfare and likelihood of airmobile operations, it is also recommend considering deployment of air transportable JFS assets.
- (b) Increasing number of meteorological survey, special care for ammunition storage, increase number of extended range ammunition, increase number PGM.
- (c) The deployment of GPS based sensors coupled with extended use of aerial sensors such as UAV and other ground sensors.
- (d) Deploying retransmission assets, adding complementary cooling systems for temperature sensible equipments.
- (e) Pre-positioning supply dump, encourage aerial re-supply (e.g. airdrop), increase maintenance frequency, provide extra and improved battery sets for dismountable equipment, increased catering allocation (especially water).
- (f) All round surveillance around isolated bases with available sensors, extra personnel to conduct base protection duties in and around the base and adapted camouflage sets.

f. **Operations in mountains.**

(1) **General Description.**

Mountainous operations include many of the same problems found in cold weather regions. Mountainous areas typically have rugged, compartmented terrain with steep slopes and treacherous mobility. Weather may span the entire spectrum from extreme cold with ice and snow in winter to extreme heat during the summer. In mountain operations, the advantages favor the defender, and the focal point is the battle to control the high ground. Infantry units are the most suitable force for this type of combat, particularly when properly supported. Also, the terrain promotes isolated battles that make C<sup>2</sup> difficult. Small-unit commanders often operate semi-independently.

(2) **Environmental Consequences for Joint Fire Support.**

In mountainous terrain, JFS employment could be hampered by:

- (a) Reduced tactical mobility.
- (b) Difficult positioning of JFS assets and force protection.
- (c) Need for support very small scale and dispersed maneuver units.

- (d) Ballistics problems (e.g. high angle, crest clearance, changing meteorology).
- (e) An increased difficulty to locate target and/or to conduct fire due terrain features, poor visibility, echoes.
- (f) Difficult resupply operation.
- (g) Increased risk of CIS problems and GPS affiliation problems.

(3) **Fire Support Considerations.**

In order to resolve those challenges, recommendations are:

- (a) The employment of highly mobile JFS assets and increased employment of airmobile movement.
- (b) Planning of firing and observation positions integrating limitations of material resources as well as danger induced by terrain characteristics such as avalanches.
- (c) Considering deployment of JFS assets from individually to multiple assets positions.
- (d) Highlighting employment limitations (e.g. airburst munitions, subzero munitions limitations, sensors limitations).
- (e) The redundancy of sensors (e.g. FO, UAV).
- (f) Pre-positioning supply and to increase aerial resupply operations.
- (g) Deploying relay, directional antennas.

g. **Operations in jungle and tropical terrain.**

(1) **General Description.**

Jungles are vast tropical forest areas which are often combined with mountainous terrain or swamps. They have extremely dense vegetation with relatively few open spaces. There are virtually no roads in jungles; paths must be cleared and kept open by hacking through vegetation. Because of the dense vegetation, the fields of observation and fire are extremely limited; areas which would normally be designated as key terrain no longer have this value. The larger rivers form good approach routes. The living conditions are tough, not least because of the exhausting climate. Reliable maps are often unavailable or have limited value because of the lack of orientation possibilities. The unfavorable terrain can restrict communications and limit the possibilities for movement. Helicopters are essential for movements and support tasks. High temperatures and humidity take their toll on equipment and soldiers.

(2) **Environmental Consequences for Joint Fire Support.**

In jungle/tropical terrain, JFS employment could be hampered by:

- (a) Reduced tactical mobility.
- (b) Difficult positioning of JFS assets and force protection.
- (c) Need for support very small scale and dispersed maneuver units.
- (d) Ballistics problems (e.g. high angle, crest clearance, premature detonation).
- (e) An increased difficulty to locate target and/or to conduct fire due terrain features, poor visibility, echoes.
- (f) Difficult resupply operation.
- (g) Increased risk of CIS problems and GPS affiliation problems.

(3) **Fire Support Considerations.**

In order to resolve those challenges, recommendations are:

- (a) The employment of highly mobile JFS assets.
- (b) Planning of firing and observation positions integrating limitations of material resources as well as difficulties induced by terrain characteristics such as non reliable cartography, presence of important river or swamp area.

- (c) Considering deployment of JFS assets from individually to multiple assets positions.
- (d) Highlighting employment limitations (e.g. reduced capability for airburst munitions, premature detonation due to thickness canopy, sensors limitations).
- (e) Considering increasing the number of observers, improving general visibility, general situation awareness and observation of fall of shot. This will enable redundancy and a possible reduction of fratricide.
- (f) Pre-positioning supply using all available routes aviation, air drop , boat.
- (g) Deploying relay, directional antennas.

h. **Littoral regions.**

(1) **General Description.**

Littoral regions know many forms of appearance, e.g. big river deltas, swamp areas, fjords, and dunes. Some areas, like coral reefs and fishing areas are environmental protected areas. The importance of littoral regions may increase since the influence that maritime forces can execute is widening due to increased efficiency of naval fire support. The function of a littoral region can also differ in various operations. It can be an assembly/staging area, from where land forces start their operation. Maximum protection against attacks from the sea and land borne attacks is the main priority.

(2) **Environmental Consequences for Joint Fire Support.**

In littoral regions, JFS employment could be challenged by:

- (a) Increased need for liaison with maritime components at all levels of JFSE in order to share COP, synchronize fire support activity.
- (b) CIS interoperability issues.

(3) **Fire Support Considerations.**

In order to resolve those challenges, recommendations are:

- (a) Increased exchange of liaison teams on- and off-shore,
- (b) Interoperability of C4I systems.

i. **Operations in adversary controlled territory.**

(1) **General description.**

These operations may be conducted in conjunction with those of other forces, or independently, deep in adversary occupied territory without a direct link with another force. They will be conducted with emphasis on mobility, evasion and surprise, where offensive action is required, or, on concealment and stealth, where the role is intelligence collection or target acquisition. The forces involved should not allow themselves to be contained by the adversary. In spite of careful planning and preparation, the pattern of operations is normally less predictable than that of any other combat action and so commanders will need extensive freedom of action.

(2) **Tactical Consequences for Joint Fire Support.**

During operations in an adversary controlled area, JFS employment could be challenged by:

- (a) Reduced tactical mobility if the deployed land forces has its own land FS assets as well as the need for support very small scale and far positioned maneuver units.
- (b) Ballistics problems (e.g. long range delivery).
- (c) Difficulty to locate target and/or to conduct fire in function of engagement zone and possibility to deploy sensors.

- (d) Difficult resupply operation for embedded JFS assets.
- (e) CIS problems due to long ranges and eventually GPS affiliation problems in function of operational environment.
- (f) Force protection due to high vulnerability of isolated friendly elements beyond adversary lines.

(3) **Fire Support Considerations.**

In order to resolve those challenges, recommendations are:

- (a) The employment of highly (air)mobile JFS assets for beyond adversary lines deployment and heavy/medium JFS assets to provide deep strike capabilities for the rest of the remaining forces.
- (b) Dissemination of accurate meteorological forecast to enable precision delivery of deep fires.
- (c) Redundancy of sensors e.g. aerial and ground sensors as well as the deployment of human sensors inside of the assigned unit in order to increase target location capability and situational awareness of the isolated AOR.
- (d) Increasing the combat load in order to enhance autonomy and aerial re-supply for the assigned unit.
- (e) Considering to provide assigned unit with satellite communication as well as HF CIS assets.
- (f) Allocation of extra personnel assigned for protection of own troops as well as man packed surveillance system.

j. **Airmobile operations.**

(1) **General description.**

An airmobile operation is an operation in which combat forces and their equipment maneuver across the battlefield by aircraft to engage in ground combat. The formation is designed for a specific mission and normally includes Joint Fire Support Assets. Airmobile forces are particularly well suited to exploit opportunities when speed is essential, distances are great and terrain is restrictive. These forces are used to seize deep objectives and to conduct penetration, covering force, denial, or surveillance operations. The JFS assets are positioned to attack deep targets, to suppress bypassed adversary concentrations or untrafficable terrain, and to help facilitate future operations.

(2) **Tactical Consequences for Joint Fire Support.**

In airmobile operations, JFS employment could be more complex because of:

- (a) Complicated deployment due to air assets availability/capability.
- (b) A need for high degree of collaborative joint planning.
- (c) Difficult C<sup>2</sup> issues (e.g. maximum decentralization).
- (d) Ballistic issues (e.g. long range delivery, unavailable meteorological data).
- (e) The requirement of additional target acquisition assets (e.g. to face adversary indirect fires immediately after landing).
- (f) The difficult resupply operation for JFS assets (e.g. restricted ammunition supply capability).
- (g) CIS problems due to long ranges.
- (h) Force protection.

(3) **Fire Support Considerations.**

In order to resolve those challenges, recommendations are:

- (a) Detailed coordination at all levels for the employment of JFS assets.
- (b) The ECOORD (or FSO when applicable) must consider during the operational planning process the issues associated with staging, loading, air

movement, landing and ground tactical plans which requires aggressive execution, and speed of emplacement.

- (c) Detailed allocation of C<sup>2</sup> cells at the lowest tactical level in order to enable continuous C<sup>2</sup> capability (e.g. increased number of deployed JFSE).
- (d) The dissemination of accurate meteorological forecast to enable precision delivery of deep fires.
- (e) The planning of the coverage by STA assets (e.g. UAV, and weapons locating radars) e.g. to help the counter battery fire effort.
- (f) Planning, prioritizing, and synchronizing initial deployment stocks as well as subsequent resupply with the maneuver plan in order to support the applicable COA.
- (g) Considering the provision of assigned units with satellite communication as well as HF CIS assets in order to ensure communication throughout the area of operations.
- (h) A 6,400-mil (360-degree) capability is required of all indirect fire assets.

k. **Airborne<sup>24</sup> operations (or air assault<sup>25</sup>).**

(1) **General description.**

An airborne operation is a joint operation involving the air movement and deployment of ground forces into an objective area by fixed wing aircraft. Airborne forces are particularly well suited for envelopment or turning movements, attacks to exploit fires on distant objectives, seizure of critical terrain and facilities, mobile reserves, raids, and diversions.

(2) **Tactical Consequences for Joint Fire Support.**

In airborne operations, JFS employment could be more complex because of:

- (a) The inherent limitation.
- (b) A need for high degree of collaborative joint planning.
- (c) Difficult C<sup>2</sup> issues (e.g. transfer of control).
- (d) Limited tactical mobility once landed.
- (e) Ballistic issues (e.g. long range delivery, unavailable meteorological data).
- (f) Difficult target location and/or the conduct of the fire.
- (g) Complexity of planning and executing the fire.
- (h) The difficult resupply operation for JFS assets (e.g. restricted ammunition supply capability).
- (i) CIS problems due to long ranges.
- (j) Force protection.

(3) **Fire Support Considerations.**

In order to resolve those challenges, recommendations are:

- (a) The employment of specialized airdrop suitable JFS assets.
- (b) That the Chief Fire Support Officer must consider during the operational planning process the issues associated with staging, loading, air movement, landing, marshalling and ground tactical plans which requires aggressive execution, and speed of emplacement.
- (c) That during the assault phase of the operation, C<sup>2</sup> must be conducted from an airborne platform. C<sup>2</sup> functions are transferred from the airborne platform to the assaulting force when the assaulting force commander and his Chief Fire Support Officer are on the ground and operational.

---

<sup>24</sup> Airmobile operations (AAP 6) : An operation in which combat forces and their equipment maneuver about the battlefield by aircraft to engage in ground combat.

<sup>25</sup> Air assault operation (ATP 321): Is an operation in which air assault forces (combat, combat support, and combat service support), using the firepower, mobility, and total integration of helicopter assets, maneuver on the battlefield under the control of the commander to engage and destroy enemy forces or to seize and hold key terrain.



- (d) Considerations of advantages/disadvantages (risk) of deploying airborne assets. Once landed the lighter JFS assets will be almost immovable, therefore rapid deployment of towing capabilities is essential.
- (e) The dissemination of accurate meteorological forecast to enable precision delivery of deep fires.
- (f) That initial targeting intelligence must be through strategic assets. Reconnaissance forces may be inserted early in the operation.
- (g) Aerial photography and long range UAVs may be used to provide targeting information during the early phases of the operation.
- (h) During initial stages of airborne operations, aerial observers may be critical target acquisition assets.
- (i) Radars and/or short range UAVs may not be deployed during the initial stages of an airborne operation; however, they should be deployed during follow-on air-land operations,
- (j) That during the initial stages of airborne operations, maneuver commanders may require positive clearance of fires.
- (k) Cratering munitions should not be planned on airfields.
- (l) Air Force or Navy weather assets should be requested to provide early MET support.
- (m) Planning early airdropped or air-landed delivery of ammunition.
- (n) Considering the provision of assigned units with satellite communication as well as HF CIS assets in order to ensure communication throughout the area of operations.
- (o) That a 6,400-mil (360-degree) capability is required of all indirect fire assets. Consider the reinforcement of the JFS assets by a strong local defense team.

1. **Amphibious operations.**

(1) **General description.**

An amphibious operation is an attack launched from the sea by naval, air and landing forces embarked in ships or other craft for the purpose of landing on an enemy shore. A successful amphibious assault achieves surprise and concentrates an overwhelming force at a point of adversary weakness. An amphibious operation is conducted in five phases: planning, embarkation, rehearsal, movement, and assault.

It requires collaborative joint planning in order to integrate seamlessly air and naval strike during the first phase of the assault. The Commander Amphibious Task Force (CATF) ensures that coordinated and integrated naval and air fire support plans are prepared for all phases of the operation and it occurs within the Supporting Arms Coordination Centre (SACC) which is located on the command ship. While afloat, the fire support cell is located with or adjacent to the SACC. Common communications facilities are used until the fire support cell moves ashore.

Responsibility for conduct of operations ashore lies with the landing force commander.

(2) **Tactical Consequences for Joint Fire Support.**

In amphibious operations, JFS employment could be more complex because of:

- (a) Task organization of the assigned land forces.
- (b) Deployment possibility (e.g. protected staging area).
- (c) Difficult C<sup>2</sup> activities (e.g. transfer of authority and reorganization).
- (d) Ballistics issues (e.g. long range delivery, missing availability of Met).

- (e) Possible limited target location capabilities and/or limited availability of observation location.
- (f) Difficult positioning of JFS assets.
- (g) The critical resupply of ammunition during the early stages of battle and the undesired effects of saltwater on equipment.
- (h) CIS problems due to long ranges or to different standards.
- (i) Force protection during the movement ashore.

(3) **Fire Support Considerations.**

In order to resolve those challenges, recommendations are:

- (a) Based on accurate adversary intelligence, real time situational awareness, and maximum employment of boat transport capability, to design the forces with the best possible combat/combat support ratio in order to support overall campaign objective.
- (b) Proper rehearsal for the landing troops in similar environments and choice of forces (light, medium or heavy) that are the more suitable for the disembarkment site.
- (c) That the transfer of Control and Coordination of JFS is transferred from afloat to land when the landing force commander's JFSE is established. The transfer should take place as soon as possible.
- (d) The dissemination of accurate meteorological forecast to enable precision delivery of deep fires. During the early phase of the battle meteorological support may be obtained from navy shipboard meteorological stations.
- (e) That initial targeting intelligence must come from naval, air and strategic sources. Once troops have landed and gained a foothold, ground observers and target acquisition assets can be used as normal.
- (f) That ground indirect fire systems could be positioned on offshore islands to provide fire support for the assault element, when coastal topography and weapon capability permits. Engineer assets may be required to stabilize gun or launcher positions.
- (g) Interservice coordination is necessary to ensure adequate supply and/or logistic activities.
- (h) Equipment and ammunition should be protected from salt water.
- (i) Considering to provide assigned unit with satellite communication as well as HF CIS assets and make sure, that they are interoperable with e.g. the systems of the navy.
- (j) That JFSE should be dispersed throughout the assault elements. Coherent allocation of human and personal resources in order to keep battle readiness at the smallest level (e.g. a gun crew and his gun on the same boat).

m. **Non contiguous, non linear areas.**

(1) **General description.**

In a non contiguous area of operations, subordinate units may operate in isolated pockets, connected only through integrating effects of an effective concept of operations. A non contiguous area of operations places a premium on initiative, effective information operations, decentralized security operations, and innovative logistics measures.

JFS assets must be prepared to conduct full spectrum operations in both contiguous and non contiguous area of operations.

(2) **Tactical Consequences for Joint Fire Support.**

In non contiguous, non linear area of operations, JFS employment could be more complex because of:

- (a) C<sup>2</sup> activities.
  - (b) The need for support isolated maneuver units.
  - (c) The possible absence of mutual support and important size of the LOC.
  - (d) CIS problem due to non contiguous environment.
  - (e) Force protection.
- (3) **Fire Support Considerations.**  
In order to resolve those challenges, recommendations are:
- (a) Detailed allocation of C<sup>2</sup> cells at the lowest tactical level in order to enable continuous C<sup>2</sup> capability (e.g. increased number of deployed JFSE).
  - (b) Considering deployment of JFS assets from individually to multiple assets positions.
  - (c) Increasing self sufficiency and firepower capabilities of isolated units as well as the redundancy employment of JFS assets in the AOR. Finally to provide the units with a much larger number of extended range ammunition and PGM as usual.
  - (d) To position relay stations as well as the provision of satellite communication and HF assets to the far located units.
  - (e) Allocation of extra personnel assigned for protection of own troops (it includes base protection issues).

n. **Asymmetrical threats.**

(1) **General considerations.**

Asymmetric threats occur when an adversary initiates operations against which friendly forces cannot respond effectively due to dissimilar values, organization, training, or equipment. The adversary may use the civilian population and infrastructure to shield their capabilities from fires and maneuver. The enemy may also attack coalition forces and civilian population with weapons of mass destruction (WMD). An adversary employing asymmetrical threats is most likely to be based in and target urban areas to take advantage of the density of civilian population and infrastructure. Other examples of an enemy employing asymmetrical threats include terrorist attacks; EW, to include computer-based systems; criminal activity; guerilla warfare; and environmental attacks.

(2) **Fire Support Considerations.**

Referring to applicable tactical environment, the only complementary recommendations are to increase our real time situational awareness with a large number of sensors (ground and aerial) as well as the use of blue force tracking system in order to deliver precise and timely counterstrike supportive fires.

(INTENTIONALLY BLANK)

## CHAPTER 7

### Combat Service Support (CSS)

#### SECTION I - INTRODUCTION

701. **Aim.** The aim of this chapter is to describe the principles, responsibilities and operation of the Combat Service Support (CSS) system for ground IFS. CSS provides the physical means with which forces operate and contributes to moral cohesiveness. It is the means by which combat power is maintained so that maximum firepower can be concentrated and an operational tempo and intensity be sustained. It encompasses the storage, handling and transportation of supplies, maintenance and repair of materiel, medical care and treatment of casualties, personnel replacement, equipment replacement and the provision of necessary welfare services. Combat supplies must be provided at the right time, in the right quantities, at the right place and in a serviceable condition.

702. **Scope.** The scope of this chapter is the timely provisioning of supplies of all kinds to joint fire support assets. However, the chapter concentrates on ground IFS ammunition resupply, coordination and mutual support (see ATP-3.2). Generic CSS information can be found in AJP-4.

#### SECTION II – PRINCIPLES

703. **General.** CSS provides the foundation of combat power which all arms and services must contribute to as a precondition for a successful employment of their forces. Particularly for ground IFS, as a consumer of bulk supplies, it is essential to cooperate closely with CSS elements. The combat power of a military force which can be applied against an adversary, is constrained by its capability to deliver forces and materiel to the required positions across the range of military operations.

704. **Principles for CSS Planning.** Commanders should consider the following:

- a. Primacy of Operations.
- a. Responsibility.
- b. Authority.
- c. Co-operation.
- d. Co-ordination.
- e. Provision and Sufficiency.
- f. Flexibility.
- g. Simplicity.
- h. Timeliness.
- i. Economy.

- j. Transparency and Visibility.
- k. Synergy.

705. **Multinational CSS Responsibilities and Requirements.** For coalition and combined commands, formal multinational CSS arrangements may not be feasible, but joint command relationships and procedures give commanders an entry position on which to base multinational relationships. Commanders cannot enter into multinational relationships that are contrary to national policy. Nations design their logistic systems to be self-sufficient. Although the sustainment of its forces is each nation's own responsibility, varying degrees of mutual logistic support among nations can be expected. The exchange of logistic support among members of alliances or coalitions can result in significant economies of effort. The commander ensures that assistance is rendered to multinational forces in accordance with assigned responsibilities and as directed by superior headquarters.

706. **Ground Indirect Fire Systems and CSS.** The ECOORD (or FSO when necessary), must anticipate the potential CSS implications of the Commander's guidance and plans. The staff must forecast requirements for additional support. The main issue is likely to be planning the amounts and nature of ammunition and fuel required, the means by which it is to be transported, and where it is to be located or prepositioned. Much of the CSS is similar to that for other arms and services. However, some significant differences should be noted:

- a. In major combat, Ground IFS provides the majority of the firepower. The bulk and weight of ammunition that must be regularly provided are usually far greater than for any other commodity on the battlefield. Therefore, the artillery commander is particularly reliant on CSS. The resupply of ammunition is likely to be one a key planning factor.
- b. Ground IFS ammunition will normally account for a large proportion of a force's transport system capacity. The quantities of ammunition to be moved and handled places great demands on the logistic staff, the transport system and weapon detachments.
- c. Ground IFS units are usually dispersed over wide areas of the battlefield. This creates a considerable challenge for the CSS staff and assets.
- d. The unique flexibility of indirect fire encourages the use of all available assets. The fact that Ground IFS are not normally held in reserve means it requires continuous CSS. Interoperability, particularly of Ground IFS CSS, is therefore a major importance.

707. **Types of Support.** CSS for multinational operations within NATO is based upon National Support Elements (NSE) and/or Multinational Support Elements (MNSE) in conjunction with Host Nation Support (HNS).

- a. **Host Nation Support (HNS).**  
HNS can range from the provision of local services, facilities and non-military supplies to the employment of host nation logistic units to replace similar NATO member country logistic units.

- b. **National Support Element (NSE).**  
A NSE is comprised of the support elements of one nation. It supplies deployment forces or transports supplies to MNSE. NSE may have differing assignments or attachments. Coordination with multinational authorities may be required. Support and supply facilities of the host nation may be utilized.
- c. **Multi-National Support Element (MNSE).**  
A MNSE is made up of assets of several nations. The organization and chain of command depends on the situation.

### **SECTION III - CHAIN OF COMMAND AND LOGISTICS**

708. **General.** The components of a joint and combined force normally operate simultaneously within the theatre and the lines of communication (LOC) approaching the theatre. Coordination of functions among all affected commands, nations, and agencies is essential to avoid confusion and unnecessary duplication. The commanders should provide general guidance, by function and area, wherever needed to ensure unity of effort.

709. **Responsibilities.** The commander is always responsible for CSS. He normally delegates the detailed planning and execution of CSS plans to his staff, but he must be made aware of critical areas that may affect operations and require his personal decisions. In Ground IFS formations, all logistic aspects have to be clearly defined regarding responsibilities, no matter if national or multinational. For CSS tasks the units are typically reinforced with supply and maintenance support elements. Their mission is to ensure the operational readiness of the units in the mobile battle. The tasks may include:

- a. Resupply of Ground IFS ammunition predominates due to its sheer quantity.
- b. Resupply of combat supplies, particularly fuel.
- c. Materiel support.
- d. Equipment support.
- e. Manpower and reinforcements.
- f. Medical support, particularly casualty treatment and evacuation.
- g. Effective utilization of returning transport assets.

### **SECTION IV - GROUND INDIRECT FIRE SYSTEMS AMMUNITION**

710. **General.** The purpose of the ammunition distribution system is to provide ammunition at the right time, place and quantity to ensure the success of the operation. Munitions planning and operations must be flexible and continuous. They must complement combat plans and operations and improve the ability of the supported force to accomplish its mission.

711. **Controlling Ammunition Requirements.** Major operations and deployments create a tremendous demand for the supply and transport of ammunition. Commanders control the flow and usage of ammunition within their areas of responsibility by using ammunition supply rates such as the Required Supply Rate (RSR) and the Available Supply Rate (ASR). For most weapons, these

are expressed in rounds per weapon per day for each nature of ammunition fired by weapon systems. For those weapons that use multiple-round ammunition packages, supply rates are expressed as complete packages per weapon per day, for example Rocket Pod Containers per day for rocket launcher. Commanders may further control expenditure by imposing a modified supply rate, which may be sub-allocated by subordinates.

712. **Multinational Employment of Ground Indirect Fire Systems Ammunition.** It is possible for some NATO members to interchange Ground IFS ammunition. The details of national ammunition interchangeability is outlined in STANAG 4425 (AOP-29 'NATO Indirect Fire Ammunition Interchangeability').

713. **Means of Ammunition Transport.** Various transportation systems are available for the strategic, intra-theatre and tactical movement of Ground IFS ammunition. The use of a specific means of transportation depends on the mission, the time available, equipment availability, the nature of ammunition to be moved, the regional infrastructure, the security of routes, and the distances involved.

## **SECTION V - LOGISTIC PLANNING PROCESS**

714. **General.** The planning process conforms to the logistic principles defined earlier in the chapter. The exchange of logistic support among allies or coalition members should produce significant economies of effort. In the absence of international agreements, the commander must ensure that a consensus is reached on the degree of implementation of multinational logistics (see AJP 4 & ALP 4.2 for further details).

715. **Ground Indirect Fire Systems Logistic Staff Tasks.** The basis for CSS planning is the mission and commander's guidance. The logistic staff element coordinates amongst others on ammunition resupply. Ammunition planning consists of determining and establishing required and controlled supply rates, basic loads, assembling stocks, and resupply procedures needed to sustain the force. Successful ammunition resupply depends on the following:

- a. Careful estimates based on usage, experience, and the intensity of combat anticipated.
- b. The ability of the command to prioritize demands for critical ammunition on the basis of the tactical situation.
- c. A smooth flow of ammunition from rear logistic bases direct to ammunition transfer and supply points and/or firing positions.
- d. Establishment of ammunition resupply routes, which may be prioritized for IFS ammunition.
- e. A clear definition of how non-organic IFS units are resupplied.

716. **Ground Indirect Fire Systems CSS Staff Coordination.** The CSS staff should identify and co-ordinate how the Ground IFS receives its CSS. The CSS for Ground IFS is based on the task organization, the tactical task of each element, locations on the battlefield and the availability of CSS assets. The CSS effort for the Ground IFS is further complicated by the dynamic nature of IFS Systems support. Ground IFS may frequently be supplied from different or multiple support areas because of their tactical task and/or location on the battlefield. Therefore, the CSS staffs at all levels



should facilitate future operations by anticipating future requirements and coordinating the transfer of CSS responsibilities between support areas.

717. **The Logistic Estimate.** The evaluation of the logistic situation is principally the same as the planning process of the commander's staff outlined above. Logistic doctrine details the specific process for the logistic estimate which may be applied to the Ground IFS.

718. **General Planning Considerations for the Primary Operations of War.** When considering the influences on operations of Ground IFS CSS, the commander must consider the principles and responsibilities described as follows:

a. **Offensive activities.**

The key aspiration is to increase the logistical self-sufficiency of the attacking force in order to ensure the timely provision of fuel and ammunition. This implies larger integral echelons. Additional ammunition for major fire plans may need to be pre-dumped on gun positions, with all other ammunition stocks held on transport and kept forward. Consequently, priority on supply routes may need to be allocated for the movement of Ground IFS ammunition. Maintenance must concentrate on repairing battle critical equipment as far forward as possible and recovery of any equipment not repairable in the short term. Casualty evacuation resources may require reinforcing and all transport on the return leg of their loop must be prepared to carry casualties. Exploitation and pursuit operations may involve accepting logistic risk as distances open between the logistic bases and the supported units.

b. **Defensive activities.**

Ground IFS ammunition expenditure against an attacking adversary can be expected to be high. Stocks, particularly of Ground IFS ammunition, have to be built up and compete with defense construction materiel for transport. Decisions regarding the repositioning of ammunition and its security are likely to be critical. Preliminary, main defense battle and subsequent positions should be considered and balanced against the competing requirements for the same logistic assets.

For delay operations complementary considerations are as follows:

- (1) Enhance and extend the logistic self-sufficiency of the Ground IFS supporting the delay operation,
- (2) Stocks may be prepositioned along the direction of movement,
- (3) Within the restrictions of Operation Security (OPSEC), all non-essential vehicles, stocks and supplies from the delaying force should be withdrawn at the earliest opportunity.

c. **Enabling activities.**

Considering the purpose of such operations (as advance to contact, meeting engagement, link up), the main concern for Ground IFS should be to focus on a detailed planning in order to synchronize overall CSS plan with the combat maneuver, to pre-position ammunition and to envisage more frequent ammunition re-supply, to increase aerial resupply operations (especially for light forces), to increase re-supply assets movement rate.

d. **Stability activities.**

It is essential that a flexible and robust ground IFS system is maintained. Ammunition stock levels should be planned upon the worst-case requirement and the friendly COA. This often leads to a requirement for relatively large stocks early stage of stability activities, which may be modified as the operation proceeds. The provision of ammunition for training should be included in planning.

## **ANNEX A**

### **EFFECTS (DEFINITION)**

#### **Physical and functional effects:**

##### **Harassment**

Repeated, deliberate and intimidating activities intended to discourage, impede and disrupt. Those fires are delivered on an irregular timeframe and location with a reduced amount of delivery platforms.

##### **Suppression**

Suppression fires are fires on/or about a weapon system to degrade its performance below the level needed to fulfill its mission objectives. The effect of suppressive fires usually lasts only as long as the fires are continued. Suppression is used to prevent effective fire on friendly forces. It is typically used to support a specified movement of forces.

##### **Neutralization Fire**

Fire delivered to render the target temporarily ineffective or unusable. Neutralization fire results in adversary personnel or materiel incapable of interfering with a particular operation or the accomplishment of a particular course of action.

##### **Destruction**

Destruction fire physically renders an adversary force combat-ineffective unless it is reconstituted, or so damaged that it cannot function as intended nor be restored to a usable condition without being entirely rebuilt.

##### **Terrain effects**

IFS units are able to deliver area and precision effects by employing a wide variety of ammunition.

##### **Psychological effects**

All delivered fires and even the presence of FS assets has a positive effect on own troops besides the classical effects generated on the adversary power. Even if FS assets just fire non-lethal ammunition, friendly forces show their resolve and the readiness to use lethal ammunition if necessary. Psychological effects encompass deter, demoralize, discourage, etc.

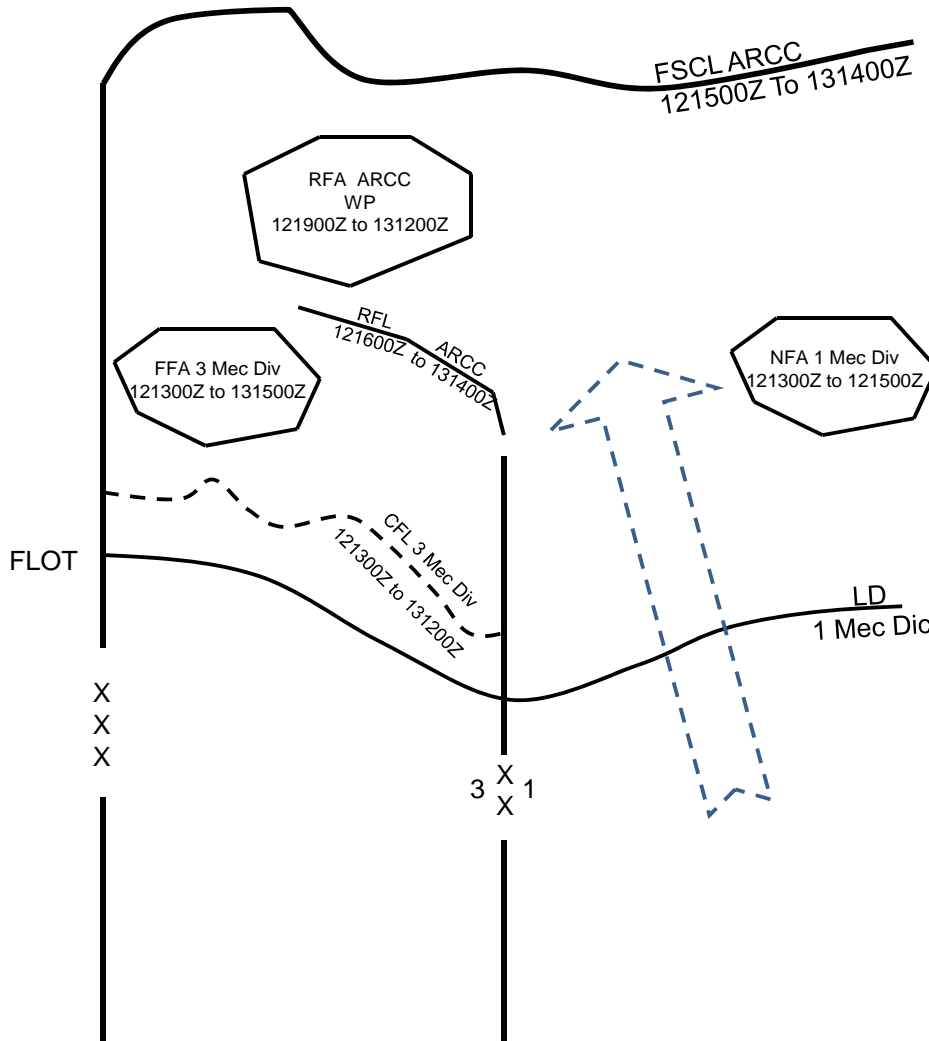
##### **Operational effects**

Those effects are known as e.g. delay, disrupt, defeat, divert, deter, degrade, dislocate, deny, deceive, dissuade, limit, interdict, canalize, isolate, block, area control, separate, fix, contain, compel, obscure, illuminate, coerce, hinder, hamper, contain, turn, neutralize, demonstrate, eliminate, prevent, retaliate, etc.

(INTENTIONALLY BLANK)

**ANNEX B**

**GRAPHICAL REPRESENTATION OF FIRE SUPPORT  
COORDINATION MEASURES (FSCM)**



(INTENTIONALLY BLANK)

## ANNEX C INHERENT RESPONSIBILITIES OF STANDARD IFS TACTICAL MISSIONS

<b>AN IFS UNIT WITH A MISSION OF</b>	<b>DIRECT SUPPORT</b>	<b>REINFORCING</b>	<b>GENERAL SUPPORT REINFORCING</b>	<b>GENERAL SUPPORT</b>
Answers calls for fire in priority from	1. Supported unit 2. Own sensors <sup>1</sup> 3. Force IFS HQ	1. Reinforced IFS 2. Own sensors <sup>1</sup> 3. Force IFS HQ	1. Force IFS HQ 2. Reinforced unit <sup>1</sup> 3. Own sensors <sup>1</sup>	1. Force IFS HQ 2. Own sensors <sup>1</sup>
Has as its zone of fire	Zone of action of supported unit	Zone of fire of reinforced IFS unit	Zone of action of supported unit to include zone of fire of reinforced FA unit	Zone of action of supported unit
Furnishes FS personnel	Provides temporary replacements for casualty losses as required	No requirement	No requirement	No requirement
Establishes communication With	Directly supported maneuver unit	Reinforced IFS unit HQ	Reinforced IFS unit	No requirement
Establishes liaison with	Directly supported formation/unit	Reinforced IFS Unit	Reinforced IFS Unit	No requirement
Allocates sensors <sup>2</sup>	Observers to maneuver element and sensors assets to the directly supported unit	No inherent requirement	No inherent requirement	No inherent requirement
Is positioned by	DS IFS unit commander or as ordered by force IFS HQ	Reinforced IFS unit or as ordered by force IFS HQ	Force IFS HQ or reinforced IFS unit if approved by force IFS HQ	Force IFS HQ
Has its fires planned by	Develops own fire plan in close cooperation with supported unit	Reinforced IFS unit HQ	Force IFS HQ or as otherwise specified	Force IFS HQ

<sup>1</sup> Includes all target acquisition means or personnel deployed.

<sup>2</sup> As a result of military decision making process.

(INTENTIONALLY BLANK)



## **GLOSSARY**

### **A**

-

### **B**

#### **Battle Damage Assessment (BDA)**

The estimate of physical, functional, and target system damage resulting from the application of military force, either lethal or non-lethal, against a predetermined objective (ACE 65-8). It tries to answer the next questions:

Target hit? - Extent of damage? Tactical Objective met?

Physical Damage Assessment is an estimate of the quantitative extent of physical damage to a target resulting from the application of military force. Occurs within 4 hours after attack and executed by the requester. Allow to know if Target has been hit and to provide re-attack guidance. Functional Damage Assessment is the reviews physical damage assessments and amplifies the initial analysis by providing an estimate of the effect of military force on degrading/destroying the functional or operational capability of the target to perform its intended mission. The level of success is based upon the operational objectives against the target. It is based an all sources of intelligence reports and data. Expected within the 12 hours.

Target System BDA is an assessment of damage to a complete target system, (sometimes referred to as a target set), e.g. an air defense network. The primary consideration in this case is assessing the overall operational capability of the target system, based upon the compilation of functional damage assessments of individual targets within the system. The Joint Force Commanders BDA Fusion Cell should normally carry out this assessment. These reports are expected between 12 hours and up to 3-4 days after an attack. Only at very high level. In some nations these assets are not belonging to artillery.

### **C**

#### **Coordinated Fire Line (CFL)**

The CFL is a line beyond which conventional, indirect, surface fire support means may fire at any time within the boundaries of the establishing headquarters without additional coordination.

#### **Coordination of Fire Support**

The planning and executing of fires must ensure that targets are adequately covered by a suitable weapon or group of weapons.

**(This term is a reviewed definition of Fire Support Coordination and it will be recommended to modify it in AAP-6)**

### **D**

#### **Deconfliction of JFS**

Coordination of the battlespace (air, naval and land environment) conducted by the JFSE to optimize the use of JFS assets in order to allow safe freedom of movement and delivery of fires and effects. Measures taken for the safeguarding of all fire support elements by mitigating the risk of fratricide by a seamless integration of fires delivered concurrently or simultaneously by air, naval and land fire support elements on a unique or on multiple targets.

**Direct Support (DS)**

DS is the support provided by a unit not attached to or under the command of the supported unit or formation, but required to give priority to the support required by that unit or formation.

**E**

**Effects Coordinator (ECOORD)**

The ECOORD is the advisor at brigade level and above in all JFS matter.

**(This term is a new term and definition and it will be recommended for inclusion in AAP-6)**

**F**

**Fire Support Coordination Line (FSCL)**

Within an assigned area of operations, a line established by a land or amphibious force commander to denote coordination requirements for fires by other force elements which may affect the commander's current and planned operations. The FSCL applies to fires of air, ground or sea weapons using any type of ammunition against surface or ground targets. The establishment of the fire support coordination line must be coordinated with the appropriate commanders and supporting elements. Attacks against surface or ground targets short of the fire support coordination line must be conducted under the positive control or procedural clearance of the associated land or amphibious force commander. Unless in exceptional circumstances, commanders of forces attacking targets beyond the FSCL must coordinate with all affected commanders in order to avoid fratricide and to harmonize joint objectives. Note: in the context of this definition the term "surface targets" applies to those in littoral or inland waters within the designated area of operations.

**Fire Support Officer (FSO)**

The FSO is the advisor of the maneuver element at company or BG (battle group) level in all JFS matter.

**(This term is a new term and definition and it will be recommended for inclusion in AAP-6)**

**Fire Support Task (FST)**

A fully developed Fire Support Task includes a task, purpose, method, and effects. The task describes what targeting objectives (e.g. delay, disrupt, limit, harass or destroy), fires must achieve on an adversary capability. The purpose describes why the task contributes to maneuver. The method describes how the task will be accomplished by assigning responsibility to observers or units and delivery assets and providing amplifying information or restrictions. Typically the method is described by covering three categories: priority, allocation, and restrictions. Effects quantify successful accomplishment of the task.

**Free-Fire Area (FFA)**

The FFA is a specific designated area into which any weapon system may fire without additional co-ordination with the establishing headquarters.

**G**

**General Support (GS)**

GS is a support which is given to the supported force as a whole and not to any particular subdivision thereof.

**General Support and Reinforcing (GSR)**

GSR is a tactical task in which an indirect fire system unit fires in support of the force as a whole and, on a secondary basis, provides reinforcing fire for another artillery unit.

**(This term is a reviewed definition and it will be recommended to modify it in AAP-6)**

**H**

-

**I**

**Indirect Fire System (IFS)**

IFS is a system of systems, the main characteristics of which are its 24/7, all weather capability to acquire targets and achieve effects over a wide area and in depth. It should be able to deliver area and precision munitions. **(This term is a new term and definition and will be recommended for inclusion in AAP-6)**

**J**

**Joint Fire Support (JFS)**

Joint Fire support is the coordinated and integrated employment of all weapon platforms delivering fires (It includes land, air, naval delivered indirect fires) to achieve the required effects on ground targets to support land operations in the full spectrum of conflict. It encompasses the integration of indirect fires and effects in order to influence the adversary forces, installations or functions.

**(This term is a new term and definition and will be recommended for inclusion in AAP-6)**

**Joint Fire Support Element (JFSE)**

The Joint Fire Support Element (JFSE) is the artillery led element responsible at all levels for the overall planning, coordinating and employment of all allocated JFS assets. It is the single point of contact for Joint Fire Support coordination at all levels. This element should always be tailored to the mission and to the level of force and reinforced by all necessary liaison cells as required.

**(This term is a new term and definition and will be recommended for inclusion in AAP-6)**

**K – L – M**

-

**N**

**No-Fire Area (NFA)**

The NFA is an area into which no fires or the effects of fires are allowed except if temporarily authorized by establishing authority or if an adversary force within this area engage our forces.

**O**

-

**P**

**Permissive Measures**

Measures which have the purpose of facilitating the attack of targets. With the establishment of a permissive measure, no further coordination is required for the engagement of targets affected by the measure.

**Q**

-

**R**

**Reinforcing (R)**

R is a tactical mission in which one indirect fire system unit augments the fire of another indirect fire system unit.

**(This term is a reviewed definition and will be recommended to modify it in AAP-6)**

**Restricted Fire Area (RFA)**

The RFA is an area in which specific restrictions are imposed and in which fires that exceed those restrictions are not delivered without co-ordination with the establishing headquarters.

**Restrictive Fire Line (RFL)**

The RFL is a line established between converging friendly forces (one or both may be moving) that prohibit all fire or effects from fires across the line without coordination with the affected force.

**Restrictive Measures**

Measures which have the purpose of providing safeguards to friendly forces or objects. The establishment of a restrictive measure imposes certain requirements for specific coordination prior to the engagement of those targets affected by the measure.

**S – T – U – V – W – X – Y - Z**

-

## LIST OF ACRONYMS AND ABBREVIATIONS

### A

<b>ACM</b>	Airspace Control Means
<b>AD</b>	Air Defense
<b>ADCON</b>	Administrative Control
<b>AI</b>	Air Interdiction
<b>AOO</b>	Area of Operations
<b>AOR</b>	Area of Responsibility
<b>ASFAO</b>	Anti Surface Force Air Operation
<b>ASR</b>	Ammunition Supply Rate

### B

<b>BDA</b>	Battle Damage Assessment
<b>Bde-JFSE</b>	Brigade Joint Fire Support Element
<b>BG</b>	Battle Group
<b>BG-JFSE</b>	Battle Group Joint Fire Support Element

### C

<b>C UAV</b>	Combat Unmanned Aerial Vehicle
<b>C<sup>2</sup></b>	Command & Control
<b>C2IS</b>	Command & Control and Information System
<b>C<sup>3</sup></b>	Command, Control and Communication
<b>CAS</b>	Close Air Support
<b>CATF</b>	Commander Amphibious Task Force
<b>CCA</b>	Close Combat Attack
<b>CCF</b>	Course Correcting Fuze
<b>CFL</b>	Coordinated Fire Line
<b>CIMIC</b>	Civil-Military Cooperation
<b>CIS</b>	Communication and Information System
<b>CNO</b>	Computer Network Operation
<b>COA</b>	Course of Action
<b>COIN</b>	Counter-Insurgency Operations
<b>COP</b>	Common Operational Picture
<b>Coy-JFSE</b>	Company Joint Fire Support Element
<b>CSS</b>	Combat Service Support

### D

<b>D3A</b>	Decide, Detect, Deliver & Assess
<b>DIRLAUTH</b>	Direct Liaison Authority
<b>DS</b>	Direct Support

### E

<b>ECOORD</b>	Effects Coordinator
	LOAA - 1

**ESM** Electronic Warfare Support Measures  
**EW** Electronic Warfare

**F**

**FAC** Forward Air Controller  
**FFA** Free-Fire Area  
**FO** Forward Observer  
**FSC** Fire Support Coordination  
**FSCL** Fire Support Coordination Line  
**FSCM** Fire Support Coordination Measures  
**FSO** Fire Support Officer

**G**

**GLE** Gun Location Error  
**GPS** Global Positioning System  
**GS** General Support  
**GSR** General Support Reinforcing

**H**

**HNS** Host Nation Support  
**HPT** High Pay-off Target

**I**

**IA** Interdiction Attack  
**IFS** (Land-based) Indirect Fire System(s)  
**INFOSEC** Information Security  
**IO** Information Operation  
**IPB** Intelligence Preparation of the Battlefield  
**ISR** Intelligence, Surveillance, Reconnaissance  
**ISTAR** Intelligence, Surveillance, Target Acquisition, Reconnaissance

**J**

**JAAT** Joint Air-Attack Team  
**JFS** Joint Fire Support  
**JFSE** Joint Fire Support Element  
**JOA** Joint Operations Area  
**JPTL** Joint Prioritized Target List

**K**

-

**L**

**LCC** Land Component Command(er)  
**LEGAD** Legal Advisor  
**LGP** Laser-Guided Projectile  
LOAA - 2

<b>LM</b>	Loitering Munitions
<b>LOAC</b>	Laws Of Armed Conflicts
<b>LOC</b>	Line Of Communication

**M**

<b>MDA</b>	Main Defense Area
<b>MET</b>	Meteorological
<b>METGM</b>	Meteorological Gridded Message
<b>MNSE</b>	Multinational Support Element

**N**

<b>NFA</b>	No -Fire Area
<b>NGS</b>	Naval Gunfire Support
<b>NSE</b>	National Support Element

**O**

<b>OPCOM</b>	Operational Command
<b>OPCON</b>	Operational Control
<b>OPSEC</b>	Operation Security

**P**

<b>PAO</b>	Public Affair Officer
<b>PGM</b>	Precision Guided Munitions
<b>PL</b>	Phase Line
<b>PME</b>	Peace Military Engagement
<b>POL</b>	Petroleum, Oil and Lubricants
<b>POLAD</b>	Political Advisor
<b>PSO</b>	Peace Support Operations
<b>PSYOPS</b>	Psychological Operations

**Q**

-

**R**

<b>R</b>	Reinforcing
<b>RFA</b>	Restricted Fire Area
<b>RFL</b>	Restricted Fire Line
<b>ROE</b>	Rules of Engagement
<b>RSR</b>	Required Supply Rate

**S**

<b>SACC</b>	Supporting Arms Coordination Center
<b>SCATMIN</b>	Scatterable Mine
<b>SEAD</b>	Suppression of Enemy Air Defenses

LOAA - 3

**STA** Surveillance, Target Acquisition

**T**

**TACOM** Tactical Command  
**TACON** Tactical Control  
**TACP (ALO)** Tactical Air Control Party Air Liaison Officer  
**TACP (FAC)** Tactical Air Control Party Forward Air Controller  
**TACP** Tactical Air Control Party  
**THP** Terminally Homing Projectile  
**TIC** Troops In Contact  
**TLE** Target Location Error  
**TNL** Target Nomination List  
**TTP** Tactics, Techniques & Procedures

**U**

**UAV** Unmanned Aerial Vehicle

**V**

-

**W**

**WAC** Weather Analysis Centre  
**WMD** Weapon of Mass Destruction

**X-Y-Z**

-