FOREWORD

1. The aim of this Malaysian Armed Forces Joint Doctrine Publication (MAFJP) 5-01.3 is to lay down the basic understanding and mechanics on Joint Logistics Planning Process (JLPP). It must go along with MAFJP 5-01.1 Joint Military Appreciation Process (JMAP) handbook. It is designed to assist logistics staff officers to conduct logistics appreciation in the planning process. It is a guide for logistics staff officers who are going to work and operate in joint service organisation of joint and combined operation environment.

2. This publication is concerned with the application of the JLPP and Joint Logistics Orientation (JLO) across the spectrum of conflicts including Military Operations Other Than War (MOOTW). Both individual and staff decision-making are addressed, including the logistics system of applying the process to produce viable and supportable joint plans. It provides military logistics guidance and understanding the concept of JLPP and JLO for the Malaysian Armed Forces (MAF) in preparing their appropriate supporting plans to support joint operations. JLPP output is a Concept of Logistics Support (COLS) that will support Course of Action (COA) to enable Joint Operation Planning Group (JOPG) to produce Concept of Operations (CONOP) with regard to Joint or Combined Operational Planning. JLPP is conducted by Joint Operation Planning Group (JLPG) that supports the JOPG which planning works concurrently.

3. This publication is specially produced for the MAF by Pusat Peperangan Bersama (PESAMA) for all joint operation and training in the MAF. Officers and non-commissioned officers should use this handbook as a reference and foundation for the execution of JLPP and JLO. It contains explanations and examples on the application of JLPP and JLO tools and techniques.

4. Finally, it must be read, understood and practiced regularly for it to be an effective tool to a coherent approach to Joint or Combined Operations, planning and appreciation. It is essential that all professional officers of the MAF take cognisance of this booklet to enhance their knowledge on joint planning.

28 Jan 19

TAN SRI DATO' SERI PANGLIMA ~~HAJI~~ ZULKIFLI BIN HAJI ZAINAL ABIDIN
Gen
Chief of Defence Force

CONDITIONS OF RELEASE

1. This publication contains classified information. It is to be safeguarded under rules designed to give the same standard of security as maintained by the Government of Malaysia for information of similar classification.

2. It is not to be released to another country without the consent of the MAF HQ.

3. It is not to be used for other than military purposes.

4. It is not to be divulged to a non-security organisation unless authorised by MAF HQ.

PREFACE

1. **Scope**. This publication sets forth procedural guidance governing the application of operational planning and decision-making process at joint level.

2. **Purpose**. This publication sets the details in the usage of Joint Logistics Planning Process (JLPP) in the joint activities and performance of MAF.

3. **Application**.

a. The guidance established in this publication apply to the Commanders of Joint Force Headquarters, Joint Task Forces Headquarters and may also apply when significant forces of one service are attached to forces of another service or when significant forces of one service support forces of another service.

b. This publication is authoritative but not directive. Commanders will exercise judgment in applying the procedures herein to accomplish their missions. This procedure should be followed except when, in the judgment of the commanders dictate otherwise. If conflicts arise between the contents of this publication and the contents of Service publications, this publication will take precedence for the activities of joint forces unless the Chief of Defence Force in coordination with the other members of Joint Chief Committee has provided more current and specific guidance.

MAFJP 5-01.3

AMENDMENT CERTIFICATE

Proposals for amendments and additions to this publication are to be forwarded through normal service channels to the Bahagian Operasi dan Latihan Pertahanan, Markas Angkatan Tentera Malaysia. A copy of the proposals is also to be forwarded to:

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ABBREVIATIONS AND ACRONYMS

AII	Area of Intelligence Interest
AIR	Area of Intelligence Responsibility
ALI	Area of Logistics Interest
ALIO	Area of Logistics Interest Overlay
ALOC	Air Lines of Communication
AO	Area of Operations
AOE	Analysis of the Operating Environment
ACOS	Assistant Chief of Staff
APOD	Air Point of Disembarkation
APOE	Air Point of Embarkation
CAP	Combat Air Patrol
CC	Critical Capability
CCIR	Commander's Critical Information Requirements
CDF	Chief of Defence Force
CDP	Commander’s Decision Point
CF	Critical Factor
CIMIC	Civil-Military Cooperation
CIS	Communication and Information Systems
CLE	Critical Logistics Event
COA	Course of Action
CoA	Chief of Army
COG	Centre of Gravity
CONOP	Concept of Operations
CONPLAN	Contingency Plan
COLS	Concept of Logistics Support
COS	Chief of Staff
CPG	Commander’s Planning Group

CR	Critical Requirement
CV	Critical Vulnerability
DOS	Days Of Supply
DP	Decisive Point
DLD	Defence Logistics Division
DSM	Decision Support Matrix
EEFI	Essential Elements of Friendly Information
estb	Establish
EW	Electronic Warfare
FE	Force Elements
FFIR	Friendly Force Information Requirement
FMB	Forward Mounting Base
FOB	Forward Operating Base
GSE	Ground Support Equipment
HNS	Host Nation Support
HQ	Headquarters
IE	Intelligence Estimate
I&W	Indications and Warning
IO	Information Operations
IR	Information Requirements
ISR	Intelligence, Surveillance and Reconnaissance
IT	Information Technology
JFC	Joint Force Commander
JFCC	Joint Force Component Commander
JFAO	Joint Force Area of Operations
JIPOE	Joint Intelligence Preparation of the Operational Environment
JLPP	Joint Logistics Planning Process
JLPG	Joint Logistics Planning Group

JLG	Joint Logistics Group
JLO	Joint Logistics Orientation
JMAP	Joint Military Appreciation Process
JOP	Joint Operational Planning
JOPG	Joint Operational Planning Group
JOPP	Joint Operational Planning Process
JTF	Joint Task Force
JTFC	Joint Task Force Commander
JTFHQ	Joint Task Force Headquarters
LAOE	Logistics Analysis Operational Environment
LOAC	Law of Armed Conflict
LOC	Lines of Communications
Log	Logistics
LOGFAT	Logistics Fact, Assumption and Task
LOO	Line of Operation
LOTS	Logistics Over The Shore
MAF – DLD	Malaysian Armed Forces – Defence Logistics Division
MAF – PSD	Malaysian Armed Forces – Personnel Staff Division
MAF - HSD	Malaysian Armed Forces – Health Service Division
MD	Most Dangerous
ML	Most Likely
MN	Multi National
MSE	Military Strategic Estimate
MSR	Main Supply Route
MTL	Master Target List
MHE	Material Handling Equipment
NAI	Named Area of Interest
NATO	North Atlantic Treaty Organisation

NATPOL	National Policy
NGO	Non-Governmental Organisation
NSB	National Support Base
OE	Operating Environment
OGD	Other Government Department
MOOTW	Military Operations Other Than War
Op Instr	Operation Instruction
OPLAN	Operation Plan
OpO	Operation Order
OPSEC	Operations Security
ORBAT	Order of Battle
PIR	Priority Intelligence Requirement
POL	Petroleum, Oils and Lubricants
POD	Point of Disembarkation
POE	Point of Embarkation
PSYOP	Psychological Operation
RAP	Recognised Air Picture
RAS	Rear Area Security
RASP	Recognised Air-Surface Picture
RMP	Recognised Maritime Picture
ROE	Rules of Engagement
RORO	Roll On Roll Off
SLOC	Sea Lines of Communication
SLPG	Strategic Logistics Planning Group
SOP	Standard Operating Procedure
SPOD	Sea Point of Disembarkation
SPOE	Sea Point of Embarkation
SME	Subject Matter Expert

TAI	Target Area of Interest
UN	United Nations
UPS	Universal Power System
WngO	Warning Order

GLOSSARY OF TERMS

Administration. The management and execution of all military matters not included in tactics and strategy, primarily in the field of logistics and personnel management.

Adversary. A party acknowledged as potentially hostile to a friendly party and against which the use of force may be envisaged.

Approved Foreign National. A person who, by virtue of their nationality, is deemed eligible for evacuation by Malaysian Armed Forces.

Area of Interest (AI) or Area of Intelligence Interest (AII). That area of concern to the commander, including the area of influence, areas adjacent thereto, and extending into enemy territory the objectives of current or planned operations. This areas occupied by enemy forces who could jeopardize the accomplishment of the mission. In terms of intelligence, a commander will have a requirement for intelligence and information of the area of interest for both current and future operations

Area of Logistics Interest (ALI). The areas that are of interest to the component or force commander; the location of friendly and enemy forces, and the capabilities that may be an advantage, the infrastructure, and key terrain that concern the commander. The size of the area of logistics interest normally exceeds the commander’s operational reach.

Area of Intelligence Responsibility (AIR). An area allocated to a commander in which the commander is responsible for the provision of intelligence within the means at the commander's disposal.

Assumption. An assumption on the current situation or a presumption on the future course of events, either or both assumed to be true in the absence of positive proof, necessary to enable the commander in the process of planning to complete an estimate of the situation and make a decision on the course of action.

Assigned Forces. Forces-in-being which have been placed under the operational command or operational control of commander.

Assistant Chief of Staff (ACOS). A subordinate to COS that control his/her department staff without the power of command.

Administrative Orders. An order covering traffic, supply, maintenance, evacuation, personnel and other administrative details.

Battle Space. The geographic locality that contains the environmental and non-environmental domains environment, factors, and conditions that must be understood to successfully apply combat power, protect the force or complete the mission. The environmental domains are sea, land, air and space. The non-environmental domains are the information domain, electromagnetic spectrum and time. Factors and conditions include adversary and friendly forces, neutrals, facilities, weather, and terrain within the area of operations and area of interest which include the following:

a. **Deep**. Area in which the enemy draws its strength. The Deep area is an area designated away from the Close area for the purpose of shaping enemy forces prior to their arrival in the Close area. Thus, the Deep area relates to the Close area not proximity, but also in terms of time and space. Advanced information technology and modern weapons systems continue to increase the pertinence and lethality of conducting operations in a Deep

area. In the past, deep strikes were aimed at slowing and disrupting the advance of adversary forces, Strike forces may engage and defeat entire formations at substantial distances from the Close area via joint or services lethal effects. This capability gives the strike a greater depth and allows for simultaneous action.

b. **Close**. Area in which the area of operations will be set. The Close area is that area where the commander envisions close combat taking place or being imminent. Close combat includes the activities of forces in direct support of the elements engaging in close combat. Within the Close area, the commander synchronises overmatching effects with the intent of using manoeuvre and direct supporting fires in decisive action. Within Close area, one JTF will be designated as the main effort, while other units are supporting efforts.

c. **Rear**. Area in which the friendly force draws its strength. Rear areas are those areas behind Close areas that are normally designated for support activities. The Rear area may be contiguous with combat areas or may be geographically separated from them. Operations in Rear areas assure freedom of action and continuity of operations, sustainment and C^2. The forces designated in Rear area has the ability to conduct Rear Areas Security (RAS) operations over a large geographic region. In essence, Rear areas are those locations from which sustaining operations occur.

Branch. A contingency option built into the basic plan. Note: A branch is used for changing the orientation, or direction of movement of a force to aid success of the operation based on anticipated events, opportunities, or disruptions caused by adversary actions and reactions.

Campaign Planning. Planning that integrates both deliberate and immediate planning processes and seeks to orchestrate the ways for tactical means to achieve strategic ends.

Centre of Gravity. A characteristic, capability or locality from which a military force, nation, alliance or other grouping derives its freedom of action, strength or will to fight. A centre of gravity consists of a number of critical factors.

Chief of Staff. The senior or principal member or head of a staff, or the principal assistant in a staff capacity to a person in a command capacity; the head or controlling member of a staff, for purposes of the coordination of its work; a position that in itself is without inherent power of command by reason of assignment, except that which is invested in such a position by delegation to exercise command in another's name.

Civil-Military Cooperation. The coordination and cooperation, in support of the mission, between the Commander and civil actors, including the national population and local authorities, as well as international, national and non-governmental organisations and agencies.

Coalition. An arrangement between forces of two or more nations, which are not all allies, acting together to accomplish a mission.

Combined. Between two or more forces or agencies of two or more allies.

Commander's Critical Information Requirements. Comprise information of requirements identified by the commander as being critical in facilitating timely information management and the decision-making process that affect successful mission accomplishment. The two key sub-components are critical friendly force

information and priority intelligence requirements.

Commander's Decision Point. A point in time and space when the commander or staff anticipates in making a key decision concerning a specific course of action. Must be offset from the point where the action has to take place, in order to allow sufficient lead-time for action to be initiated.

Commander's Intent. A formal statement, usually in the concept of operations or general outline of orders, given to provide clear direction of the commander's intentions.

Communications and Information System. An assembly of equipment, methods and procedures and personnel organised so as to accomplish specific information conveyance and processing functions.

Component Commander. A designated commander responsible for the planning and conduct of a maritime, land, air, special or other operation as part of a joint force.

Concept of Operations. A verbal or graphic statement, in broad outline, of a commander's assumptions or intent in regard to an operation or series of operations. The concept of operations frequently is embodied in campaign plans and operation plans; in the latter case, particularly when the plans cover a series of connected operations to be carried out simultaneously or in succession. The concept is designed to give an overall picture of the operation. It is included primarily for additional clarity of purpose. Frequently referred to as commander's concept.

Conflict. A politico-military situation between peace and war, distinguished from peace by the introduction of organised political violence and from war by its reliance on political methods. It shares many of the goals and characteristics of war, including the destruction of governments and the control of territory.

Contingency Plan. A plan for contingencies which can reasonably be anticipated in an area of responsibility. A plan which is developed for possible operations where the planning factors have been identified or can be assumed. This plan is produced in as much detail as possible, including the resources needed and deployment options, as a basis for subsequent planning.

Counter-Intelligence. The aspect of intelligence devoted to destroying the effectiveness of hostile foreign intelligence activities and to the protection of information against espionage, individuals against subversion, and installations, equipment, records or material against sabotage.

Course of Action. A possible plan opens to an individual or commander that would accomplish, or is related to accomplishment of, the mission. It is initially stated in broad terms with the details finalised during staff war gaming.

Critical Capability. A characteristic or key element of a force that, if destroyed, captured or neutralised, would significantly undermine the fighting capability of the force and its centre of gravity. It is not necessarily a weakness but any source of strength or power that is capable of being attacked or neutralised. Example: a critical capability of a centre of gravity of force projection might be ‘air defence’.

Critical Factor. A critical capability, critical requirement or critical vulnerability. Critical factors are derived from centre of gravity analysis.

Critical Information. Specific facts about friendly intentions, capabilities, and activities vitally needed by adversaries for them to plan and act effectively so as to guarantee failure or unacceptable consequences for friendly mission accomplishment.

Critical Logistics Events (CLE). These are logistics supporting activities and events that the DP is usually dependent on for their success. These activities are broken-up into before, during, after and next for a DP.

Critical Requirement. An essential condition, resource or means that is required for a critical capability to be fully functional. Example: a critical requirement of a critical capability air defence might be 'fighter aircraft'.

Critical Vulnerability. An element of a critical requirement that is vulnerable or that can be made vulnerable. Example: a critical vulnerability of a critical requirement of fighter aircraft might be 'pilots'.

Culminating Point. The point in time and location where a force will no longer be stronger than the adversary and risks losing the initiative. This may be due to reduced combat power, attrition, logistics, dwindling national will or other factors. To be successful, the operation must achieve its objectives before reaching its culminating point**.**

D-Day. The day on which an operation commences or is due to commence. This may be commencement of hostilities or any other operation.

Decisive Point. A geographic place, key event, critical factor, or function that, when acted upon, allows a commander to gain a marked advantage over an adversary or contribute materially to achieving success. This point may exist in

time, space or the information environment.

Deliberate Planning. Planning process used for Contingency planning, designed as a cyclic process during peacetime conditions and provides the Joint Planning Community an opportunity to develop and refine plans to be used in conflict situations.

Directive. A form of military communication that provides policy guidance or specific action to be taken. It gives direction to recipient in accordance with higher policy decision.

Decision Support Overlay. A graphic and tabulated display depicting Named Area of Interest (NAI), Target Area of Interest (TAI) and Commander's Decision Point (CDP) associated with the plan. It also displays, in tabulated format, the proposed synchronizing of friendly combat power.

Direct Support. The support provided by a unit not attached or under command of the supporting unit or formation, but required to give priority to the support required by that unit or formation.

Directive Control. A philosophy of command and a system for conducting operations in which subordinates are given clear direction by the superior on their intentions, that is the result required, a task, the resources and any constraints. It includes the freedom to decide now to achieve the required result.

End-State – National. The national end-state is the set of desired conditions, incorporating the elements of national power that will achieve the national objectives.

End-State – Military. The military end-state is the set of desired conditions beyond which the use of military force is no longer required to achieve national objectives.

Enemy. Any nation, group or body designated as enemy by the Malaysian Government. Enemy is a strategic term used by the Malaysian Government.

Essential Elements of Friendly Information. Key questions likely to be asked by adversary officials and intelligence systems about specific friendly intentions, capabilities, and activities, so they can obtain answers critical to their operational effectiveness.

Essential Task. A specified or implied task that an organisation must perform to accomplish the mission. An essential task is typically included in the mission statement.

Execute Order. An order issued by a competent authority to initiate execution planning.

Force Protection. All measures and means to minimise the vulnerability of personnel, facilities, equipment and operations to any threat and in all situations, to preserve freedom of action and the operational effectiveness of the force.

Forward Mounting Base (FMB). A secure base, port or airfield from which an operation may be launched. It should have the capacity for an insertion force to form up within it and subsequently be able to handle sustainment, reinforcements and reserves.

Friendly Force Information Requirement. Information the commander and staff need to understand the status of friendly force and supporting capabilities.

H-Hour. The specific time on D-Day at which the main operation is to begin.

High Pay off Target. A target whose loss to the enemy will significantly contribute to the success of the friendly course of action. High Pay off Targets that must be acquired and successfully attacked for the success of the friendly commander's mission.

High Value Target. A target that the adversary commander requires for the successful completion of the mission. The loss of high-value targets would be expected to seriously degrade important adversary functions throughout the friendly commander's area of interest.

Host Nation Support (HNS). Civil and military assistance rendered in peace and war by a host nation to allied forces and other organizations which are located on or in transit through the host nation's territory. The basis of such assistance is commitments arising from alliances or from bilateral or multilateral agreements concluded between the host nation and any other nations having forces operating on the host nation's territory.

Human Intelligence. A category of intelligence derived from information collected and provided by human sources.

Implied Task. A task derived during mission analysis that an organisation must perform or prepare to perform to accomplish a specified task or the mission, but which is not stated in the higher headquarters order.

Information Management. The framework and set of processes by which an organisation captures, analyses, prioritises, stores and ensures the timely dissemination of relevant information for decision-making purposes.

Information Operation. The coordination of information effects to influence the decision making and actions of a target audience and to protect and enhance our own decision making and actions in support of National interests.

Information Requirements. Those items of information regarding the adversary and the environment that need to be collected and processed in order to meet the intelligence requirements of a commander.

Initiating Directive. A directive only issued by CDF to create a force, initiate planning for a contingency or appoint a subordinate commander.

Insurgency. A protracted and organised rebellion by a dissident faction, supported by a significant portion of the population, aimed at overthrowing the existing order essentially through unconstitutional means with armed struggle.

Intelligence Collection Plan. A plan for gathering information from all available sources to meet an intelligence requirement. Transforms the essential elements of information into orders or requests to sources within a required time limit.

Intelligence Estimate. An appraisal, expressed in writing or orally, of available intelligence relating to a specific situation or condition with a view to determining the courses of action open to the adversary or potential adversary and the order of probability of their adoption.

Intelligence Process. The process by which information is converted into intelligence and made available to users. The process consists of six interrelated intelligence operations: planning and direction, collection, processing and exploitation, analysis and production, dissemination and integration, and evaluation and feedback.

Joint. Connotes activities, operations, organisations etc. in which elements of more than one service of the same nation participate.

Joint Force. A general term applied to a force which is composed of significant elements of two or more Services, Navy, Army or Air Force, generally operating under a single commander who is responsible to the CDF.

Joint Intelligence Preparation of the Battle Space. The analytical process is used by joint intelligence organisations to produce intelligence assessments, estimates and other intelligence products to support the joint force commander's decision making process. It is a continuous process that includes defining the total battle space environment; describing the battle space effects; evaluating the adversary; and determining and describing adversary potential courses of action. The process is used to analyse the maritime, land, air, space, electromagnetic, cyberspace, and human dimensions of the environment and to determine the adversary capability to operate in each. Products are used by the joint force and component command staffs in preparing their estimates and are also applied during the analysis and selection of friendly courses of action.

Joint Logistics Planning Group. A joint group consist of J1, J4 and J9 that conduct the logistics planning at operational level to support the JOPG. The planning group members can also consist from Subject Mater Expert from other organization.

Joint Operational Planning Group. A joint force planning organisation consisting of designated representatives of the JFHQ principal and special staff sections, joint force components (Service and/or functional), and other supporting organisations or agencies as deemed necessary by the JFC. Joint planning group membership should be a long-term assignment and its members should be designated spokespersons for their respective sections or organisations. Responsibilities and authority of the joint planning group are assigned by the JFC. Normally headed by the chief of staff or joint force chief planner, joint planning group responsibilities may include, but are not limited to, crisis action planning, including course of action development and refinement, coordination of joint force operation order development, and planning for future operations.

Joint Task Force. A force composed of assigned or attached elements of the Army, the Navy and the Air Force, or two or more services, which are constituted and so designated by a designated higher authority, including the commander of a unified command, a specified command, or an existing joint task force.

Level of Conflict. Describes the level for the planning and command of operations. The three levels are strategic, operational and tactical.

Line of Operation (LOO). In a campaign or operation, a line linking decisive points in time and space on the path to the centre of gravity.

Lines of Communications (LOC). All the land, water, and air routes that connect an operating military force with one or more bases of operations, and along which supplies and reinforcements move.

Main Effort. Effort that is the commander thinks is going to be decisive and provides the focus for the activity that is considered to be crucial to success in the

operation or phase of the operations.

Manoeuvrist Approach. Seeks to shatter the adversary cohesion through a series of actions orchestrated to a single purpose that creates a turbulent and rapidly deteriorating situation with which the adversary cannot cope. It focuses commanders at every level on exploiting adversary weaknesses, avoiding adversary strengths and protecting friendly vulnerabilities.

Master Target List. The encompassed listings of targets designated for a campaign or operation.

Mission. **T**he task together with its purpose, thereby clearly indicating the action to be taken and the reason there for.

Mode/Modal. Modes/Modals are the physical means of moving materiel and personnel and/or the means of transmission of information.

Multinational. Between two or more forces or agencies of two or more nations or coalition partners.

Military Operations Other Than War. Operations conducted in hazardous circumstances to relieve distress and improve security in a place where the local civil administration has broken down because of conflict or natural disaster. They include evacuation, diplomacy, humanitarian aid, and peacekeeping.

Named Area of Interest. The geographical area where information that will satisfy a specific information requirement can be collected. Usually selected to capture indications of adversary courses of action, but also may be related to conditions of the battle space. They provide an objective basis for the

employment of intelligence collection assets.

Node/Nodal. A node/nodal is a point at which resources are acquired, maintained, and/or stored and moved from one mode to another.

Non-Battle Casualty. A person who is not a battle casualty, but who is lost to their organisation by reason of disease or injury, including persons dying from disease or injury, or by reason of being missing where the absence does not appear to be voluntary or due to adversary action or to being interned.

Non-Combatant Evacuation Operations. An operation conducted to relocate designated non-combatants threatened in a foreign country to a place of safety.

Offensive Support. Offensive measures taken to support a commander in pursuing this mission, and may be organic to the Service of the supported unit or be provided by another Service, and includes naval surface fire support, fire support from any ground-based weapons system other than small arms, and offensive air support, including air reconnaissance and maritime strike.

Operation. A military action or the carrying out of a strategic, operational, tactical, Service, training or administrative military mission; the process of carrying on combat, including movement, supply, attack, defence and manoeuvres needed to gain the objectives of any battle or campaign.

Operational Art. The employment of military forces to attain strategic and/or operational objectives through the design, organisation, integration, and conduct of strategies, campaigns, major operations, and battles. Operational art translates the joint force commander's strategy into operational design and, ultimately, tactical action, by integrating the key activities at all levels of war.

Operational Design. The key considerations used as a framework in the course of planning for a campaign or major operation.

Operational Evaluation. The test and analysis of a specific end item or system, insofar as practicable under Service operating conditions, in order to determine if quantity production is warranted considering the increase in military effectiveness to be gained and its effectiveness as compared with currently available items or systems. Consideration being given to personnel capabilities to maintain and operate the equipment, size, weight, and location, and adversary capabilities in the field.

Operational Level of Conflict. The level of conflict concerned with the planning and conduct of campaigns. It is at this level that military strategy is implemented by assigning missions, tasks and resources to tactical operations.

Operational Objectives. The objectives that need to be achieved in a campaign or operation to reach the Military Strategic End-state. Correct assessment of operational objectives is crucial to success at the operational level.

Operational Instruction. Indicates the commander's intention and possibly the overall plan but leaves the detailed course of action to the subordinate commander.

Operations Order. A directive, usually formal, issued by a commander to subordinate commanders for the purpose of effecting the coordinated execution of an operation.

Operations Plan. A plan for a single or series of connected operations to be carried out simultaneously or in succession. It is usually based upon stated

assumptions and is the form of directive employed by higher authority to permit subordinate commanders to prepare supporting plans and orders. The designation ‘plan’ is usually used instead of ‘order’ in preparing for operations well in advance. An operation plan may be put into effect at a prescribed time, or on signal, and then becomes the operation order.

Operational Command. 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 may be deemed necessary. It does not on itself include responsibility for administration or logistics. May also be used to denote the forces assigned to a commander.

Operational Pause. A temporary cessation of operations after the attainment of major tactical or operational objectives, but prior to reaching one’s own culminating point, to facilitate the regenerations combat power in preparation for delivery of a decisive blow. Adversarial action can also necessitate an operational pause.

Phase. A definitive stage of a campaign or operation during which a large portion of the forces and capabilities are involved in similar or mutually supporting activities for a common purpose.

Priority Intelligence Requirement. An intelligence requirement, stated as a priority for intelligence support, that the commander and staff need to understand the adversary or the operational environment.

Prisoner of War. A detained person as defined in Part 1 Articles 4 and 5 of the Geneva Convention Relative to the Treatment of Prisoners of War of August 12, 1949. In particular, one who, while engaged in combat under orders of his or her government, is captured by the armed forces of the enemy. As such, he or she is

entitled to the combatant's privilege of immunity from the municipal law of the capturing state for warlike acts which do not amount to breaches of the law of armed conflict.

Psychological Operations. The planned use of propaganda and other measures to influence the opinions, emotions, attitudes and behaviours of hostile, neutral or friendly groups in such a way as to support the achievements of national objectives.

Recognised Maritime Picture. The fullest achievable agreed level of identification and tracking of all surface and sub-surface contacts in the area of interest. The recognised maritime picture is normally associated with the recognised air picture of the same area of interest.

Risk Management. The systematic application of management policies, procedures and practices to the tasks of identifying, analysing, evaluating, treating and monitoring risk.

Rules of Engagement. Directives issued by competent military authority which specify the circumstances and limitations under which forces will initiate and/or continue combat engagement with other forces encountered.

Sequel. An option that a commander has in conducting follow-on actions after achieving the objective and will normally follow a different line of operation than originally planned.

Specified Task. A task that is specifically assigned to an organisation by its higher headquarters.

Standard Operating Procedure. A set of instructions covering those features of operations which lend themselves to a definite or standardised procedure without loss of effectiveness. The procedure is applicable unless prescribed otherwise in a particular case. Thus, the flexibility necessary in special situations in retained.

Strategic Level of Conflict. That level of war which is concerned with the art and science of employing national power.

Supporting Plan. A plan, complementing the main plan, which provides detailed information concerning specialised and discrete aspects of an operation, and may cover areas such as communications, electronic warfare, movement, administration, public information, intelligence collection, and so on.

Synchronisation. The arrangement of military actions in time, space, and purpose to produce maximum relative combat power at a decisive place and time.

Tactical Level of Conflict. The planning and conduct of battle and is characterised by the application of concentrated force and offensive action to gain objectives.

Target Area of Interest. The geographical area where high-value targets can be acquired and engaged by friendly forces. Not all target areas of interest will form part of the friendly course of action; only target areas of interest associated with high priority targets are of interest to the staff. These are identified during staff planning and war gaming. Target areas of interest differ from engagement areas in degree; engagement areas plan for the use of all available weapons whereas target areas of interest might be engaged by a single weapon.

Targeting. The process of selecting targets and matching the appropriate response to them taking account of operational requirements and capabilities.

Task. A particular undertaking either by assignment or derived from the role of the individual or establishment.

Terminal. A facility designed to transfer cargo from one means of conveyance to another.

Terminal Operation. The reception, processing, and staging of passengers; the receipt, transit, storage, and marshalling of cargo; the loading and unloading of ships, vehicles, trains or aircraft; and the manifesting and forwarding of cargo and Passengers to destination.

War Game. A simulation by whatever means, of a military operation involving two or more opposing forces using rules, data, and procedures designed to depict an actual or assumed real life situation.

Warning Order. A preliminary notice of an order or action which is to follow. It is designed to give subordinates time to make necessary plans and preparations.

JOINT LOGISTICS PLANNING PROCESS (JLPP)

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CHAPTER 1

JOINT LOGISTICS PLANNING CONCEPT

INTRODUCTION

1001. The planning process described in MAFJP 5-01.1 Joint Military Appreciation Process (JMAP) is an internal planning process used throughout the joint environment of Malaysian Armed Forces (MAF). It applies across the range of joint operations and is designed for command and staff functions at Joint Force Headquarters (JFHQ). It also aligns with and complements the deliberate and crisis action planning processes found in MAFJD 5-01 Joint Operation Planning.

1002. In joint operations, the Logistics Staff from J4 are the planners for logistics requirement to support the joint operation. MAFJD 5-01 Joint Operation Planning, MAFJD 4-01 Logistics in Support of Joint Operation, MAFJD 4-02 Joint Movement and Transport and MAFJP 5-01.1 Joint Military Appreciation Process need to be referred while planning for the logistics support. Logisticians must be able to understand and translate the operation requirement in order to develop the Concept of Logistics Support (COLS) to support Course of Action (COA) that will produce Concept of Operation (CONOP) at the end of the process. Subsequently the Logistics Support Plan to support Operation Plan (OPLAN) will be developed.

CONCEPTUAL BACKGROUND

1003. MAFJP 5.01.1 is the basic understanding and mechanics on JMAP. It is designed to assist the planners to produce viable and supportable joint plan. It provides military guidance and understanding of the concept of JMAP in developing COA as CONOP. The process of planning itself should provide a common understanding of the problem as so to support communication and coordination. Planning generates expectations about how actions will be developed and how they will affect the desired outcome. Planning also can

provide a disciplined framework for approaching problems. It provides coordinated and cooperative methods for solving problems in a group setting.

1004. Providing a logistics perspective, MAFJD 4-01 and MAFJD 4-02 doctrines, state that successful logistics begins with planning. Planning provides the means to evaluate the feasibility of logistics function options and determine the adequacy of resources to support them. MAFJP 5-01.3 assists the logistician and the commander in anticipating requirements and positioning resources to meet those requirements. It establishes the framework for the execution and coordination of logistics support in accordance with the JFC's intent and concept of operations. Planning also provides the basis for adapting to new situations. Through participation in the planning process, logisticians gain situational awareness, facilitating their ability to deliver flexible and responsive support when confronted with changing circumstances.

1005. Logistics planners must have a good understanding of the joint military planning process doctrine MAFJP 5-01.1 as it relates to joint logistics planning process. The JLPP Process MAFJP 5-01.3 describes how logistics planning to be developed. Through this planning process, logisticians discover the physical and logistical infrastructure of an Area of Intelligence Interest (AII) as Area of Logistics Interest (ALI) and the infrastructure usable nodes and installations. When planners integrate these infrastructure nodes and installations into a redundant and flexible logistics system, the commander has choices and options he can use during the execution of the mission. The process provides the commander information on elements of infrastructure needing protection from destruction, and where the logistics system may be vulnerable to enemy actions or the unpredictable nature of weather. The planning process builds situational awareness and also generates tempo.

OPERATIONAL DESIGN

1006. Commanders initiate the conduct of operations with a design that will guide subordinate commanders and the staff in planning, execution and assessment. This operational design is the commander's tool for translating the operational requirements from higher headquarters into the tactical guidance needed by his staff and subordinate commanders. The commander uses his operational design to visualise, describe and direct those actions necessary to achieve his desired end state and accomplish the assigned mission.

1007. Operational design includes the purpose of the operation, what the commander wants to accomplish, the desired effect and how he envisions in achieving a decision. Visualisation of the battle space and the intended actions of both the enemy and the friendly force are a continuous process that requires the commander to understand the current situation, broadly define the desired future situation and determine the necessary actions to bring about the desired end state. The commander then articulates this visualisation to subordinate commanders and staff through his initial planning guidance. By describing his visualisation in this concise and compelling method, the commander focuses the planning and execution of his subordinate commanders and staff.

1008. The ACOS J4 visualisation of the logistics system provides the elements needed to gain situational awareness and create input for mission analysis. It initiates the production, by an operational planning group of decision support products for logistics shaping and it supports the development of COA(s) for logistics support. Joint Logistics Orientation (JLO) will assist ACOS J4 with the visualisation of the logistics system through the preparation of certain intelligence products such as the Lines of Communication (LOC) Study, Modified Combined Obstacle Overlay and Threat Analysis.

1009. ACOS J4 visualises what his group must do logistically to achieve a decision and best support the JFC's operation. This visualisation becomes the basis for the ACOS J4 and guidance provided to logistics staff in the "describe" portion of operational design.

TOP-DOWN PLANNING

1010. Top-Down Planning is the active participation of commanders driving the planning process at their respective levels to gain knowledge and situational awareness to support decision-making. Planning is a fundamental responsibility of command. Commanders based on their military experience and judgement must not merely participate in planning but must drive the process. The previous discussion on operational design emphasises the commander's role throughout planning and execution. The commander's intent and guidance are central to planning. He uses planning to gain knowledge and situational awareness to support his decision-making process. His plan, communicated in oral, graphic or written format; translates his guidance into a plan of action for subordinate commanders. It is the commander who decides how to shorten the planning process when in a time constrained environment. As planning time decreases, the personal involvement of the commander and the principle staff officers must increase as expressed in Figure 1-1.

More	←	Time Available	→	Less
Decreased	←	Commander's involvement in planning	→	Increased
Less	←	Detail in Commander's initial guidance	→	More
More	←	Staff flexibility	→	Less
Greater	←	Number of Course of Action developed	→	Fewer
Higher	←	Detail in orders	→	Lower

Figure 1-1: Factors Affecting Planning Based On Available Planning Time

1011. Successful time-constrained planning depends on the unit's experience in planning and its ability to make significant preparations in organising, training and equipping. Unit SOP's must be highly refined and well-rehearsed, commanders and planners must be intimately familiar with potential contingencies or missions, and every individual concerned with planning the operation must know their roles in the planning process.

INTEGRATED PLANNING

1012. Integrated Planning is the application of a systematic, coordinated and thorough approach to planning via the employment of a planning team, composed of Subject Matter Experts (SME) from J1, J4 and J9 in appropriate disciplines, to consider all relevant factors, reduces omissions and share information.

1013. Integrated planning is essential to eliminate "stove pipe" planning when individual planners, staff sections and functional areas plan in a vacuum, without

coordination with others. This planning in a vacuum approach often results in disjointed plans and unsynchronised execution. The key to integrated planning is the synchronisation of the war fighting functions, including logistics - the tactical functions of logistics - to achieve unity of effort. The war fighting functions are used extensively in integrated planning.

1014. The Joint Logistics Planning Group (JLPG) uses the war fighting functions with particular emphasis on the logistics war fighting function during planning. Use of the tactical logistics functions and sub-functions is an excellent tool for ensuring a thorough examination of the logistics war fighting function as shown in Figure 1-2 the six tactical logistics functions and their sub-functions.

Supply	**Maintenance**	**Transportation**
• Determination of requirements • Procurement • Storage • Distribution • Salvage • Disposal	• Inspection and classification • Service, adjustment & tuning • Testing & calibration • Repair • Modification • Rebuilding & overhaul • Reclamation • Recovery & evacuation	• Embarkation • Landing support • Port & terminal operations • Motor transport • Air delivery • Freight/passenger transportation • Material handling equipment

General Engineering	Health Services	Other Services
• Engineer reconnaissance • Horizontal/vertical construction • Facilities maintenance • Demolition & obstacle removal • Explosive ordnance disposal • Bridging • Water Supply	• Health maintenance • Casualty collection • Casualty treatment • Temporary casualty holding • Casualty evacuation	• Personnel administration • Religious matter • Financial management • Morale, welfare, recreation • Legal services support • Civil affairs support • Graves registration

Figure 1-2: The Six Tactical Logistics Functions

1015. JLPP process is similar as JMAP process. JLPP process requires JMAP process to continue with the logical logistics support in the operation. At strategic level, Logistics Planning Group (LPG) will work closely with Strategic Planning Group (SPG) to initiate guidance through ACOS J4 JFHQ. The LPG is headed by ACOS MAF - DLD and the members are from MAF-PSD, MAF-HSD and representative from all services. The planning process of JMAP and JLPP is like a mirror image that needs cooperation from each planning group as illustrated in Figure 1-3.

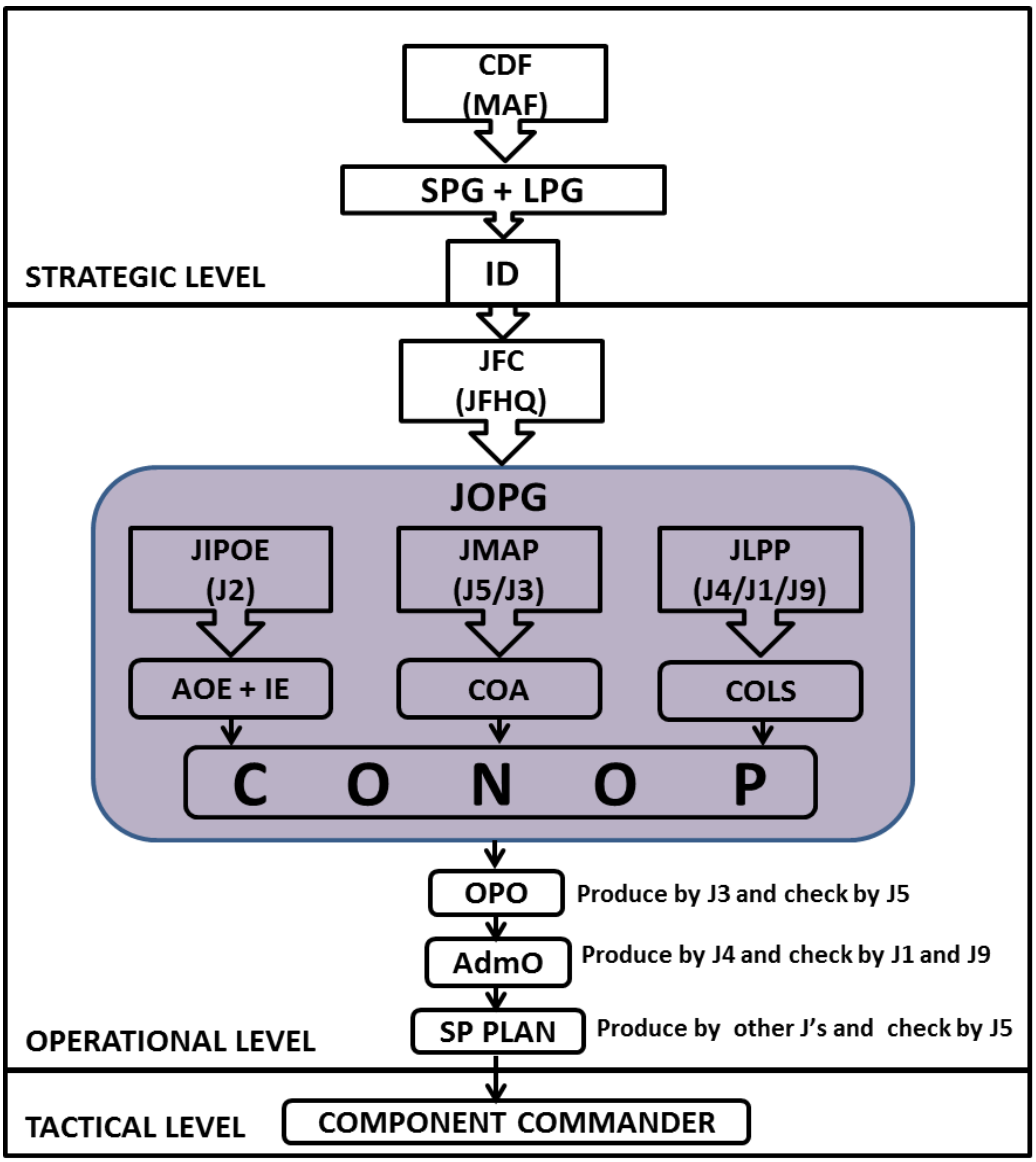


Figure 1-3: Sequence of Joint Operation and Joint Logistics Planning Process

1016. Coordination is essential to successful logistical planning throughout the JFHQ. At JFHQ the Joint Operation Planning Group (JOPG) is established to conduct the Joint Planning Operation. The JOPG is headed by COS and all ACOS from J1 to J9 as a member of the committee. The JOPG is guided by Joint Force

Commander (JFC) with the Initiating Directive (ID) received from CDF. The ACOS J4 will head the JLPG and the members are from J4 staff including Subject Matter Expert (SME) from J1 and J9. She/he will influence the JLPG through his/her representative in JOPG by providing his/her guidance in the logistics planning group based on output from JOPG. In order for the JLPG to develop a logistics system that supports the joint operation, he/she must know what all elements of the JOPG are planning. Optimally JOPG are planning concurrently with JLPG, thus gaining efficiency. This concurrent planning addresses the true intent of the JMAP Process. Although the process is concurrent, it is not necessarily parallel. As displayed in Figure 1-4 most often the JLPG will be about a half step behind the JOPG planning group.

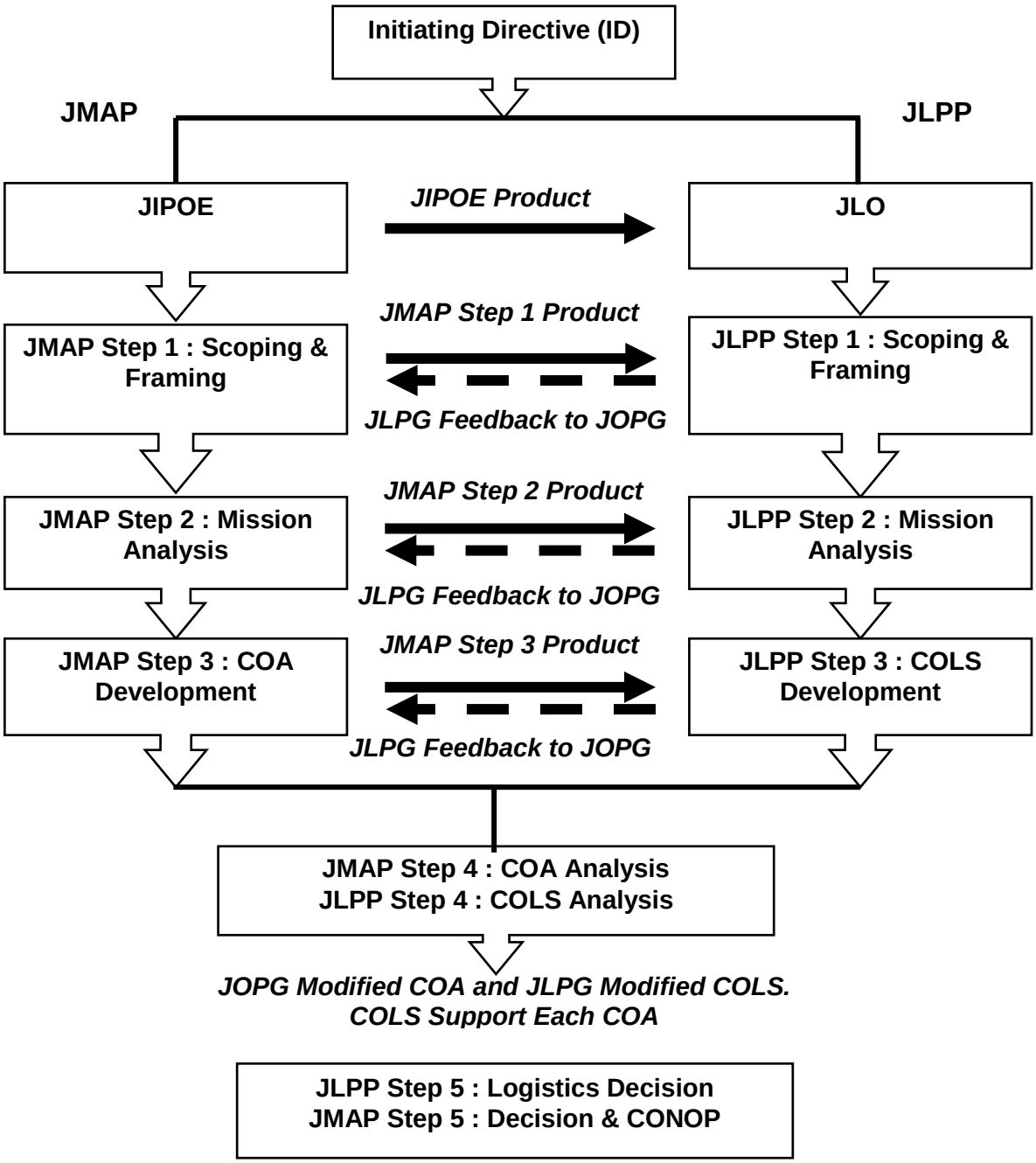


Figure 1-4: Concurrent Planning by JOPG and JLPG

INITIATING DIRECTIVE

1017. An ID is issued by the CDF to initiate the Deliberate Planning Process to produce the CONPLAN or OPLAN. Any other directives from CDF for the same operation may come in the form of amendments. For a CONPLAN or OPLAN, the CDF will issue the ID to the JFC or any other commanders.

1018. There is no standard format for an ID as each situation may vary drastically, from precise governmental direction to a mere statement of requirement. Suggested format of an ID is given in MAFJD 5-01 Chapter 3. However, planners may include any other information that may give effect to the overall planning.

JOINT LOGISTICS PLANNING PROCESS (JLPP)

1019. The JMAP establishes procedures for analysing a mission, developing and analysis COA(s), comparing friendly COA(s) against the commander's evaluation criteria and each other, selecting a COA and producing CONOPS. JLPP is also similar to the planning into five manageable and logical steps. Figure 1-5 comparing the steps between the JMAP and JLPP with five planning steps. Subsequent paragraphs and other chapters in this guide will provide more details on each specific step as related to JLPG. While these steps are presented in linear fashion, it must be recognised that planning seldom occurs in the same straight forward manner. Environmental factors, enemy action, updated intelligence, changing resources, revised guidance from higher headquarters and input provided as a result of operations and concurrent planning by higher, subordinate, adjacent and supporting units will contribute to making most planning endeavours highly complex and non-linear in practice.

1020. The problem for logisticians is to design a logistics system that will extend the operational reach of the force, increase the endurance of the force, and generate tempo of operations. If the operation is designed as a multi-phased operation, the system should be designed by phase and projected to the end of the final phase. A logistics system designed to support a force's demand requirement at 100%, when running at 100% itself, has no flexibility, hence no ability to adjust to unexpected operational environment developments.

1021. In formal terms, the JLPP accomplishes this by providing methodology for understanding and analysing a scoping and framing, mission analysis, COLS development, COLS analysis and Logistics Decision to support JMAP COA against the threat. The end state of JLPP process is to produce COLS that support the COA and produce CONOP that must be coherent and sounds logical.

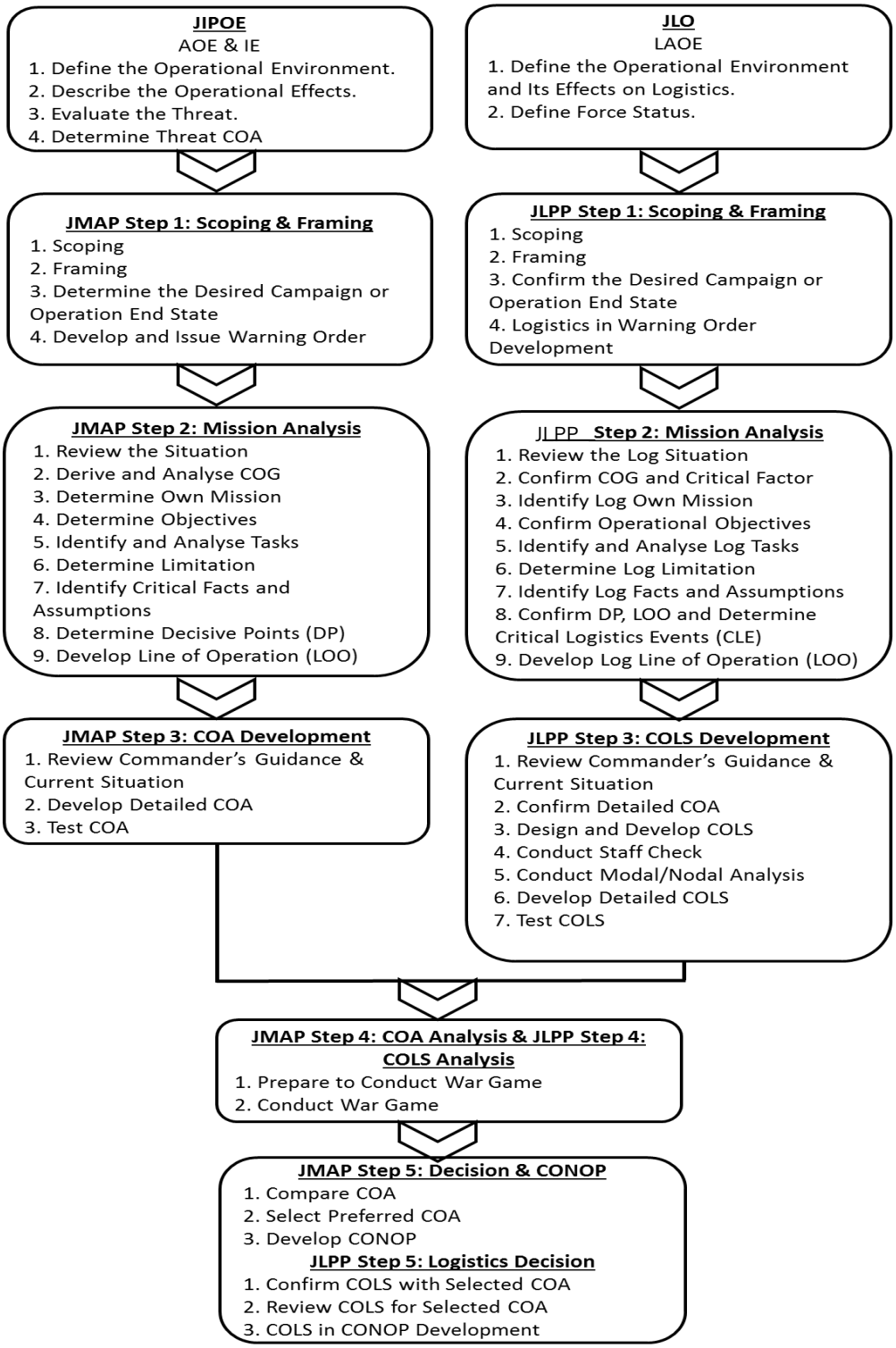


Figure 1-5: Comparison between JLPP and JMAP

STEP ONE: SCOPING AND FRAMING (S&F)

1022. This is the first step of JLPP that follows the JMAP step. Scoping is a direction from deliberations at national strategic (NSC) and military strategic CDF/JCC level through SPG/LPG where ACOS MAF-DLD direction to elaborate on logistics support to an operation. Framing is where the logistician understands the operational threat that will affect the logistics system throughout the campaign or operation. Framing will be described by J2 and to be part of consideration in appreciation process. Scoping and Framing is discussed further in **Chapter 3.**

STEP TWO: MISSION ANALYSIS (MA)

1023. This is the second step of JLPP. Mission Analysis is employed to enhance understanding of the situation and identify what the JFC must accomplish, when and where it must be done, and most importantly, why. Put another way, mission analysis is about how to do the job. Since no amount of subsequent planning on how to conduct the job insufficiently understood, mission analysis is the most critical step of the JLPP. The understanding gained through mission analysis is articulated in the mission statement and JFC's intent.

1024. JLPP Mission Analysis will depend on JMAP Mission Analysis. There are two part statements in JMAP Mission Analysis to be considered in constructing JLPP Mission Analysis: the task to be accomplished and the intent or purpose behind it. The task describes what is to be done and sometimes when and where; and the intent explains "why" the purpose. As operations unfold, tasks may be overcome by events, but the purpose will endure thus allowing subordinates to exercise initiative while maintaining unity of effort. Joint Logistics depends on an effective planning and coordinating single service logistics system. It is the heart of logistics at operational levels of command and requires identification and

analysis of on single service logistics system in the planning process. Mission Analysis is discussed further in **Chapter 4**.

STEP THREE: CONCEPT OF LOGISTICS SUPPORT (COLS) DEVELOPMENT

1025. COA Development outlines one or more broad options for how the mission and JFC's intent might be accomplished. Simply put, COA development and all subsequent steps are about providing options for the commander while continuing to refine the understanding of the problem. More than one detailed COA to be developed in this step while JLPP COLS Development step will produce COLS that match with each COA. COLS will be refined accordingly using the logistics system that can best support each COA Development in joint operations. JLPP COLS Development is discussed in detail in **Chapter 5**.

STEP FOUR: CONCEPT OF LOGISTICS SUPPORT (COLS) ANALYSIS

1026. COA Analysis critically examines and refines the COLS option(s) in light of logistics capabilities and potential actions/reactions as well as the characteristics peculiar to the operating environment. This detailed examination COLS of the environment and possible logistics system to support the COA. Logistics Planner should focus this COA Analysis to modified COLS to support COA - what can feasibly go wrong and what solutions the COLS can provide. **Chapter 6** contains further detail on the conduct of JLPP COLS Analysis.

STEP FIVE: LOGISTICS DECISION

1027. During Logistics Decision, pros and cons of the broad option(s) are reviewed and the commander decides how he will accomplish the mission, either by approving a COA as formulated or by assimilating what has been learned into

a new COA. Since the JLPG usually has only one COLS, the JOPG COA in JMAP is about validating what the means “to evaluate the feasibility” of various tactical options and to “determine the adequacy of logistics system and resources to support them”. COA in JMAP provides the ACOS J4 another opportunity to review his COLS in relation to the JOPG selected COA and get input from his staff on supportability and risk. The end state of this step is to produce with viable COLS for the CONOP. **Chapter 7** will explain further on Logistics Decision step.

CHAPTER 2

JOINT LOGISTICS ORIENTATION (JLO)

INTRODUCTION

2001. JLO is used to determine the logistics capacity of the operational environment and identify the logistics vulnerabilities created by the environment and infrastructure. It also assists staff to better understand their own force agility. It is designed to assist J1, J4 and J9 staff planning and prepare the foundations for informed logistics decision making within the JLPP process. JLO is logistics intelligence where it provides identification and verification of information related to logistics requirements. JLO requires staff to gain information from various sources, analyse the information and produce a number of standardised outputs. It is designed to orientate logistics staff to the operational environment and its logistics effects on operation, identify the exact nature of current force disposition and provides the intelligence collection and reconnaissance tasks. One of JLO input will be the product of JIPOE. Figure 2.1 shows the JIPOE and JLO steps.

JIPOE	JLO
Step 1. Define the Operational Environment (OE)	Step 1. Define OE and its effect on logistics
Step 2. Describing the OE Effects	Step 2. Define Force Status
Step 3. Evaluating the Threat	
Step 4. Determining Threat COA / Scenario	

Figure 2-1: JIPOE and JLO Steps

2002. JLO defines OE and its effect on logistics, own troop capabilities, resources and infrastructure as the primary source of output to logistics estimation. The gathering of logistics intelligence data should be conducted continuously, in parallel with the operational intelligence effort and be given equal priority. Once this data is gathered, relative to an area of operation (AO) or a theatre needs to be analysed to identify the logistics impact on operations and any critical vulnerabilities (CV). It is conscious efforts to identify and assess those factors which facilitates, inhabits or deny support to combat elements. Ongoing gathering of logistics intelligence ensures that adequate information is available to complete estimates and detailed checks and the developments of a feasible COLS, the major output of the joint logistics planning process. Figure 2-2 below shows the relationship between JLO and JLPP.

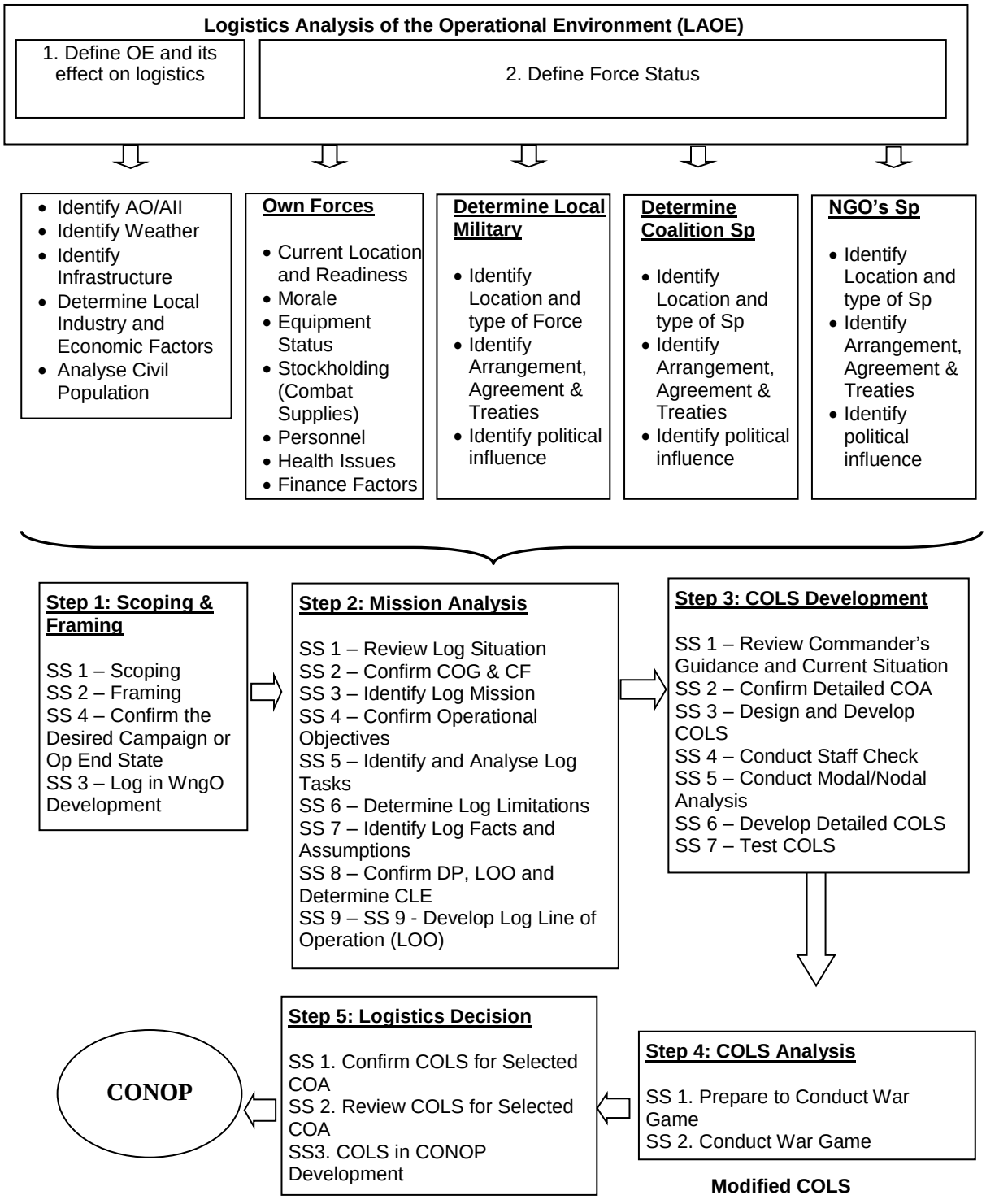


Figure 2-2: The Relationship between the JLO and JLPP

2003. JLO requires logistics staff to determine key information and intelligence gaps by methodically reviewing existing intelligence products, particularly the JIPOE, as well as information gathered from a variety of sources such as the world-wide web, encyclopaedia, telephone books and reference books. Once gathered, the information and intelligence will need to be analysed by logistics staff to determine the logistics impact on operations and identify potential friendly critical vulnerabilities (CVs). It assists the JLPG staff to identify Critical Logistics Event (CLE) to support the Decisive Point (DP) in JMAP process. It also identifies the intelligence requirements to support the analysis and assists the operation in targeting the enemy Centre Of Gravity (COG). Its product can be presented in many forms such as a series of graphic overlays or metric that depicts the combined effect of the environment.

DATA COLLECTION

2004. The gathering of logistics intelligence should be conducted continuously, as part the operational intelligence effort, with the priority determined as part of the CCIR. Ongoing gathering of logistics intelligence ensures that adequate data is available to complete detailed staff checks and develop a feasible COLS. JLPG staff must work closely with the J2 staff to ensure the systematic collection of appropriate data about the operational environment and avoid duplication of staff effort. JLPG staff must keep the intelligence staff advised of changing intelligence priorities and recognise that a significant period may elapse between the submission of a request for information (RFI) and its satisfaction.

2005. As data collection and analysis take time, assumption based planning is usually undertaken to facilitate progress. The assumptions must be documented in a Logistics Facts, Assumptions and Tasks List (LOGFAT List) as per **Annex A**.

RELATIONSHIP BETWEEN JLO AND JLPP

2006. JLO is initiated by the identification of a problem that requires JLPP to analyse. Therefore Mission Analysis will normally commence before a full analysis completed. However as information becomes available, the JLPG staff must consider the new information throughout the conduct of JLPP.

2007. During JLPP Mission Analysis, the JLPG staff from J1, J4 and J9 must seek intelligence information from JLO, JIPOE and Scoping & Framing product in JMAP. The information will include an assessment of the key issues that affect the logistics planning. Estimates of the effect of the environment may not be completed and may require a number of assumptions to be made in order to stimulate further planning. Each assumption should be verified through the collection plan.

2008. The provision of the information will be heavily reliant on the JLO, JIPOE and Scoping & Framing product of JMAP process. Therefore if little progress is made through the JLO and JIPOE processes the JLPG staff must consult with the JOPG staff to develop assumptions to allow logistics planning to continue. As information proves or disproves an assumption becomes available through the execution of the JLO and JIPOE, JLPG staff must inform the planning staff of J3 regardless of where they are in the JMAP process. The relationship between JIPOE and JLO process is shown in **Annex B**.

2009. During the briefing to ACOS J4 by JLPG staff of the outcomes of the Mission Analysis, the JLPG staff should brief as much information as is known based on the area identified. During the issuing of ACOS J4 guidance, he/she should:

a. Confirm or modify any assumptions that have been made.

b. Note the effects on logistics base on the environment and use it's in the development of his guidance.

STEP 1 JLO – DEFINE OE AND ITS EFFECT ON LOGISTICS

2010. This step of JLO outlines the broad situation in terms of operational environment, stakeholders and own force. The outcome of this step is to determine the ALI and to provide commander and staff with background knowledge of the significant environmental characteristics that may affect the friendly COA. These characteristics may include terrain, force capability, culture, stakeholders, political, religious, infrastructure, economic, Law of Armed Conflict (LOAC), laws of the sea and psychological. Defining the operational environment involves the identification of characteristics of the environment that may influence COLS to support COA. It involves the following stages:

a. **Sub-Step 1: Identify AO / AII**. The operation staff determines the AO and AII; operations rather than logistics issues often determine these areas. The JLPG staff review the size and geophysical attributes of both the AO and AII from air, maritime, ground and space aspects in order to determine the ALI. The ALI may within the AII due to logistics considerations such as the potential location of the Forward Mounting Base (FMB) or where materiel is sourced. The AII is determined by defining the reasonable limits within which the environment or stake holders active outside the AO can affect the logistics planning. Figure 2-3 show AII and ALI. It includes:

(1) Geophysical features that may impact on logistics support.

(2) Time and space considerations that may have an impact on movement and distribution, and modal turnaround times.

(3) Potential LOC for ALOC and SLOC.

(4) Main supply routes (MSRs).

(5) Point Of Embarkation (POE)/Point Of Disembarkation (POD).

(6) Forward Mounting Base (FMB)/Forward Operating Base (FOB).

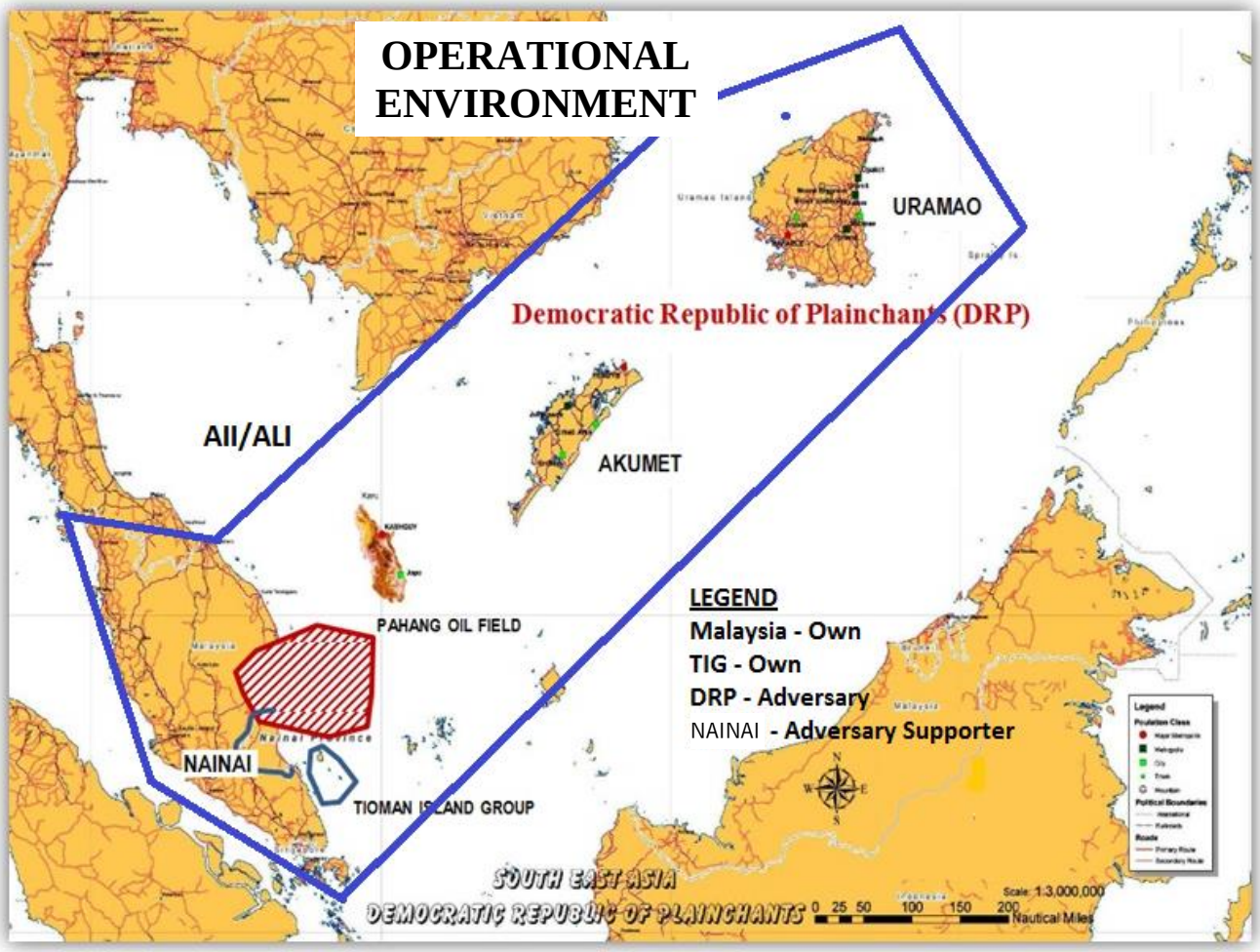


Figure 2-3: AII and ALI

b. **Sub-Step 2: Identify Weather**. A parallel task is to analyse the weather and climate described by the JIPOE. Weather is the state of the atmosphere with respect to wind, temperature, cloudiness, moisture and pressure whereas climate refers to the composite of weather effects and is viewed over a period of time. Weather is important when determining initial deployment conditions and to understand the daily patterns that may assist or hamper military operations, whereas climate has a longer term impact on operations. Climatic factors to be considered include long-range forecasts,

seasonal patterns, moon phases, rainfall, temperature, humidity, winds and cloud cover. Weather is a vital element that can affect the logistics planning in support of the joint operation. Therefore JLPG staff must identify the weather focus, seasonal pattern, rainfall, moon phase, humidity, winds and temperature in the AO/AII. Figure 2-4 shows the weather matrix analysis. The weather and climate patterns are analysed for their effect as follow:

(1) Movement of personnel, stores and equipment.

(2) Modes of transportation.

(3) Personnel (acclimatisation, health and working conditions).

(4) Stores and equipment (deterioration, usage patterns, maintenance requirements).

(5) Work areas.

(6) Accommodation requirements.

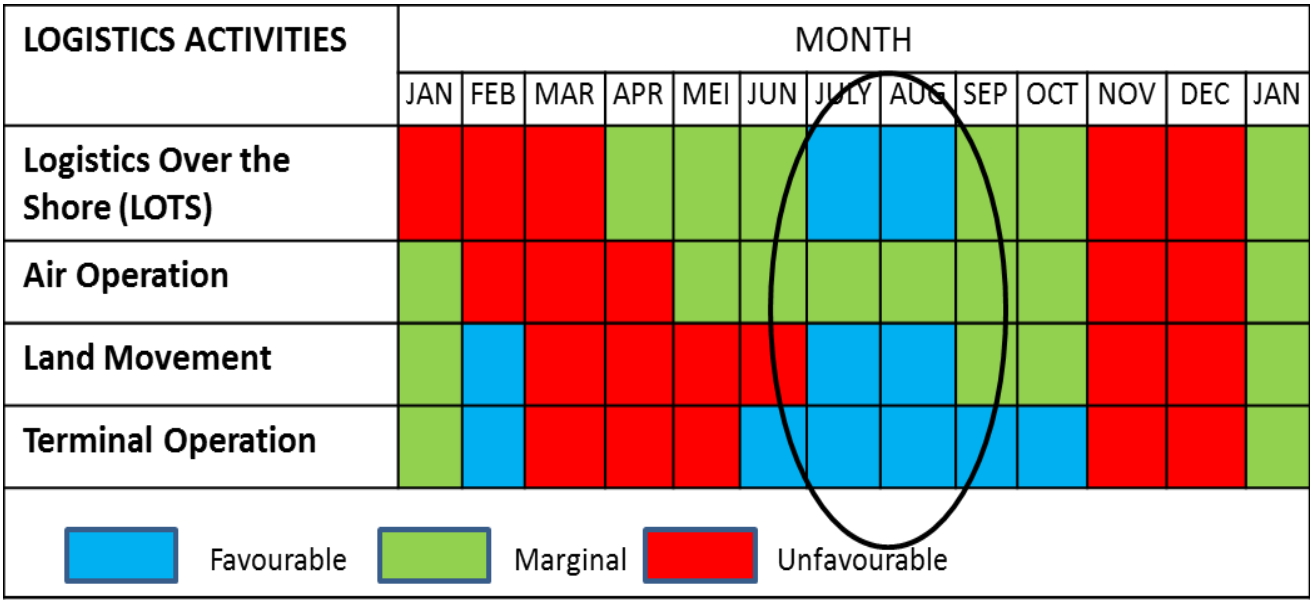


Figure 2-4: Weather Matrix Analysis

c. **<u>Sub-Step 3: Identify Infrastructure</u>**. Infrastructure in the AO/AII includes transport networks, harbour and port facilities, airfield, health facilities, power supply, building and other things that can be utilised as logistics mode and node during planning stage. Example of working sheet to identify the infrastructure is Logistics Analysis of Operational Environment (LAOE) as in **Annex C**.

d. **<u>Sub-Step 4: Determine Local Industry and Economic Factors</u>**. The determination of local industry and economics will help JLPG staff to identify local resources such as spares capacity, surge capacity and potential insurance and contracting issues available that can be utilised during deployment of force.

e. **<u>Sub-Step 5: Analyse Civilian Population</u>**. This sub-step can provide JLPG staff with some information about a local population on their demographics, attitudes, language, religious belief, political grievances,

local labour and interpreters. These will effect on Host Nation Support (HNS), Military/Civilian relationship, employment of labour and local policies.

PRODUCT OF STEP ONE

2011. JLPG staff develops their understating of the operational environment from a logistics perspective. They may include:

a. **Area of Logistics Interest Overlay (ALIO)**. The ALIO provides a quick visual reference to the key infrastructure capabilities and general stockholdings within the ALI that may be used during the mounting and subsequent conduct of operations. Example of ALIO as shown in figure 2-5 below:

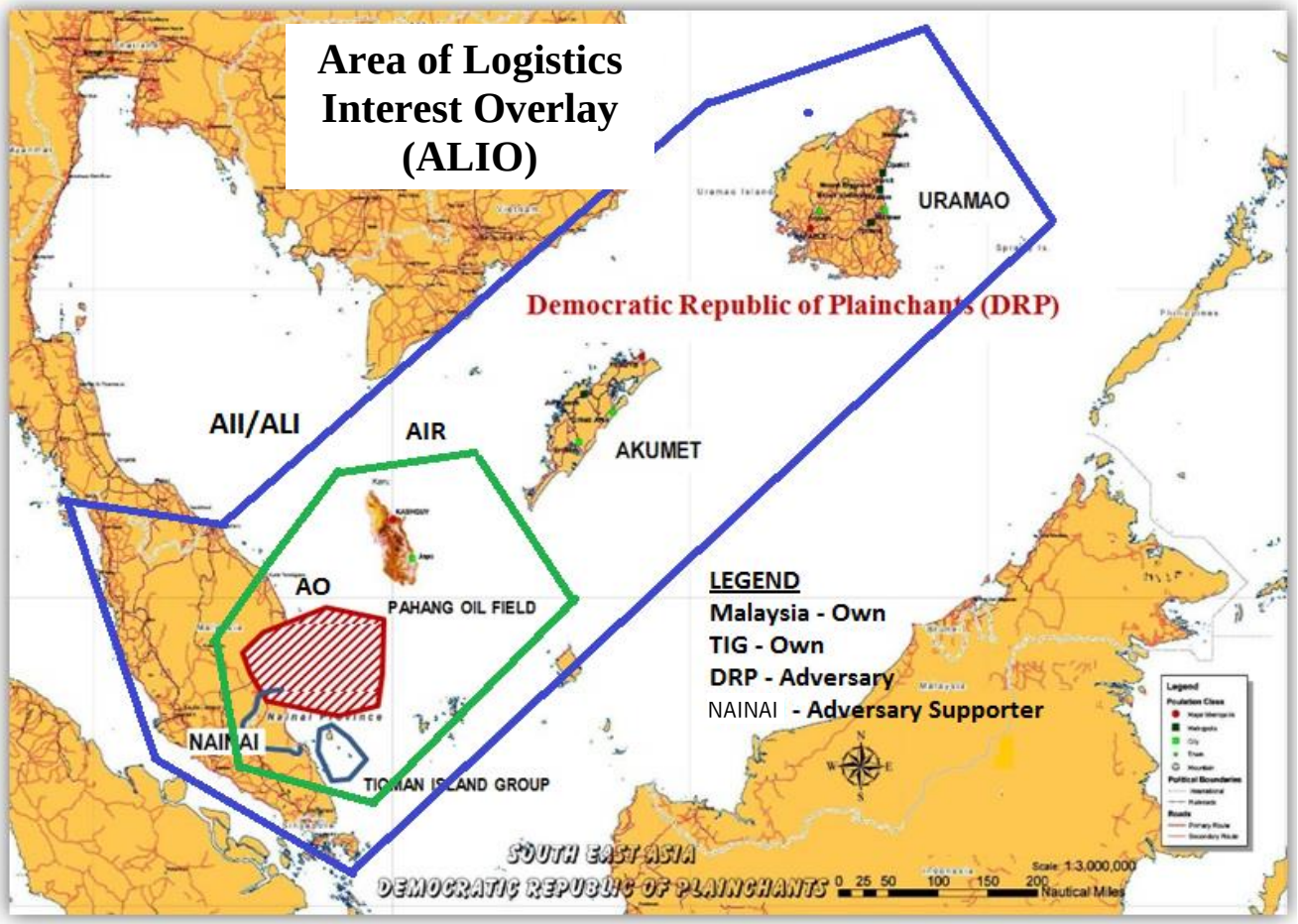


Figure 2-5: Area of Logistics Overlay (ALIO)

b. **LOGFAT List**. The LOGFAT List is a tool used to capture known facts that enable logistics planning and execution tasks to be deduced. Where facts cannot be readily ascertained then assumptions may be required, which may subsequently become CCIR. Throughout the planning cycle, logistics staff attempt to ascertain facts in order to eliminate as many assumptions as possible, helping to reduce the logistics risk to the operation. Ideally all assumptions become facts. The LOGFAT List can also be used to track risk assessments (see **Annex A**).

c. **Logistics Analysis of the Operational Environment (LAOE)**. The LAOE is a summary spreadsheet that captures the main data and enables logistics staff to analyse the capacity of key nodes and modes to support operations. It is essential that the normalcy patterns of civilian and commercial use are factored into the determination of what can be made available for military use. The key is not only to capture data but to analyse it and draw meaningful conclusions. See **Annex C** as an example of LAOE.

d. **Distance/Time Overlays**. Distance/time overlays provide the staff with a visual aid to comprehend time and space issues for mounting and sustaining operations. Example of a distance/time overlay is shown in Figure 2-6 below:

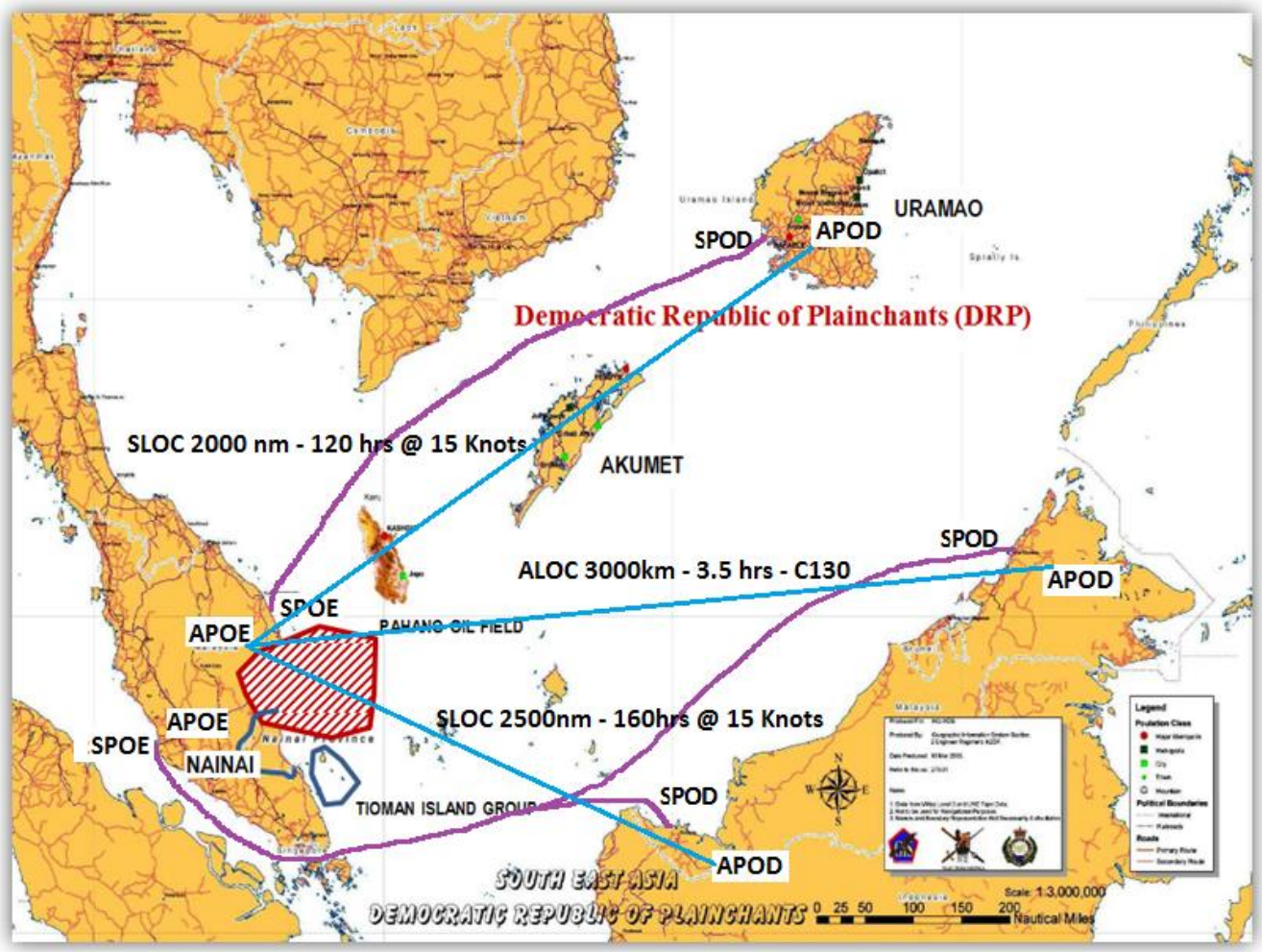


Figure 2-6: Example Distance/Time Overlays

e. **<u>Weather or Climate Effects Matrix</u>**. Weather and Climate Effects Matrices help staff to visualise the impact that these two elements may have on operations. The matrices are provided by the JIPOE and can be interpreted for logistics effects. Example of a climate effects matrix with logistics considerations is shown in Figure 2-7 below:

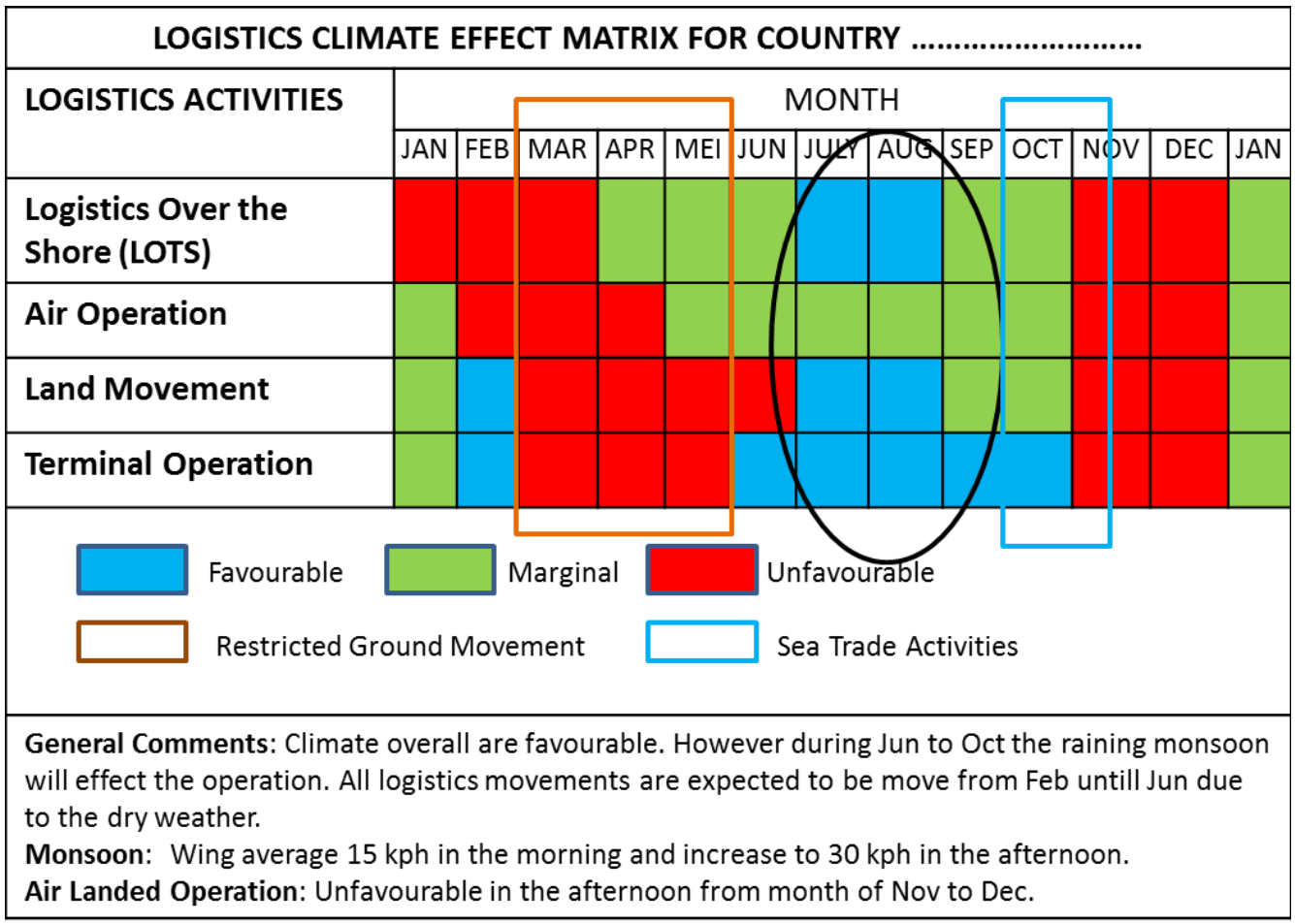


Figure 2-7: Example Weather or Climate Effects Matrix

STEP 2 JLO – DEFINE FORCE STATUS

2012. This step analyse the characteristic of forces that are available in the AO/AII which can acquire their support beside our own forces in joint operation. The effect on forces may be noted in term of application, lethality, mobility, intelligence, command and control, sustainment and moral. This will result in products, indicating potential and granted useful area as Forward Operating Base (FOB), health support, choke point and support infrastructure.

2013. This step will assist JLPG staff to determine the status and agility of friendly forces, including allies, Other Government Agencies (OGAs), Non-Government Organisation (NGOs) and contractors. The ability to accurately describe the full force capability (not just combat force) significantly enhances the commander's knowledge of the force's complete combat power. Creation of a comprehensive assessment of force capability requires visibility of the key assets available to the commander including the disposition, condition and location of major systems and materiel. The step provides the process to analyse the location and readiness of Force Assignment, equipment status, stockholdings, personnel, health issues and finance factors. The sub-step are as follows:

a. **Sub-Step 1: Own Forces**. Based on the assign forces and their location for the operation, the JLPG staff must identify their moral and equipment status. These include stockholding of combat supplies and health issue to be considered. Disposition of logistics element and its readiness to be identified. This includes the logistics asset and equipment that support the operation. Lastly the finance factors must be considered.

b. **Sub-Step 2: Determine Local Military**. This factor may include some data relating to local military that exist in area that can be used to support an operation. Logistics data requires such as the readiness and shortfall of the local military base on agreements, treaties and political influences. Analyse effect on the interoperability based on Host Nation Support (HNS), agreements and legal restrictions.

c. **Sub-Step 3: Determine Coalition Support**. The factor is the same as Sub-Step 2 that requires information on the arrangements, agreements and political influences to support the operations.

d. **Sub-Step 4: Government Agencies and NGO's**. To identify any NGO's that can support the operation based on their function. The information will normally come from strategic level.

e. **Sub-Step 5: Identify Local and Global Contractors**. To identify any contractors that can benefit the operation in the area. The information will normally come from strategic level.

PRODUCT OF STEP TWO

2014. The products of step two is not a rigid format that need to be produced. The format below is a suggested tabulated form as follows:

Ser	Items	Assign Troop			Local Military	Coalition Force	NGO	Global Contractor
		Army	Navy	Air Force				
1.	Location							
2.	Strength							
3.	Log Elm							
4.	Other Support							

2015. JLO Aide Memoire as in **Annex D**.

Annexes:

A. Logistics Facts Assumption and Task List (LOGFAT).

B. Relationship between JIPOE and JLO Process.

C. Logistics Analysis of Operational Environment (LAOE).

D. JLO Aide Memoire.

ANNEX A TO

CHAPTER 2

LOGISTICS FACTS ASSUMPTION AND TASK LIST (LOGFAT)

LOGISTICS FACTS ASSUMPTIONS AND TASK LIST – COUNTRY ……							
Ser	Item/Issue	Fact	Assumption	Deduction	Task	Residual Risk	Priority
1.	Water Production Capabilities						
2.	Diesel Fuel Holding						
3.	Seaport Capabilities						
4.	Aviation Fuel Holdings						
5.	Airport Capabilities						
6.	Hospital Capabilities						
7.	Main LOC Status						
8.	Telecommunication Facilities						
9.	Power Production						
10.	Possible FOB/FMB						
11.	Assembly Area						
12.	Distribution Point						
13.	Infrastructure						
14.	Warehouse						
15.	MSR						
16.	POD						
17.	POE						
18.							
19.							
20.							

ANNEX B TO

CHAPTER 2

RELATIONSHIP BETWEEN JIPOE AND JLO PROCESS

JIPOE Task	JIPOE	Crossover	JLO	JLO Task	Key Log Outputs of JLO
a. Review the situation b. Scope the threat c. Identify significant characteristics of the operational environment d. Identify AII and Responsibility	1. Define the OE	AO/AII Graphics	1. Define OE and its effect on logistics	a. Identify AO/AII b. Identify Weather c. Identify Infrastructure d. Determine Local Industry and Economic Factors e. Analyse Civil Population	Commence: 1. ALIO 2. LAOE 3. Time and Distance Overlay 4. LOGFAT List
a. Analyse physical characteristics of the OE b. Analyse non-physical characteristics of the OE c. Summarise critical effects and issues	2. Describe OE Effects	Input to IRs and CCIRs Physical Effect Brief Normalcy Graph Physical Effect Brief Combination Graph Weather Effect Matrix Demographic Brief			
a. Review threat Mission Analysis b. Develop threat COA/Scenario c. Develop Indicator for COA d. Produce draft collection plan	3. Evaluate Threat		2. Define Force Status	a. Own Forces b. Determine Local Military c. Determine Coalition Sp d. NGOs Sp e. Identify Global Contractors	Continue Updated LOGFAT List
a. Review threat situation b. Analyse threat capability c. Conduct threat mission analysis d. Undertake threat modelling	4. Determine Threat COA				Own Forces Readiness

Input into JLPP Scoping and Framing

ANNEX C TO

CHAPTER 2

LOGISTICS ANALYSIS OF OPERATIONAL ENVIRONMENT (LAOE)

Ser	Items	NAINAI	TIG	KUANTAN	TEMERLOH
(a)	(b)	(c)	(d)	(e)	(f)
1.	**Transport Network** • Type of Road • Staging Area/Assembly Area • Haulage Depots • Railways • Railway Depot • Railway changeover • Railway Station • Navigable waterways • Transport routes				
2.	**Harbour and Port** • Pilot service • Wharfage • Moorings • Cargo Handling and warehouse • MHE Capabilities & Availability • Break Bulk/Transshipment facilities • Customs/Quarantine • Victualing/POL Service				
3.	**Airport/Airfields** • Airfield Operation Service • Length & Strength of runaway • Hard Standing • Cargo Handling & Warehousing				

	• GSE/MHE Capabilities and Availability • Customs/Quarantine • Victualing/POL Service				
4.	**Health Facilities** • Hospital and Clinic • Surgery Facilities • Blood Storage • Laboratories • Dental Capabilities				
5.	**Reticulated Services** • Electricity Transmission – UPS • Natural Gas Pipeline • Water- Reservoir, dams, pipeline • Fuel- distribution including pipeline, refineries, depot, retail outlet • Sanitation/waste				
6.	**Training Area** • In/Out of Country • Facilities Infrastructure • Information system support • Teaching equipment/aides				
7.	**Explosive / Storage** • Restrictions on transport routes • Convoy parking • Civil/Military • Warehousing • Licensed Capacity • MHE Capabilities & Availability				
8.	etc				

ANNEX D TO

CHAPTER 2

JOINT LOGISTICS ORIENTATION (JLO) – AIDE MEMOIRE

INPUTS	STEPS AND ACTIVITIES	OUTPUT
(a)	(b)	(c)
	1. Define OE and Its Effect On Logistics	
JIPOE Product Maps and Charts GIS Service News Report Electronic Atlas Web Sites Methodology Dept	a. Identify Joint Force Area of Operations (AO)/Area of Intelligent Interest (AII)	Area of Logistics Interest Overlay (ALIO)
	(1) Review size and geographical attributes of AO/AII including air, maritime, ground and space	
	(2) Time and Space –Impact on Movement within ALI	Air/Sea/Land travel time
	b. Identify Weather	Weather & Climate effects matrix
	c. Identify Infrastructure	Define potential MSR, Loc of LOC, POE/POD, FMB/FOB
	d. Determine Local Industry and Economic Factors	Quantify Host Nation Sp (HNS)
	e. Analyses Civil Population	Updated LOGFAT

	2. Define Force Status a. Own Forces	
	(1) Current Location and Readiness of Log Element	Location on ALI & List of Log Elms
	(2) Moral	Statement of force moral
Log Elm Assignment	(3) Equipment Status	Potential hire equip & purchase of equip
	(4) Stockholding (Combat Supplies)	Updated Critical Stock
Personnel Policy Psychological & Demographic Brief	(5) Personnel	Updated critical personnel issues
Local health Issues	(6) Health Issue	Time issues for inoculations, potential health issues & associated logistics issues Strategic Guidance
Strategic Guidance	(7) Finance Factors	
MOU,MOA,SSA & LSA	b. Determine Local Military (1) Identify location and type of forces particularly log elms	Location on ALI & List of Force and Log Elms
Liaison Officer	(2) Identify arrangements, agreement and treaties	List of arrangement & agreement

Open Source Data	(3) Identify Political Influence c. Determine Coalition Support (1) Identify location and type of coalition support (2) Identify arrangement and agreements (3) Identify political influence d. NGO's (1) Identify location and type of likely NGO Involvement (2) Identify arrangement and agreements (3) Identify political influence e. Identify Global Contractors	 Location on ALI & List of Force and Log Elms List of arrangement & agreement Location on ALI & List of Force and Log Elms List of arrangement & agreement List Potential Contractor Sp Statement Capability

CHAPTER 3

SCOPING AND FRAMING

INTRODUCTION

3001. The first step of the JMAP process is Scoping and Framing which is intended to identify problems and threats encountered. For JLPP the first step is also the same step as JMAP that require JLPG staff to filter and analyse the sub-step output. It must also go through the same process because JMAP and JLPP process are closely related where the JLPP process will provide assistance to the JMAP process in designing operations or campaigns. Comparison between Step 1 JMAP and Step 1 JLPP are shown in Figure 3-1 below:

JMAP	JLPP
Step 1: SCOPING & FRAMING	**Step 1: SCOPING & FRAMING**
SS1. Scoping	SS1. Scoping
SS2. Framing	SS2. Framing
SS3. Determine the Desired Campaign or Operation End State	SS3. Confirm the Desired Campaign or Operation End State
SS4. Develop and Issue Warning Order	SS4. Logistics in Warning Order Development

Figure: 3-1: Comparison JMAP Step 1 and JLPP Step 1

3002. Scoping involves an investigation or discussion to determine the effect a proposed action based on higher directive. It is an ongoing assessment of a situation, usually through observations, consultations, and discussions. In this context the scoping is to establish understanding on the orders from higher authority. Framing is a technique used to bring the focus to the subject assigned and used to construct, refine, and deliver output in decision making process. Framing in this context is to describe the threat that affects the action of friendly forces in surrounding environment.

SUB-STEP 1: SCOPING

3003. Scoping is the direction of the discussion at the strategic level namely the National Security Council (NSC) and the Strategic Planning Group (SPG). CDF through Joint Chief Committee (JCC) will outline the military actions including logistics related matters. ACOS MAF-DLD will provide guidance on how logistical assistance will be implemented to support a campaign or operation.

3004. At operational level the JFC will receive an ID that instructed him/her to plan and conduct the military action base on strategic requirement. To do this, JFC and his JOPG have to understand the requirement from strategic level before they plan on how the military action to be conducted. JLPG within the JOPG headed by ACOS J4 will also understand the logistics requirement from strategic level. The logistics scoping normally covers the following areas:

a. **Logistics Initial Guidance**. The initial guidance normally can be found in an ID or Planning Directive from CDF. The ID can be varies in form either it

is in written or oral. The logistics requirement description in the ID is to ease JLPG in producing the logistics support concept to meet the operational objectives. Figure 3-2 shows an abstract from an example of ID which logistics guidance can be abstracted. The sentences in the red box highlighted are some information that can guide the JLPG Staff while conducting the logistics planning process.

PRELIMINARY PLANNING GUIDANCE

8. The following planning are to be adhered to:

a. **Assigned Force**. Forces assigned under your Operational Command (OPCOM) are listed at **Appendix 1**. Any additional forces or the requirement for supporting forces, are to be identified and proposed through your normal planning sequence.

b. Government Support and Guidance:

(1) The national infrastructure will be mobilized in support of the military but with minimal disruption to the economy.

(2) Casualties are to be kept to a minimum.

(3) NSC must be consulted through the CDF for any decision which are beyond your authority as the appointed commander

(4) Neutrals are not to be interfered with.

(5) In the event of armed conflict, LOAC and ROE are to be strictly adhered.

(7) Minimize collateral damages.

c. **Duration of Operation**. Duration of operation do not exceed 180 days.

d. **Fuel Arrangement**. Petrol and Diesel will be provided by PETRONAS upon request.

f. **Movement by Rail**. Movement by rail can be arrange if there is a requirement.

END STATE

9. The sovereignty of MAL is maintained and LAGENDA is protected. LAN has been convinced that, aggression against MAL's territory will be met with overwhelming force.

Figure: 3-2: An Example of CDF ID That Shows the Logistics Statement

b. **Logistics Planning Limitations**. The logistics planning limitations can also be abstracted in CDF ID. On top of that pre-preparation should be considered in the planning limitation. For example, if the combat supplies are to be stocked-up to certain level and it take at least a week to built-up stock, so the time limitation is to plan much more earlier before start the campaign or operation. There is a lot more planning limitation to be considered in conducting the logistics planning supporting operational COA. The above abstract ID did state that the duration of operation should not exceed to 180 days. This is the logistics planning limitation that the JLPG Staff must take into consideration while conducting the logistics planning duration, time and space.

c. **Update LOGFAT and LAOE.** The LOGFAT and LAOE is the product of JLO which elaborate detailed information on logistics function and operational environment that can be used to conduct logistics planning. JLPG Staff have to update the document if there is new input that might influence the planning process. Example LOGFAT and LAOE can be viewed in **Chapter 2 page 2A-1 and 2B-1**. Figure 3-3 is an example of LOGFAT and Figure 3-4 is an example of LAOE been updated.

LOGISTICS FACTS ASSUMPTIONS AND TASK LIST – COUNTRY NANAI							
Ser	Item/Issue	Fact	Assumption	Deduction	Task	Residual Risk	Priority
1.	Water Production Capabilities	No specific water source	Drilling troops	Need to drill a well	Engr Troop	Expose to avdersary	3
2.	Diesel Fuel Holding						
3.	Seaport Capabilities						
4.	Aviation Fuel Holdings						
5.	Airport Capabilities						
6.	Hospital Capabilities	No Level 3 hosp	1 x Medical Bn	Need to estb level 3 hosp invicity SAGA	Medical Troop	Distribution of medicine is too far	1
7.	Main LOC Status						
8.	Telecommunication Facilities						
9.	Power Production						
10.	Possible FOB/FMB						
11.	Assembly Area	Area PANJI and RABAT is best for Army AA	Hard standing ground	To provide sy protection			
12.	Distribution Point						
13.	Infrastructure						
14.	Warehouse						
15.	MSR						
16.	POD						
17.	POE						

Figure 3-3: An example of Updated LOGFAT

LOGISTICS ANALYSIS OF OPERATIONAL ENVIRONMENT (LAOE)					
Ser	Items	NANAI	TIG	KUANTAN	TEMERLOH
(a)	(b)	(c)	(d)	(e)	(f)
1	**Transport Network**				
	• Type of Road	Good	Good		
	• Staging Area/Assembly Area	Gen Area BALIN Good	BASIN & LAGA		
	• Haulage Depots	No	No		
	• Railways	No	No		
	• Railway Depot	No	No		
	• Railway changeover	No	No		
	• Railway Station	No	No		
	• Navigable waterways	Good	Good		
	• Transport routes	Class 3 Rd	Class 2 Rd		
2	**Harbour and Port**				
	• Pilot service	Yes	No		
	• Wharfage	Yes	No		
	• Moorings	Yes	No		
	• Cargo Handling and warehouse	Yes	Limited		
	• MHE Capabilities & Availability				
	• Break Bulk/Transhipment facilities	Limited	No		
	• Customs/Quarantine				
	• Victualling/POL Service	Yes	No		

Figure 3-4: An example of Updated LAOE

d. **Status of Logistics Readiness**. Readiness starts long before we begin any mission. Logistics readiness is to prepare our forces for anything by ensuring that every person and piece of equipment is ready for any mission. From distribution and materiel management to contingency and distribution, these experts have a wide range of operations under their watch, ensuring that everything gets where it needs to go, exactly when it needs to get there. To do this, the JLPG Staff have to identify and analyse on own forces including their asset and material. Within own forces the logistics elements or organisation

from the assign force should make known and understand their level of capability. For example if the Land Force has been assign as assign force to JFHQ is Division level, the logistics elements should come from Division Maintenance Area (DMA). If Brigade Level the logistics element should be the Brigade Maintenance Area (BMA). DMA or BMA consists of the support group that includes transports, workshop, field hospital, prisoner cage, water point, combat supply stock on wheel and ordnance and spares stock on wheel. Figure 3-5 is an example the logistics readiness detail are as follows:

Assign Force	Status of Logistics Readiness						
	Personnel	Vehicles	Assets	Fuel	Weaponry	Ammo	Health
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
Army							
a. 3 Div Gp	80%	75%	60%	99%	100%	70%	100%
b. 9 RMR (Para)	90%	90%	90%	99%	100%	90%	100%
c. SF	100%	90%	90%	100%	100%	70%	100%
Navy							
a. Frigate Sqn	80%	75%	60%	99%	100%	70%	100%
b. Strike Sqn	90%	90%	90%	99%	100%	90%	100%
c. SF	100%	80%	60%	70%	100%	90%	100%
Air Force							
a. 18 Sqn	80%	75%	60%	99%	100%	70%	100%
b. 20 Sqn	90%	90%	90%	99%	100%	90%	100%
c. 6 Sqn	70%	75%	75%	70%	75%	75%	75%
d. SF	90%	90%	90%	90%	90%	90%	90%

Figure: 3-5: Status of Logistics Readiness

e. **Time Constraint and Planning Consideration**. Constraints of time and planning considerations are of paramount importance in the logistics appreciation process. Managing the logistics items or material may consume a lot of time and if possible a proper planning should be made. Constraint could impact on the outcome of a planning output and this may include the possibility that a proposed logistics support concept could not support operational COA. The JLPG Staff must consider the planning time and put some consideration that J5 had plan in the JMAP process.

f. **Logistics Preparation and Capability Requirement**. The logistics preparation of the operational environment is a strategic level planning. It includes a series of steps aimed at identifying and determining the amount of logistics capabilities that are required in a specific operational environment. In general, anything is needed to identify, plan and prepare forward operating and logistic bases, determine first and second line logistics assets, select and improve the LOCs, foresee operational stock assets and anything else that can reduce the logistics footprint. Logistics preparation is the process of gathering data against pertinent operational environment components, analysing their impact on sustainment, and integrating them into tactical planning so that support actions are synchronised with the campaign or operations.

SUB-STEP 2: FRAMING

3005. Framing in JMAP is to ill-structured problem and it enables the commander and staff to develop an enhanced situational understanding. Framing is used to

deconstruct complexity and to ensure that the correct problems are fully explored. Framing is also used to identify the observed system and the desired system in the operational environment. Observed System is where the problem occurred that need to reshape to the system that can stabilised the situation. It is where the conflict takes place among the stakeholder and the environment. Desired System is the system that need to achieve during the campaign or operation.

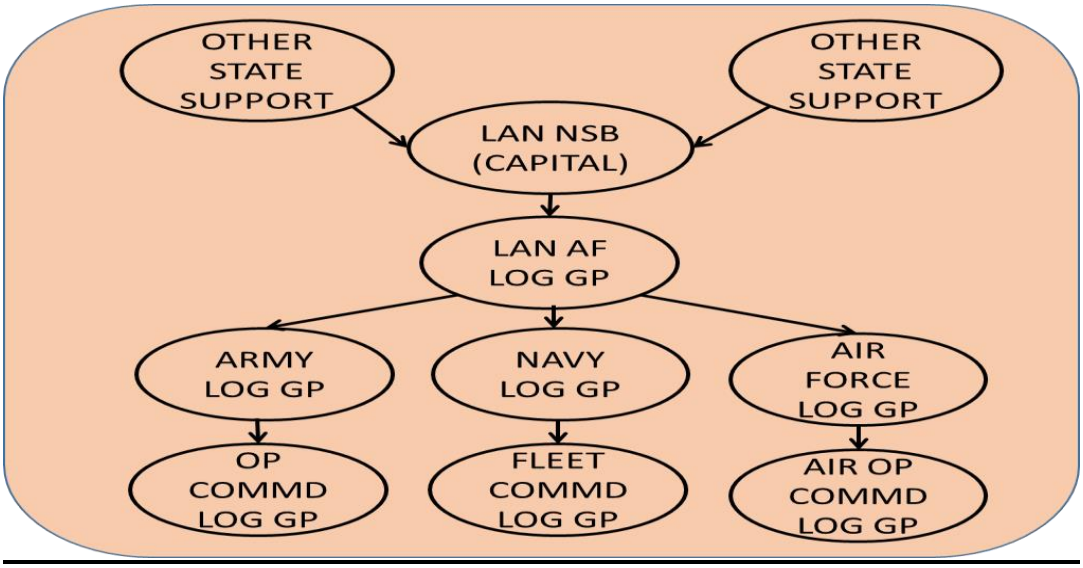
3006. In JLPP when the Op Staff is conducting the Framing, the JLPG Staff is to understand the Observed System and Desired System and enhance certain input as follows:

a. **Threat Support**. If the threat is an enemy, the JLPG staff is to identify the logistics system that the enemy adopts. A lot of questions to be asked in order to understand the enemy support system. Some of the examples of questions that may be used are:

1) How does their military logistics system work?
2) Who support their military logistics?
3) Is there any third party in the logistics system?
4) What type of structure or organisation are used in the military logistics system?
5) Do the Nationals support the military logistics?

b. **Illustrated The Threat Logistics Support**. The illustration is to better understand the logistics support that the adversary operates. In this situation the JLPG staff should conduct and analyse on how to take an advantage to

use their system if the environments or situation permit. Figure 3-6 Threat Logistics Support System and Their Facilities.



Ser	Facilities/Installation	Description	Condition
1.	Airport/Airfield		
	a. Saga Airport	State Airport	Very Good
	b. Renai Airfield	Town Airfield – 500 m	Good
2.	Port		
3.	Oil Refinery		
4.	Rail Road		
5.	Hospital		
6.	Water Point		

Figure 3-6: Threat Logistics Support System and Their Facilities

SUB-STEP 3: CONFIRM THE DESIRED CAMPAIGN OR OPERATION END STATE

3007. A clearly defined end state will be the output of JMAP step 1 in sub-step 3. It is conducted by the Op Staff that determine the desired end state. The end state involves analysing the superior commander's intent and the national or military strategic objectives.

3008. To derive end state, the Op Staff should determine the purpose or the reason to conduct the campaign or operation and the method is broad description on how the mission must be achieved. In certain cases normally the end state will appear in the ID. Figure 3-7 shows an example of desired end state at strategic and operational level.

Example of Strategic Level End State
Enduring regional security is achieved where external threats to partner nations is minimised.

Example of Operational Level End State
External threats have been reduced enabling the conditions for a lasting political solution to ensure regional security, safety and prosperity for all.

Figure: 3-7: Example of Strategic and Operational End State

3009. JLPG Staff then is to confirm the desired end state either at strategic or operational level before proceeds on the logistics planning process. The end state

laid down must be firmed and if the end state are changed or altered, the planning process should be paused until it is firm.

SUB-STEP 4: LOGISTICS IN WARNING ORDER DEVELOPMENT

3010. The Op staff will develop a warning order and distribute it to the component commander. This is to warn the component commander and his/her unit to get prepared for the campaign or operation. The JLPG Staff need to contribute some logistics input inside the warning order. The input will be used by the component commander to be prepared logistically within their means.

3011. Some of the input need to be highlighted are as follow:

a. Duration of the campaign or operation.
b. Time to move.
c. Some special equipment to be utilised.
d. Vaccination program if any.
e. FIT.
f. Equipment synchronisation between the services.
g. Other logistics and admin requirement.

LOGISTICS SCOPING AND FRAMING BRIEF

3012. Logistics scoping and framing is conducted by JLPG that assists the JOPG in JMAP process. The JOPG will brief the output of Step 1 – Scoping and Framing to the commander. Then the JLPG will brief the commander on the output of logistics

scoping and framing. There is no specific format for this brief, however the briefing is to ensure the commander understand the situational operational environment.

Annexes:

3A. Logistics Scoping and Framing Aide Memoire.

3B. Suggested Scoping and Framing Briefing Format.

ANNEX A TO

CHAPTER 3

LOGISTICS SCOPING AND FRAMING AIDE MEMOIRE

INPUTS	STEPS AND ACTIVITIES	OUTPUT
(a)	(b)	(c)
CDF ID ACOS MAF-DLD Guidance Immediate Commander Guidance	1. **Scoping** a. Logistics initial guidance b. Logistics planning limitation c. Status of logistics readiness d. Time constraint and planning consideration e. Logistics preparation and capability requirement	Update LOGFAT Update LAOE
Op Staff Output Framing	2. **Framing** a. Threat Support b. Illustrated the threat logistics support	
Op Staff output the desired end state	3. **Confirm Desire End State** a. Purpose b. Method c. End State	

	4. **Logistics in Warning Order Development** • Logistics input to WngO. a. Duration of the Operation b. Time to move c. Special equipment required d. Vaccination program e. FIT f. Other admin requirement	Update WngO

ANNEX B TO

CHAPTER 3

SUGGESTED SCOPING AND FRAMING BRIEFING FORMAT

Subject	Items	Remark
(a)	(b)	(c)
1. Scoping	a. Logistics initial guidance b. Logistics planning limitation c. Status of logistics readiness d. Time constraint and planning consideration e. Logistics preparation and capability requirement	
2. Framing	a. Threat Support b. Illustrated the threat logistics support	
3. Confirm the Desire Campaign or Operation End State	a. Purpose b. Method c. End State	
3. Logistics in Warning Order Development	List of logistics input to be include in WngO a. Campaign or operation duration. b. Time to move. c. Some special equipment to be utilise. d. Vaccination program if any. e. FIT. f. Equipment synchronisation between the services. g. Other logistics and admin requirement	

- **The Briefing Will Be Given In Line With JMAP Step 1**

CHAPTER 4

MISSION ANALYSIS

INTRODUCTION

4001. Successful mission analysis requires prior preparation, professional competence and the identification of the operation's purpose as well as all essential tasks. The Logistics staff should be organized and prepared to plan – all documents related to the mission, Joint Force Area of Operation (JFAO), Area of Influence, Area of Interest (AI), along with standing operating procedures (SOPs), operation plans, doctrinal publications, technical manuals, and reference materials) should be available to begin mission analysis. A thorough mission analysis helps focus the efforts of the commander and staff, saving time with increasing tempo. Comparison between JMAP Step 2 and JLPP Step 2 are shown in Figure 4.1 below:

JMAP	JLPP
Step 2: MISSION ANALYSIS	**Step 2: MISSION ANALYSIS**
SS1. Review the Situation	SS 1. Review Log Situation
SS2. Derive and Analyse COG	SS 2. Confirm COG & CF
SS3. Determine Own Mission	SS 3. Identify Log Mission
SS4. Determine Objective	SS 4. Confirm Operational Objectives
SS 5. Identify and Analyse Task	SS 5. Identify and Analyse Log Task
SS 6. Determine Limitations	SS 6. Determine Log Limitations

SS 7. Identify Critical Facts and Assumptions	SS 7. Identify Log Facts and Assumptions
SS 8. Determine DP	SS 8. Confirm DP, LOO and Determine CLE
SS 9. Develop LOO	SS 9. Develop Log LOO

Figure: 4 -1 Comparison JMAP Step 2 and JLPP Step 2

4002. Mission Analysis in JLPP requires input from all supporting staff from J1, J4 and J9 to provide 'situational awareness' required in continuing the process. For example, J1 staff will advise on legal, religious and personnel aspects while J4 staff will provide more on logistics support system and J9 will emphasis on health issues. JLO will provide intelligence logistics to ACOS J4 and staff with a clear picture of the operational environment. By analysing the friendly forces of COG, CC, CR, CV and potential DP, the Logistics Planner is able to identify the supporting system in joint operations. JLPP Mission Analysis provides a platform that support operational COA and helps to focus on how logistically planning by producing the COLS. Mission Analysis Aide Memoire as per **Annex A**.

SUB-STEP 1: REVIEW THE LOGISTICS SITUATION

4003. Logistics situation review involves through the JLO process. These updates take the form of briefs that include the review of the operational environment, own forces, and time analysis. It also includes own force COG and CV, state of manoeuvre, logistics capabilities and moral. With these inputs the Logistics Planner

can identify the critical logistics gap that will help them to make a final decision and advice.

a. **Review the Operational Environment**. The operational environments is based on the JLO product that was identified in an operational environment and determined the ALI. The ALI will be further analysed to determine critical operational environment and geographical on logistics shortfalls as well as assumptions. Details of the analysis is illustrated in Figure 4-2.

Items	Area	Log Shortfall	Assumptions
Water	MAZURI IS	No Potable Water	Need to use potable water
Fuel	MAZURI IS	Only 1 x Depot Fuel in Airport DAMAZ	Insufficient Fuel for Fighter
Sea Port	MAZURI IS	Port Duri - No Fresh Water	Ship to equip more water
		Port Daud - Good Facilities	
		Port Blue - Limited Power Supply	Need to use Generator
Airfield			
Health Facilities			
Road Network			

Figure 4-2: Analysis on Operational Environment

b. **Analyse Own Forces**. Analyse on own forces is to determine whether the forces are at an appropriate level of readiness with sufficient logistics resources to conduct joint operations. Analyse of own forces are shown in Figure 4-3. The sub-step examines the four aspects of own force capability as follows:

(1) Examines the friendly COG and the CCs that characterise the COG. This is conducted by Op Staff and need to be confirmed by Log Staff.

(2) Examines the availability, capability and disposition of assets. This is conducted by Op Staff and Log Staff.

(3) Examines logistics capabilities by Log Staff.

(4) Determines the capability of the force by Op Staff and Log Staff.

Bil	Force Capabilities	Asset/Unit	Log Capability	Disposition
1.	Amph Op	2 x MPCSS	Log and Pers Move	KK
		5 x AAV	Pers Move from ship to shore	KK
		4 x Frigate	Sea Control, Sea Denial	Langkawi
		8 x FAC (M)	Sea Control, Sea Denial	Lumut
		4 x Tanker	Fuel Sp	KK
		10 x F 18	Secure ALOC	Butterworth
		8 x Sukhoi	Secure ALOC	Gong Kedak
		3 x Amph Bn	Landing Troop	Kuantan
2.	Airborne Op / Air Landed Op	10 x C 130	Air Lift	Subang
		2 x A400M	Air Lift	Subang
		3 x Para Bn	Para Troop	Malacca
		2 x AAR	Air Refueling	Subang
3.	Mine Laying & Mine Counter	3 x MCM/MCMV	Mine Laying and counter measure	Lumut
4.	Air Lift & Strike	10 x MIG	CAP, CAS, SEAD	Kuantan
		8 x Sukhoi	CAP, SEAD	Kuantan
		8 x C 130	Air Lift	Subang
		13 x Nuri	ISR, Airlift, CSAR	Sg Besi
5.	ISR	2 x Submarine	Information gathering	KK
		Fighter AC	Information gathering	Butterworth
		SF	Information gathering	Malacca

Figure 4-3: Analysis on Own Forces

c. **Time Analysis**. Time is the most critical non-renewable resource possible be exploited by the commander. The objective of this analysis is to use the available time more effectively to support the operation. The Logistics Planner must consider all timing before the operation start. Therefore the establishment of a planning timeline is one of the important early decisions making by a commander. Certain issues that should be address are key timings, distances within the ALI, assembly and preparation of own force, duration of the operation along with some timing allowances for emergency situation. Examples of time analysis is shown in Figure 4-4.

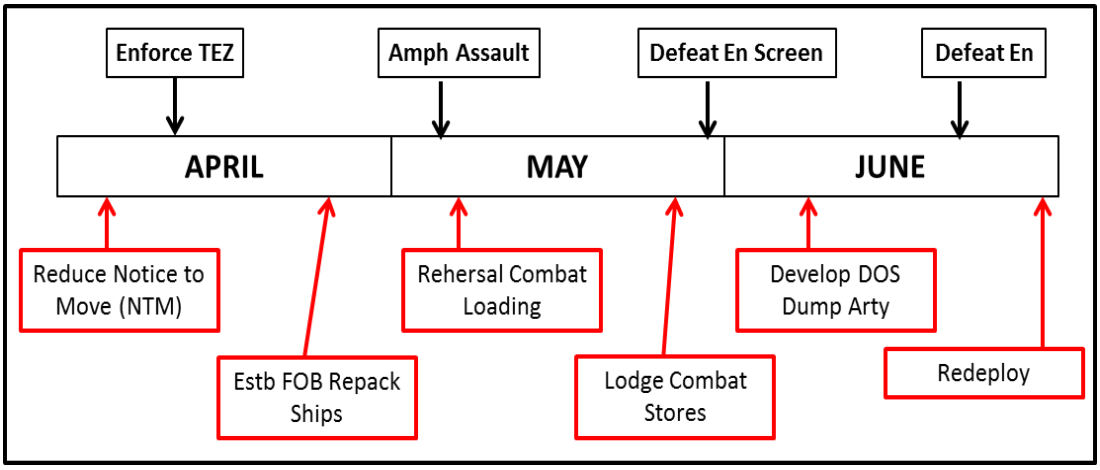


Figure 4-4: Time Analysis

SUB-STEP 2: CONFIRM COG AND CRITICAL FACTOR

4004. JLPP will not search for Log COG. This is to ensure the logistics planner is in line with the Op Staff. The logistician used operational COG to acquire information from the Op Staff regarding how the operation is being planned base on mission.

4005. **Confirm COG**. Confirming COG involves JIPOE and JLO processes that would confirm the enemy COG and own COG. The commander's intent must be related to both the enemy and friendly COG. This is to ensure the enemy's operational level COG is exploited whilst protecting the friendly COG. For own COG is to analyse functional areas for logistics mitigation. This is to ensure the COLS would match the commander's concept of operation.

4006. **Review and Updated COG Analysis**. In order to support the operation, Logistics Planner must identify and analyse Own CC to subdue enemy strength and reduce risk. From CC the planning staff will identify CR, an operation activity, to achieve the main mission. CR may then be further broken down into individual elements in order to allow detailed planning. These elements are CV, a sub-element of a CR that is vulnerable or that can be made vulnerable. Logistics Planner will invariably be a friendly CC and may even be the COG. Logistics staff must complete a thorough analysis of the logistics system and use the indicative Assign Force to determine the broad order logistics support that will be needed to achieve the desired effect. This is to ensure the commander is aware of the nature of the logistics CRs and CVs which may have operational impacts. Example Own COG Analysis are shown as Figure 4-5.

COG	CC	CR	CV	Log Capabilities
JTF 5	Air Superiority	Aircraft	Pilot	1. All pilots are high moral. Vaccination had been given. 2. Aircraft maintenance is updated. 3. Aircraft ammo enough. 4. Ground Crew available in 3 shifts. 5. All facilities and MHE of Air Field are available. 6. Network of command & control are in place. 7. ATC crew and facilities are available.
			Maintenance	
			Ammo	
			Ground Crew	
			POL	
		Air Field	Facilities	
			MHE	
			Comm	
			ATC	
	Projection of Maritime Force Elements	Vessel	POL	
			Maintenance	
			Ammo	
			Crew	
		Port	MHE	
			Water Supply	
			Facilities	
		C2	Networking	
			Distance	
	Manoeuver ability of Land-based FEs	Ampb Op	POL	
			Troops	
			Ship	
			Ammo	
			Port	
		Abn Op	Troops	
			AC	
			POL	
		Land Stike	Tank	
			Ammo	
			Troops	

Figure 4-5: Example Own COG Analyses

SUB-STEP 3: IDENTIFY LOGISTICS MISSION

4007. The superior commander's intent for strategic and operational level provides direction and intention. Logistics Planner extracts logistics information and direction as well as analyses sustainability guidance. From these intents the Logistics Planner must turn the statements into logistics statements with purpose, method, end state and mission statement.

a. The purpose determines the reason for the force to be the logistics support during the operation.

b. The strategic guidance ensure the sustainment of the operation. The method does not give detailed tasks or actions, rather it uses a verb to support and sustain the operation logistically.

c. The end state is the posture at the end of the operation to enable the logistics support to continually provide support for termination/reconstitution or the next operation. It defines the success criteria for the logistics system and achieves the commander's desired state.

d. Towards the end of this analysis, it is to confirm the commander's mission statement. The statement may be given by the superior commander or may need to derive from the commander's intent. The mission statement provides a task with a purpose and can usually be expressed using elements

such as **WHO, WHAT, WHERE, WHEN** and **WHY**. Example of Logistics Mission Statement is shown in Figure 4-6.

An Example of Logistics Intent

Purpose: To provide logistics support for JTF 3 during Op Cobra.

Method: The logistics support for JTF 3 during Op Cobra will be conducted by forming-up JLG in the vicinity of Tg Gelang Area. From JLG the logistics support system will be coordinate through various services.

Endstate: The logistics requirement for JTF 3 during Op Cobra can be conducted successfully

An Example Logistics Mission Statement

JLG is to provide logistics support to JTF 3 during the defend of Langkawi by 1 Apr XX in order to protect Malaysian Sovereignty

Figure 4-6: Example Logistics Mission Statement

SUB-STEP 4: CONFIRM OPERATIONAL OBJECTIVE

4008. JLPG Staff must confirm the operational objective that has been derived from the JMAP process. To confirm is to understand how the objective can be achieved. With the operational objective, the logistics planner can roughly identify potential logistics activities to support the operational objective. Example of operational objective are shown in Figure 4-7.

Operational Objective
1. MALAYSIA sovereignty has been protected.
2. Non Combatant Evacuation operations have been successfully conducted.
3. Legal governance in LANGKAWI IS has been restored.
4. Redeployment of MAF asset back to home base.

Figure 4-7: Example Operational Objective

SUB-STEP 5: IDENTIFY AND ANALYSE LOGISTICS TASK

4009. Mission Analysis enables commanders at all level to clearly identify the log specified, implied and essential task required to satisfy the mission. The tasks are defined as:

a. **Specified Tasks**. Identify and analyse superior commander's direction for specified logistics tasks and with reference to operation requirement.

b. **Implied Task**. These tasks are not specified by the superior commander, but are those that are necessary in order to meet the superior commander's intent. Not all implied tasks will be identified during mission analysis as some will be revealed during COA Development and COA Analysis. However an attempt to identify all implied tasks must be made during mission analysis as this provides the basis from which the COA is developed.

c. **Essential Task**. These tasks are those that must be successfully conducted to achieve the mission and superior commander's intent. Essential tasks are identified from a list of specified and implied tasks and should be compared to the mission statement to ensure it is still the most appropriate expression of the commander's intent. Example of all task are shown in Figure 4-8.

Specified Task	Implied Task	Essential Task
Establish FOB	Rapid stocking of units	Establish FOB
HNS is available	Protect LOC	Protect LOC
LOTS to be Establish	Reece potential logistics infrastructure	Forward surgical presence
Strategic Lift Commence for Initial move	Establish beachhead	Establish beachhead
	Forward surgical presence and CASEVAC system	CASEVAC System
		HNS is available
		LOTS to be Establish
		Strategic Lift Commence for Initial move

Figure 4-8: Specific, Implied and Essential Tasks

SUB-STEP 6: DETERMINE LOGISTICS LIMITATIONS

4010. Freedom of action involves identifying the parameters in which a commander can act to achieve the superior commander's intent. This will involve the consideration of factors which may limit possible options.

a. **Limitations**. These sub-steps require JLPG to take pre-emptive action on logistics problem. They are divided into two to be described and analysed as follows:

(1) **Constraints**. These are characteristics that cannot be changed that affect the logistics support of the operations such as distances, timings and limitations of assets. Example of constraints are as follows:

(a) Limited availability of reinforcement.

(b) Limited logistics assets.

(c) Rainy monsoon affect movement.

(2) **Restrictions**. These are situations that a superior commander would impose, prohibiting activities which affect the way a subordinate commander can conduct the operation. Restrictions may be represented back to the higher authority for change. Example of restrictions are as follows:

(a) No use of neutral mainland bases.

(b) Logistics must be sea based.

(c) Campaign must not affect economy.

b. **Analyse Acceptable Degree of Risk**. Based on the limitations analysis above, the Logistics Planners will develop what is the acceptable risk that affect the commander's intent in terms of cost versus gain and measure against the operational requirement along with mission. List of mitigating such as reserve, redundancy and alternate resources of supply to reduce logistics risks must be identified.

SUB-STEP 7: IDENTIFY LOGISTICS FACTS AND ASSUMPTIONS

4011. The JLPG commence gathering distribution-related facts and assumptions during JLO. This will continue to monitor them throughout planning in order to populate the LOGFAT running sheet. They should attempt to turn assumptions into facts through investigation and analysis.

a. **Critical Facts**. The facts are statements of known data that had been analysed and confirmed. The data was collected from the commander's mission statement and other sources. For example the capability assets that the units had to support in the operation can be assessed as tangible and

intangible factors. So it must be confirmed and ratified. Example of critical facts are as follows:

(1) Current Day of Supply (DOS) are constraints.

(2) Limited MAF strategic movement capabilities.

(3) Limited fuel distribution/storage in JFAO.

(4) No immediate supply once in JFAO.

b. **Assumptions**. These are developed as substitutes for facts to allow planning to continue. An assumption is only appropriate if it is valid. Valid assumptions are those that have solid foundations and strong likelihoods of being confirmed as facts. For example the facilities at the port that are used to support the movement of cargo is a valid assumption unless there is a specified reason to identify the facilities (facts). Example of assumptions are as follows:

(1) Airfield fuel tank in good repair.

(2) What is robust enough to carry military load.

(3) HNS to provide C3I and logistics support.

(4) Island X airfield is capable as FOB.

(5) Able to complete before monsoon.

a. Example of Logistics Facts, Assumptions and Task (LOGFAT) List as shown in Figure 4-9.

ITEM / ISSUE	FACT	ASSUMPTION	DEDUCTION	OUTPUT / ACTION
Water	No potable water in country MAZURI	May need to use bottled water	Need to determine how long before producing own water	Calculate tonnages for deployment
				Possible CCIR
		Attempt to source in theatre	Water purification equipment needed	Task Engr
			Water quality to be tested	
			Storage may be an issue	Task for JLCC
Fuel	Only 1 Fuel Depot of 20,000 ltr at airport DAMAZ		Insufficient fuel for fighter ops	Possible CCIR
		Fuel holdings can be improved	Potential task for CSS	Confirm holding capability
			May need to construct permanent tanks	Potential Engr task

Figure 4-9: Example Log Facts, Assumption and Task (LOGFAT) List

SUB-STEP 8: CONFIRM DP, LOO AND DETERMINE CRITICAL LOGISTICS EVENT (CLE)

4012. **Confirm DP and LOO**. A DP is the achievement of a desired effect against either single or multiple CCs. DPs need not be physical effects; for instance, they may include the degradation of the adversary's will to fight. When creating DPs, planners should always:

a. Define them in terms of their effect on the adversary, environment or friendly forces.

b. Ensure that they are measurable.

c. Clearly articulate their purpose.

4013. Operational level planning aims to exploit an adversary's CCs whilst protecting one's own in a sequence of DPs known as a LOO. LOO ensures that events are analysed in a logical progression, establish the interrelationship between DPs, links them to construct a critical path to the COG and describes how military force is applied in time and space through the DPs.

4014. Op Staff will develop DP and the JLPG Staff will determine CLE to support each DP. Logistics Staff will analyse the interrelationship between DP and CLE in establishing the Logistics LOO. Sequencing CLE into Logistics LOO which will

identify time and location where logistics capabilities cannot meet the desired operational tempo. Example DP and LOO shown as Figure 4-10.

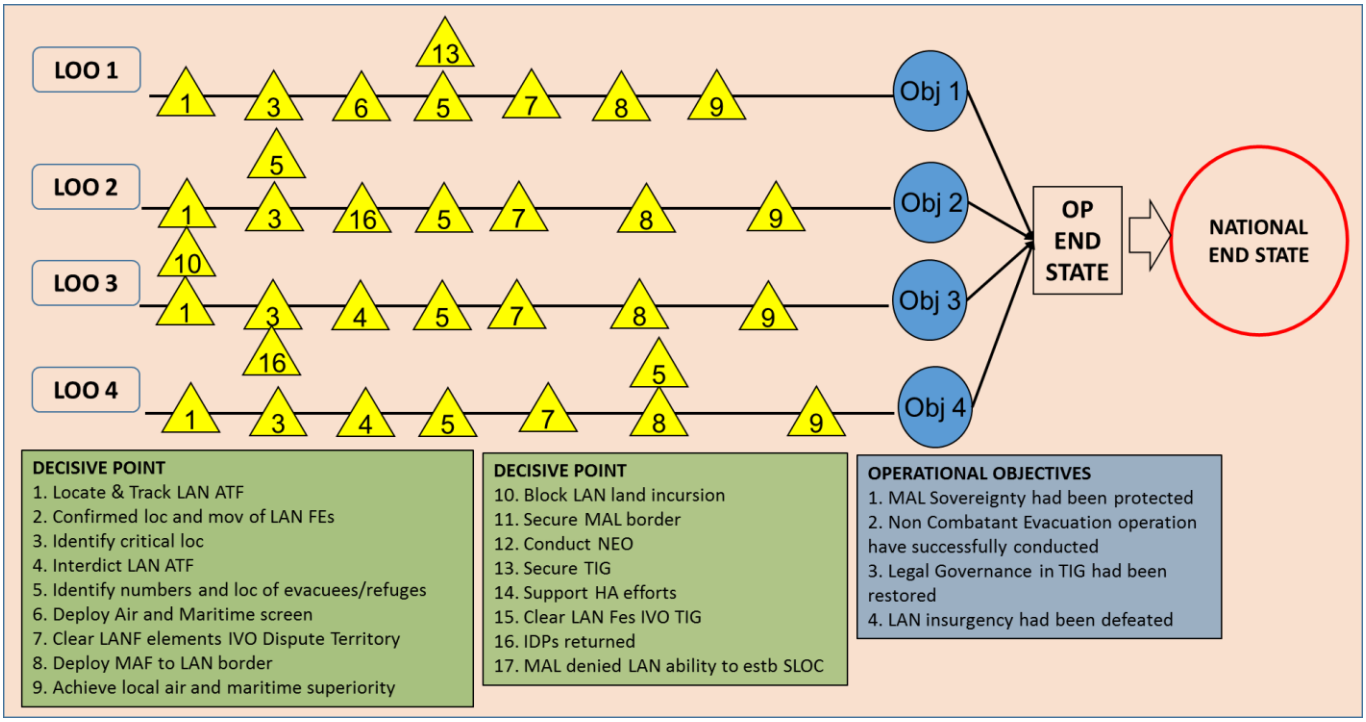


Figure 4-10: Example DP and LOO

4015. JLPG will develop CLE base on each DP that has been confirmed. The success of each DP is usually dependent on supporting logistics enabling events. CLEs are planned before, during, after and for the next DP will apply equally to campaigns, operations and operational phases.

a. **Before**. CLEs before a DP that can be achieved typically include:

(1) Individual and collective force preparation.

(2) Cross loading and back loading of stores, equipment and patients.

(3) Dumping.

(4) Minor infrastructure upgrades.

b. **During**. CLEs during the achievement of a DP typically include:

(1) FE and equipment movement.

(2) Resupply.

(3) Equipment recovery and repair.

(4) Casualty treatment and evacuation.

(5) Immediate reinforcement.

(6) Equipment and infrastructure running repairs (e.g. battle damage repair of a runway).

c. **After**. CLEs that are required after the completion of a DP could include:

(1) Replenishment.

(2) Re-organisation of FE and supporting logistic elements.

(3) Force rotation.

(4) Higher grades of repair and maintenance.

(5) Refurbishment of degraded infrastructure.

d. **Next**. CLEs that may be required before the execution of the next DP typically include:

(1) Stockpiling through the anticipation of new or changed demand profiles.

(2) Rotating equipment back to the NSB for repair pool action.

(3) Significant upgrades of infrastructure.

(4) Rest and recuperation of individuals and Force Assign.

4016. CLE are derives from each DP at different time space. It derives from before, during, after and next DP. Figure 4-11 provides diagrammatic depiction of the types of CLE tasks that planners analyse.

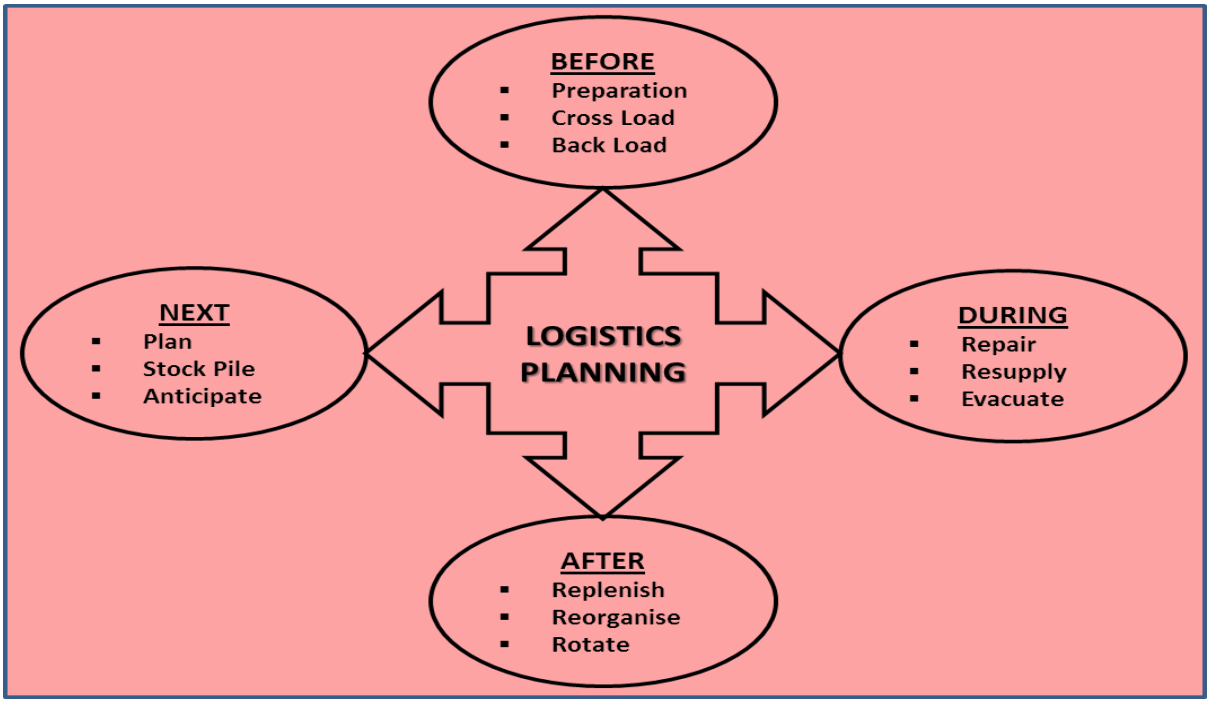


Figure 4-11: CLE Analysis

4017. Using the scenario in Figure 4.8, we can take DP 8 as an example. DP 8 is to deploy MAF at LAN Border. CLEs that could support this DP include:

a. **Before**. The before CLEs may include the establishment of an FOB, movement of logistics support to the FOB such as supply, maintenance

transport and health elements, development of infrastructure, movement and storage of ammunition at the FOB as well as replenishment of fuel tank holdings.

b. **During**. The during CLEs may consist of refueling and re-arming of aircraft, infrastructure maintenance, resupply of fuel and ammunition, return of equipment to the NSB and reinforcement of personnel and equipment.

c. **After**. The after CLEs may consist of major maintenance of aircraft, rotation and refurbishment of FE, cross loading of ammunition to the next main effort and the return of the FOB to pre-operation conditions.

d. **Next**. The next CLEs could include crew rest, build-up of stocks of additional fuel, and upgrades of aircraft parking or handling infrastructure

4018. CLE is a logistics activity or an event that supports the overarching LOO. It is developed by analysing the LOO and determining the CLEs that are required to support each DP (a CLE can support more than one DP). The CLE are then sequenced to ensure that logistics effects are delivering at the right time, place and condition. Figure 4-12 is an example list of CLEs that had been derived from DP. Figure 4-13 is an example of List of CLE Analysis Matrix.

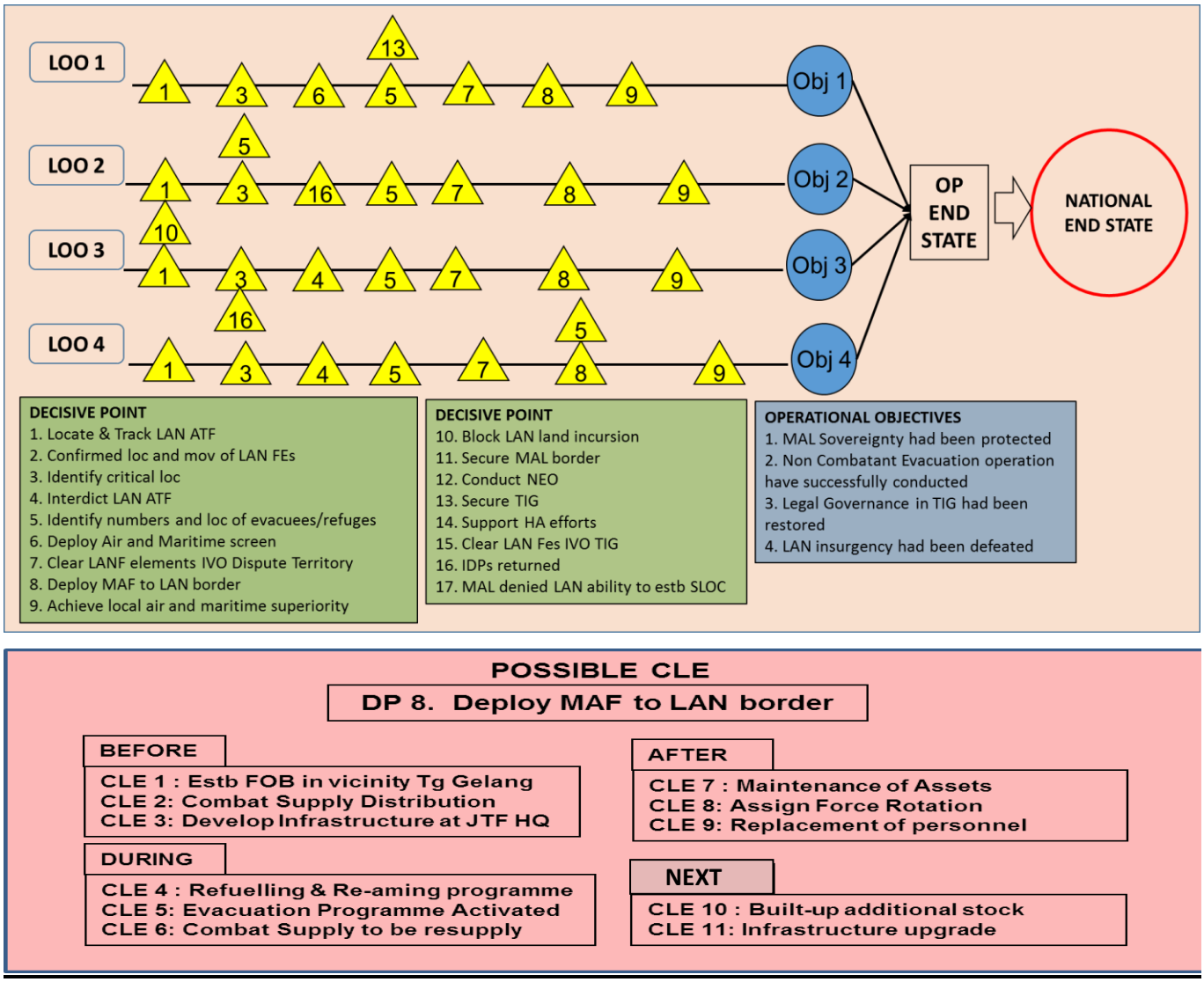


Figure 4-12: Example List of CLE derive from DP 8

DP	COA 1			
	Before	**During**	**After**	**Next**
DP 1	1. Prepare Stock, Combat Ammo, Rations, Water & POL 2. Movement – land, air & sea 3. Execute ISR 4. Prepare alternate supply point	1. Maintain stock level 2. Movement – land, air & sea 3. Resupp Combat Ammo, Rations, Water & POL	1. Maintain stock level 2. Replenishment 3. Movement – land, air & sea 4. Refurbishment	1. Built-up additional stock 2. Replace damage equipment 3. Upgrade Infra
DP 2	1. Prepare Stock, Combat Ammo, Rations, Water & POL 2. Prepare training equipment	1. Resupp Combat Ammo, 2. Resupp Ration, 3. Resupp Water & POL	1. Maintain stock level 2. Replenishment 3. Refurbishment	1. Replenishment 2. Reorganised log sp element
DP 3				
DP 4				
DP 8	1. Estb FOB IVO Tg Gelang 2. Combat Supplies Distribution 3. Develop Infra JTFHQ	1. Refueling and Re-aming Programed 2. Evacuation Activate 3. Combat Supply Resupp	1. Maintenance Asset 2. Assign Force Rotation 3. Replacement Personnel	1. Built up addtl stock 2. Infra Upgrade

Figure 4-13: Example List of CLE Analysis Matrix

4019. **CLE Synchronisation Matrix**. The list of CLEs allows for the commencement of the synchronisation of the operations and logistics efforts. Initially, the CLE allows for the identification of tasks that are required to support the operational LOO and can be represented by simple CLE Matrix (Figure 4-14). Then CLE matrixes migrate to Logistics Synchronisation Matrix in subsequent JLPP Step that aligns with the DP matrices developed by the operational staff. The CLE and logistics synchronisation matrix is an extremely important product because it serves as both a working document and a source document. It is a working document in the sense that the JLPG continues to populate and refine it throughout the planning process, as well as serves as the primary document from which to conduct the war game. Similarly, the logistics synchronisation matrix is a source document because the JLPG needs to continually refer back to it as the complexity of the COA expands.

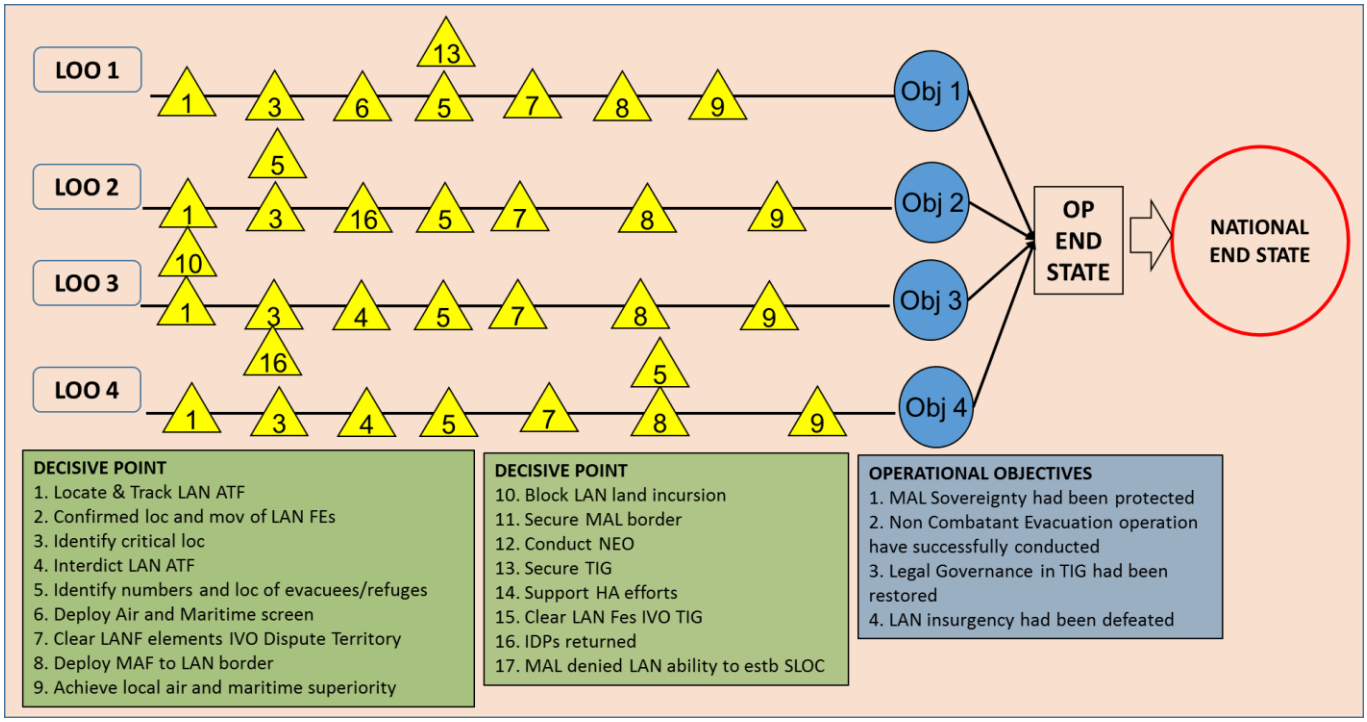
CLE Synchronisation Matrix for DP 8 (D-5 to D + 8)														
CLE	Before					During				After			Next	
	D-5	D-4	D-3	D-2	D-1	D	D+1	D+2	D+3	D+4	D+5	D+6	D+7	D+8
1	Establish FOB in vicinity Tg Gelang													
2	Combat Supply Stocking													
3	Develop Infrastructure at JTF HQ													
4						Refuelling & Re arming Prgm								
5						Evac Progm Activated								
6						Combat Supply to resupply								
7										Maint Assets				
8										Assign Force Rotate				
9										Pers Replacement				
10													Built up Stock	
11													Infra Upgrade	

Figure 4-14: CLE Synchronisation Matrix

SUB-STEP 9: DEVELOP LOG LOO

4020. To develop Log LOO, logistics planners should visualise how the logistics operation should progress, consider each CLE and determine the optimal sequence in which they should occur. CLE are grouped and organised along Log LOO based on purposed, functionality, force availability, geographical location or effect required to achieve the objectives. Initially, the Log LOO allows for the identification of tasks

required to support each Operational LOO. A particular CLE may be used across more than once. When structuring Log LOO, it is important that the activities events and effect outside of the military operating environment be considered, including the government's application of other element of national power. Figure 4-15 show the Operation LOO and Log LOO.



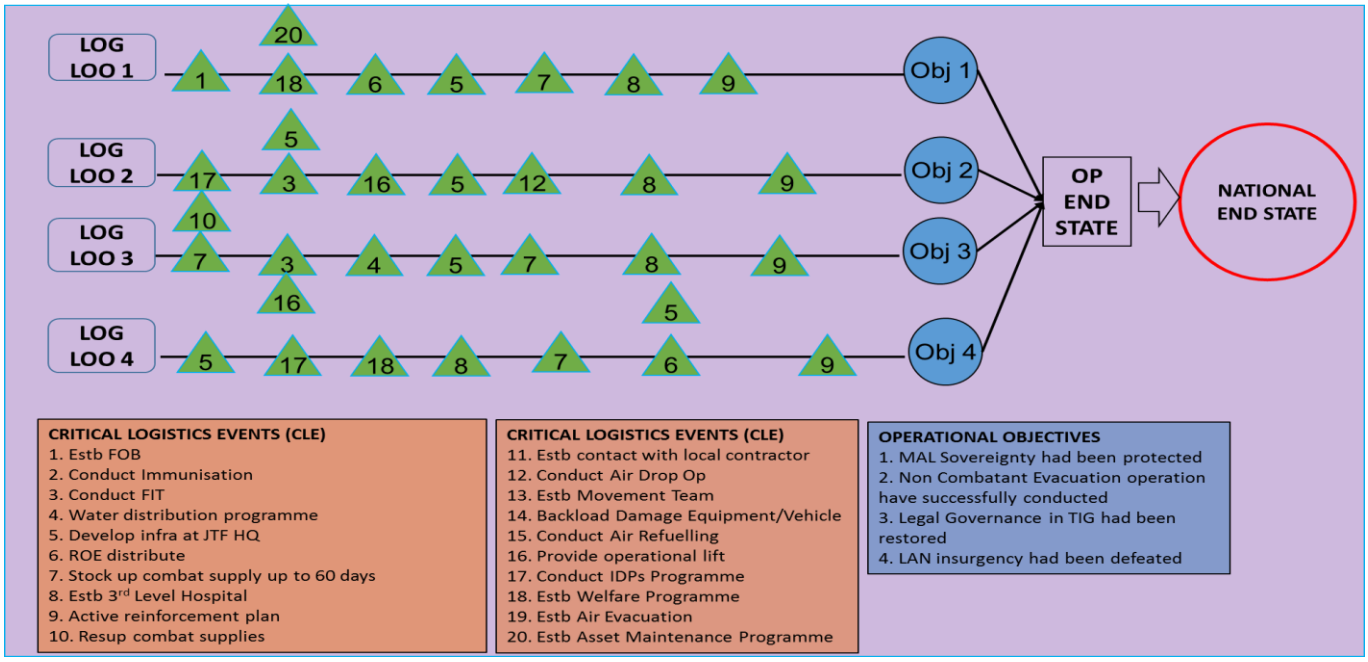


Figure 4-15: Operation LOO and Log LOO

DRAFT COMMANDER'S GUIDANCE

4021. The output of the Mission Analysis process is to prepare the Mission Analysis brief for ACOS J4 to brief JFC on logistics output or products developed in Mission Analysis. JLPG Staff will prepare the Mission Analysis brief base on the early planning in the process. The Mission Analysis will determine logistics mission statement, logistics tasks, logistics limitation, risk and CLE. This output is to be an input in developing COLS. Suggested Mission Analysis Format Brief as per **Annex B**.

Annexes:

A. Mission Analysis Aide Memoire.

B. Suggested Mission Analysis Briefing Format.

ANNEX A TO
CHAPTER 4

MISSION ANALYSIS – AIDE MEMOIRE

Inputs	Steps And Activities	Output
(a)	(b)	(c)
	1. **Review The Log Situation**	
JLO Product COG to CV (J5)	a. Review the operational environment b. Analyse Own Force (1) Own COG & CV (2) State Of Manoeuvre (3) Logistics Capabilities (4) State Of Morale	Submit RFIs Updated LOGFAT Early Assessment on Own Forces Broad Identification Logistics CVs and CCs
Strategic Guidance Time Analysis from J5 ALI & AEO Product JLO-Own Forces JMAP	c. Time and Space Impact on Resources Required to Support and Mount the Force (1) Key Timing (2) Distances (3) Assembly/Preparation Timings (4) Expected Duration of Ops (5) Planning Time	Logistics Planning Timeline Updated LOGFAT Updated COLS (commence during preliminary scoping)

JMAP	2. **Confirm COG & CF**	Updated LOGFAT
JMAP Strategic Guidance Confirmed Mission	3. **Identify Log Mission** 4. **Confirm Operational Objective**	Log Mission Updated LOGFAT
Superior Comd's Direction Input from J5	5. **Identify and Analyse Log Task** a. Specified Tasks b. Implied Tasks c. Essential Tasks	Updated LOGFAT List Specified, Implied and Essential Tasks Updated LOGFAT Updated COLS
JLO Product Updated LOGFAT Input from J2 & J5	6. **Determine Log Limitations** a. Limitations (1) Restrictions (Prohibit certain activities) (2) Constraints (affects our conduct of ops) b. Analyse Acceptable Degree of Risk	 Updated LOGFAT List mitigating option (reserve/redundancy/alternate sources of supply to reduce logistics risk
Updated LOGFAT JLO Product Review J5 Input	7. **Identify Log Fact and Assumption** a. Facts (known/measurable data, identify shortcomings) b. Assumptions (must be a viable substitute for facts)	 Analyse LOGFAT list and deduce tasks

JMAP DP and LOO	8. **Confirm DP, LOO and Determine CLE** a. Confirm DP & LOO b. Determine CLE i) Before ii) During iii) After iv) Next c. CLE Synchronisation	List of CLE with DP CLEs Matrix
List of DP and CLE	9. **Develop Log LOO** a. Operation LOO b. Log LOO	Pairing the Operation LOO and Log LOO with DP's and CLE's

ANNEX B TO

CHAPTER 4

SUGGESTED MISSION ANALYSIS BRIEFING FORMAT

Subject	Items	Remark
(a)	(b)	(c)
1. Log Situation	a. Logistics and Operational Environment (LAOE) a. Own Forces b. Time and Distance plan	
2. Confirm Operational Objectives	List down the Operational Objectives that have been confirm from Op staff.	
3. Confirm COG, DP and LOO	Confirmation COG, DP and Operation LOO from Op Staff.	
4. Logistics Mission Statement	a. Purpose b. Method c. End State	
5. Log Task	a. Log Specified Task b. Log Implied Task c. Log Essential Task	
6. Log Limitations	a. Log Constraints b. Log Restrictions c. Log Risk	

7. Log Fact & Assumptions	a. Log Facts b. Log Assumptions	
8. CLE	List of CLE's base on DP's	
9. Log LOO	Illustrated Operation & Log LOO	
10. Summary	a. ALI b. Own Forces Log Capability and Readiness c. Assets availability d. Combat Supply e. Log System f. HNS g. Health and Legal Issue h. Reinforcement and Replacement Programmed i. Risk j. Log Shortfall	

- **The Briefing Will Be Given In Line With JMAP Step 2**

CHAPTER 5

CONCEPT OF LOGISTICS SUPPORT (COLS) DEVELOPMENT

INTRODUCTION

5001. The primary goal of JLPG is to produce COLS for each COA. JLPG is to design a logistics support system capable of supporting JFC's Operations throughout the entire JFAO. The joint logistics system must be flexible enough to respond to changes in the Joint Operations Plan and should aid in generating tempo while increasing the endurance and operational reach of the force.

5002. JLPG use the outputs from JLO, Scoping & Framing, Mission Analysis, Commander Planning Guidance, Logistics Staff Estimate and JOPG COA to begin developing the COLS. JLPG should keep in mind they are doing concurrent planning with JOPG, therefore the planners must maintain two way communications to ensure proper coordination. The comparison of JMAP Step 3 and JLPP Step 3 is shown in Figure 5-1.

JMAP	**JLPP**
Step 3: COA DEVELOPMENT	**Step 3: COLS DEVELOPMENT**
SS 1. Review Commander's Guidance and Current Situation	SS 1. Review Commander's Guidance and Current Situation
SS2. Develop Detailed COA	SS 2. Confirm Detailed COA
SS3. Test COA	SS 3. Design and Develop COLS
	SS 4. Conduct Staff Check

	SS 5. Conduct Modal/Nodal Analysis
	SS 6. Develop Detailed COLS
	SS 7. Test COLS

Figure 5-1: Comparison JMAP Step 3 and JLPP Step 3

5003. Normally the JLPG staff will develop one COLS for each COA. It is often difficult to develop multiple COLS for one COA. Logistical infrastructure and distribution network characteristics, are coupled with the requirement to use multiple and simultaneous distributions means in order to support COA requirements. This may derive one COLS with multiple potential branches.

SUB-STEP 1: REVIEW COMMANDER'S GUIDANCE AND CURRENT SITUATION

5004. At this stage the JPLG should review the product JIPOE & JLO and JMAP & JLPP Mission Analysis. The product should be reviewed against Commander's Guidance. The JLPG should revise the output of each product especially the JLO and JLPP Mission Analysis. Both outputs are related with JIPOE and JMAP Mission Analysis. At the end of this activity, a cross-functional discussion should be held to update JLPG with the most up-to-date information before designing the COLS.

a. **Commander's Guidance**. JLPG should consider the latest guidance from Commander. Normally the latest guidance will derive from the output of briefing to Commander. After the briefing the Commander will definitely give his guidance to improve and to correct the staff output. If the previous

guidance does not contradict with the latest guidance, it should also to be considered.

b. **LOGFAT Updated**. JLPG Staff should have updated all information regarding the logistics issues in LOGFAT Sheet. All information regarding all issues and how to overcome them had been identified. Example of the LOGFAT Sheet can be viewed at **Annex A to Chapter 2**.

c. **Logistics Analysis of Operational Environment (LAOE) Updated**. The LAOE was developed in the JLO process previously. At this step the LAOE should be updated on all information. The information is currently are facts and able to be used in designing the COLS. The format of LAOE can be viewed at **Annex B to Chapter 2**.

SUB-STEP 2: CONFIRM DETAILED COA

5005. JLPG staff should seek the detailed COA from JOPG. The COA is the output of third step in JMAP process. The detailed COA should cover the following output:

a. Sequencing.

b. Phasing.

c. Main Effort.

d. JFAO.

e. Branches & Sequel.

f. DP.

5006. Figure 5-2 to 5-6 is an example of detailed COA that had been produced based on JMAP process.

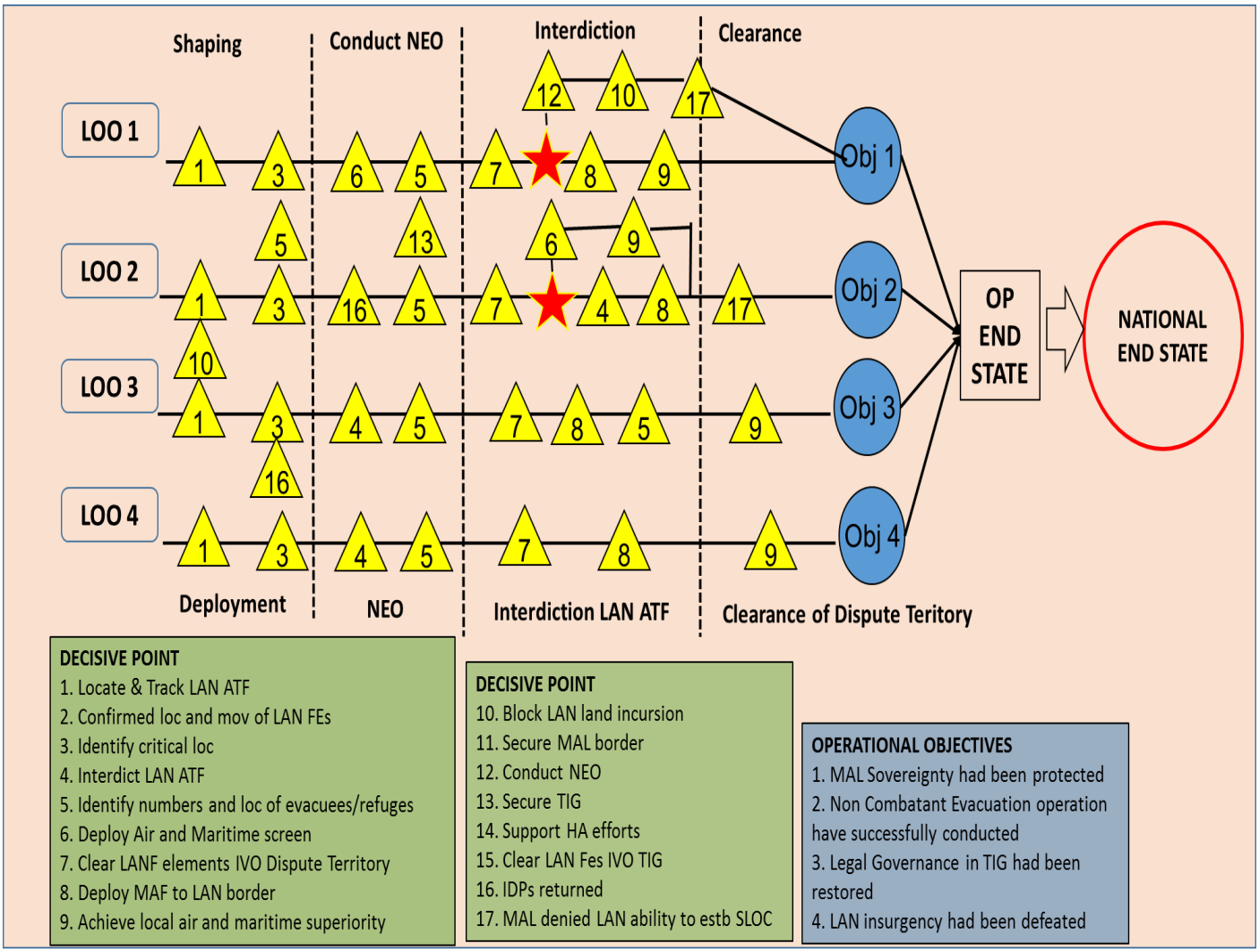


Figure 5-2: Detailed COA

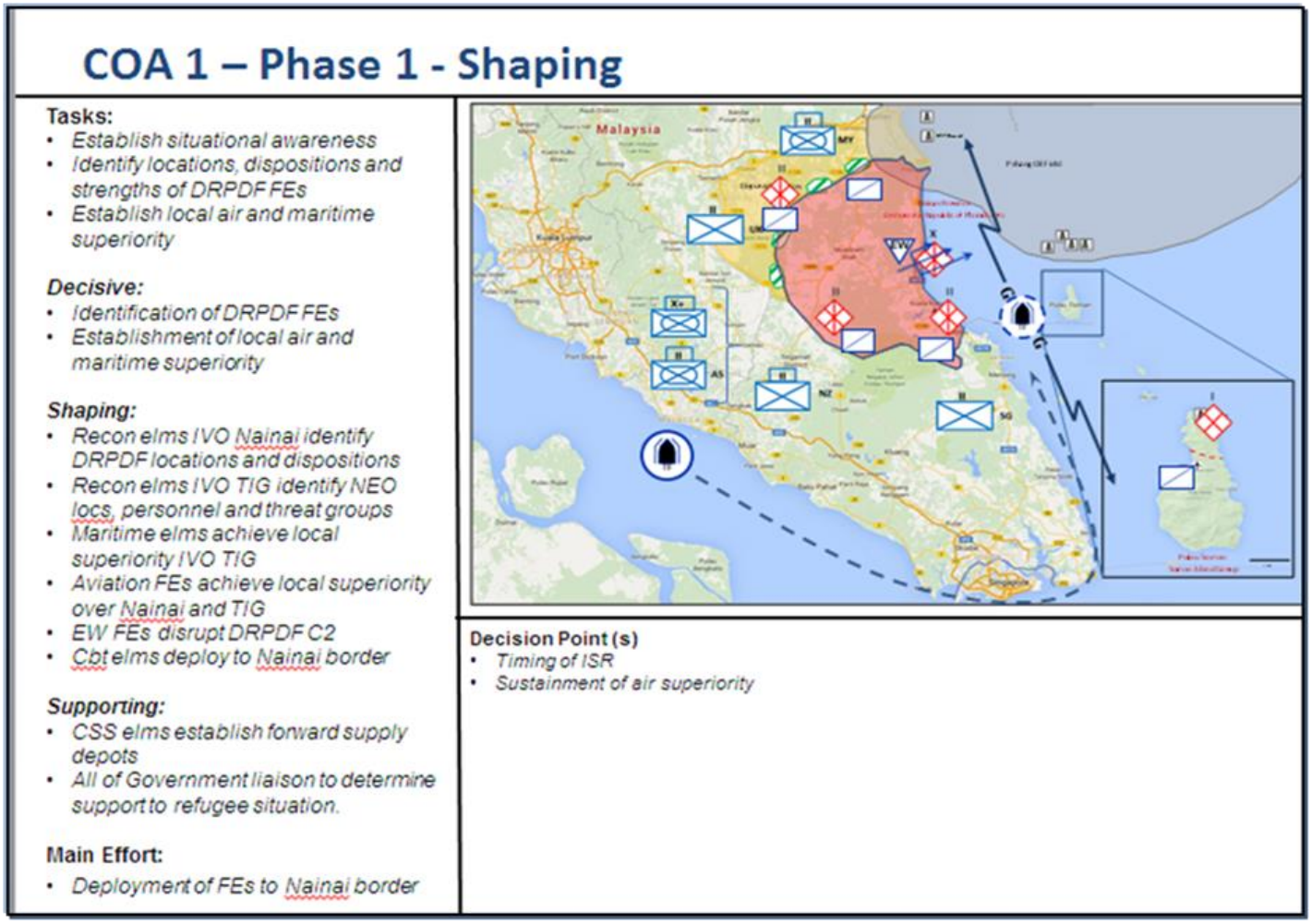


Figure 5-3: COA Phasing (1st Phase – Shaping)

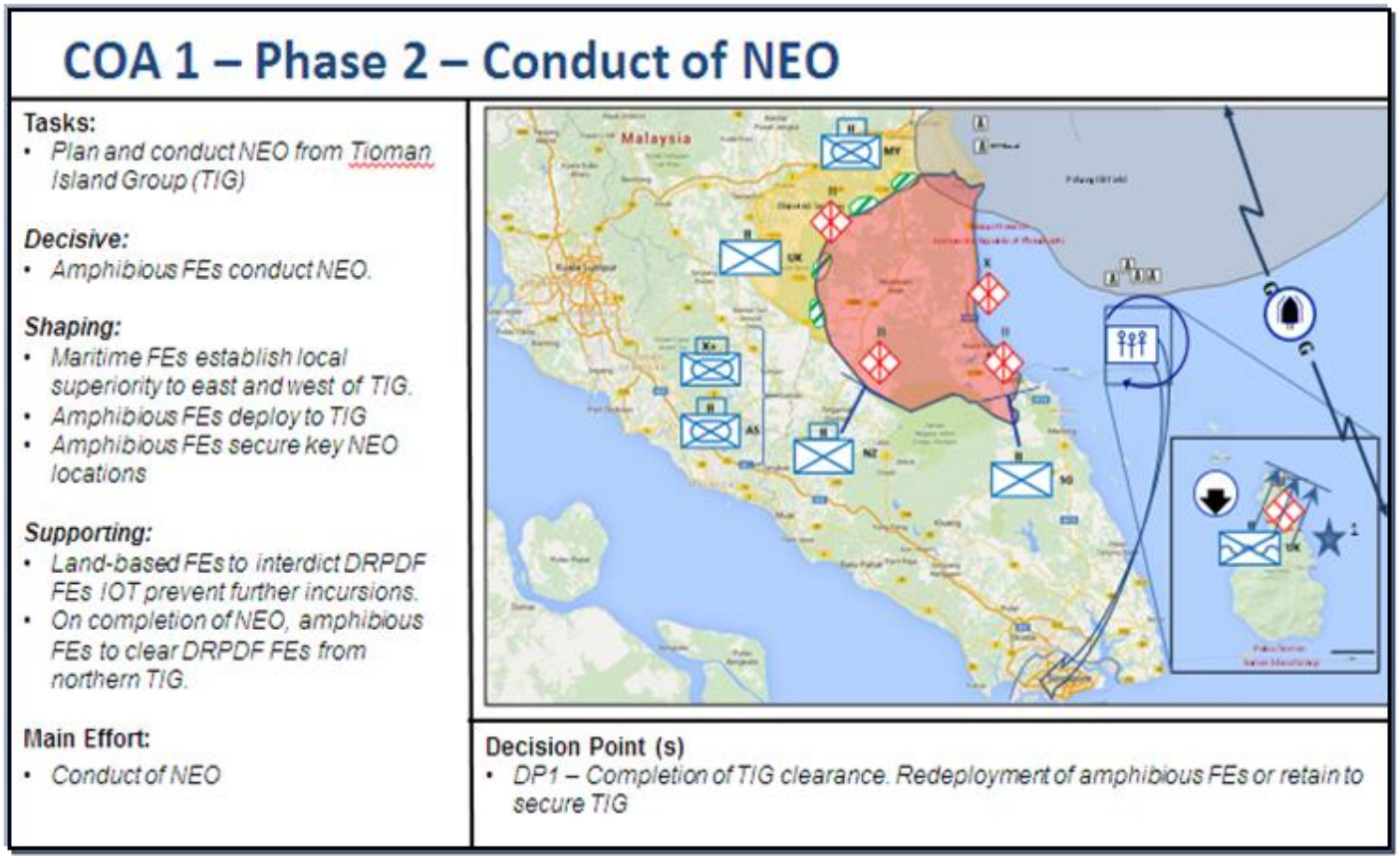


Figure 5-4: COA Phasing (2nd Phase – Conduct of NEO)

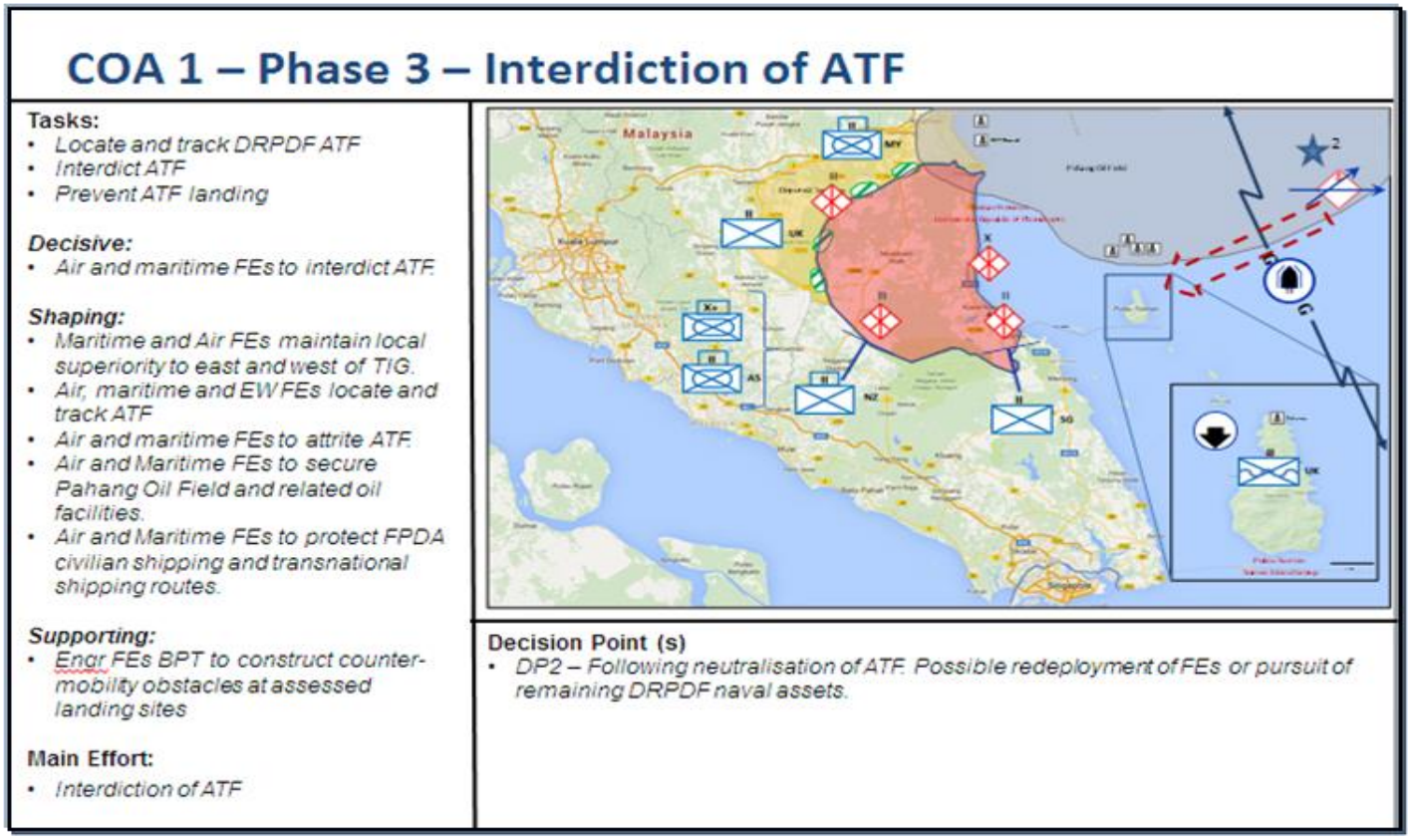


Figure 5-5: COA Phasing (3rd Phase – Interdiction of ATF)

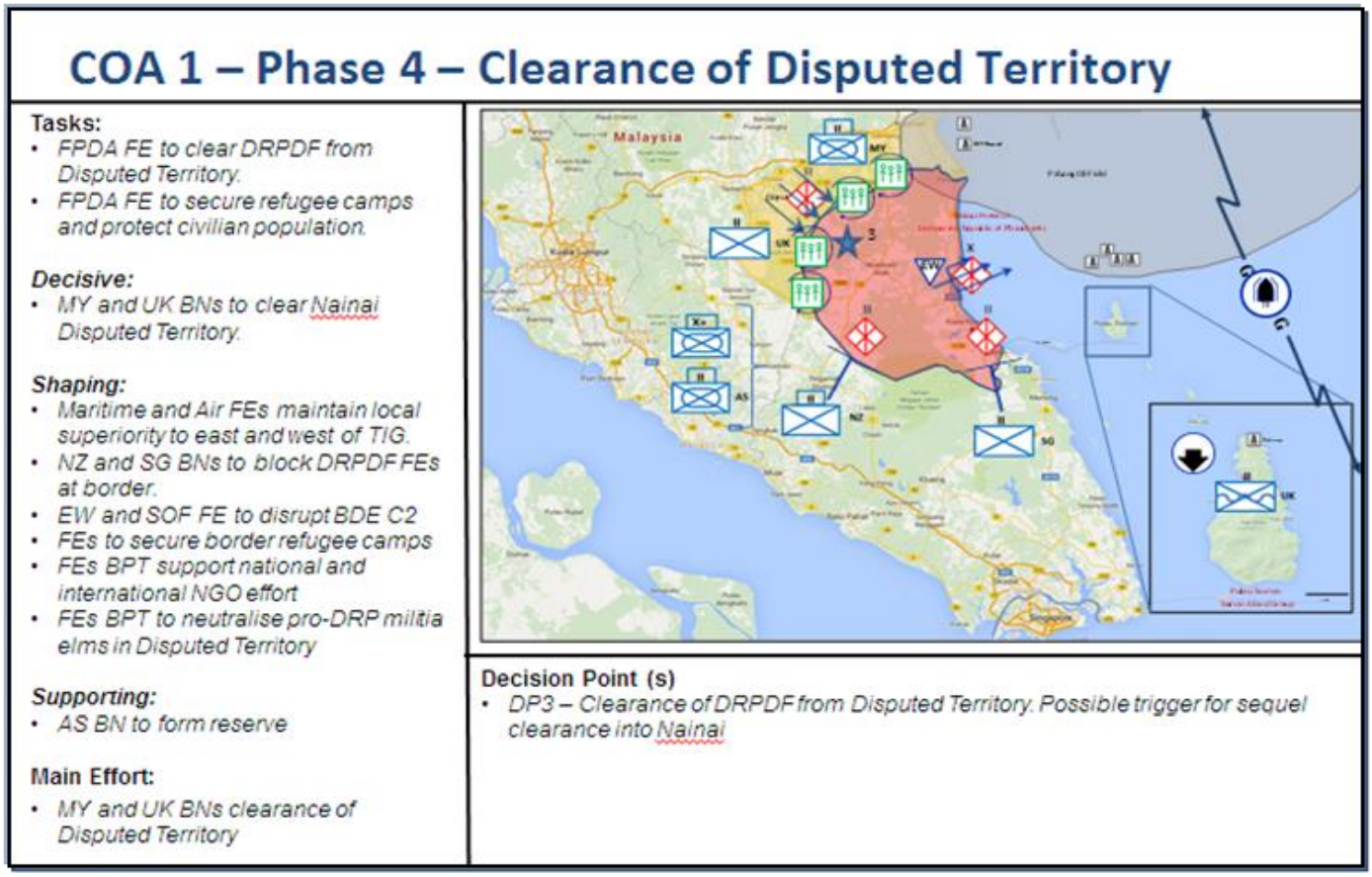


Figure 5-6: COA Phasing (4th Phase – Clearance of Disputed Territory)

5007. With detailed COA, JLPG Staff then will work and design on how possible the logistics activities are able to sustain the operation and able to accomplish the mission as commanders requirement.

SUB-STEP 3: DESIGN AND DEVELOP CONCEPT OF LOGISTICS SUPPORT (COLS)

5008. COLS is a logistics scheme that develops in parallel with and supports a COA. COLS is underpinned by the commander's guidance and confirms the viability and supportability of each COA developed. Ideally, JLPG Staff plan at least one COLS for each COA. Factors to consider when developing a COLS are as follows:

a. **Tempo**. Tempo is the rate or rhythm of activity relative to the adversary. It incorporates the capacity of the force to transition from one operational posture to another. Tempo is a critical determinant of operational logistics.

b. **Operational Pauses**. Operations cannot always be conducted continuously, and there may be a need for periodic pauses to consolidate and to prepare for subsequent activities.

c. **Culminating Points**. A culminating point is the point in time and location where a force will no longer be stronger than the adversary and risk losing the initiative. This may be due to reduced combat power, attrition, logistics, dwindling national will or other factors. To be successful, the COLS must enable the operational plan to achieve its objectives before reaching its culminating point.

d. **Simultaneity**. A key to decisive manoeuvre is to overwhelm the adversary’s decision cycle, typically by making decisions at a higher tempo. Each action taken to overwhelm the adversary will have a logistics impost;

thus, a high tempo of decisions requires high tempo, concurrent logistics operations.

e. **Contingency Planning**. Contingency plans are designed to provide responses for events that can reasonably be anticipated in the JFAO.

5009. Each COA must have a least one COLS and it covers the viability and supportability that involve to visualise the logistics support structure. COLS confirm the viability and supportability of COA developed by visualising the logistics support structure as follows:

a. Logistics staff used COA to determine and create control, physical, and communications and information system networks. The planning of the physical network is the first step. It involves the identification and analysis of:

(1) Potential POE and POD and other nodes.

(2) Likely staging areas, mounting and forward bases.

(3) LOC (segments) between the nodes.

b. This network is then checked against anticipated factors such as weather and climate effects and host nation (HN) capacity. The planning of the physical network follows and will include the identification, analysis and confirmation of:

(1) A logistics start point for each COA being developed (at a point in time).

(2) The ALI.

(3) The environment/climate effects data.

(4) Potential POE/POD.

(5) Likely staging areas, mounting and operating bases.

(6) LOC between distribution nodes.

(7) Higher agency/national support base supporting infrastructure and agencies.

(8) Subordinate elements and potential HN supporting infrastructure and agencies.

(9) Agreed points with higher and lower logistics organizations.

(10) Location and composition of HN and coalition elements.

(11) Assignment and position logistics forces (confirmed at decision).

c. Other logistics activities or events that should be taken into consideration in developing COLS must be within the six tactical logistics function as discussed in **Chapter 1 Figure 1-2**. Tactical logistics functions and sub-functions is an excellent tool for ensuring the logistics for war fighting is considered.

5010. **Sequencing CLE**. In step 2, CLEs had been identified based on each DP confirmed. With these CLEs the Log LOO had been formed parallel to Op LOO. To design COLS, all CLE's identified are to be sequenced with the DP's activities. The sequencing of CLE should consider the Op phasing, Main Effort, JFAO, branches and sequels.

5011. **Logistics Matrix**. These CLE Matrices are produced in step 2 and migrate to Log Synchronisation Matrix that align with Op Synchronisation Matrix developed by the operational staff. Logistics synchronisation matrix is an extremely important product because it serves as both a working document and a source document. It is a working document in the sense that the JLPG continues to populate and refine it throughout the planning process, and serves as the primary document from which to conduct the war game. Similarly, the log synchronisation matrix is a source document because the JLPG needs to continually refer back to it as the complexity of the COA expands. Figure 5-7 shows an example of the Op Synchronisation Matrix and Figure 5-8 is an example of Log Synchronisation Matrix.

Friendly action	Phase	Shaping	
	Main effort	Strike/surveillance/early warning	
Adversary action	**Phase**		
	Main effort		
Time		D- 3 to D+1	**Indicative Forces**
Tasks	Specified (S) Implied (I) Essential (E)	VAP in place (S, E) Surveillance of Country X waters (I)	VAP FE, AP3-C, FFG
	Deep	Strike Country X TAI1, SF insertion NAI1, AEW radar NAI2	F/A-18, F/A-18F, SF, ACPB
	Close	SF insertion TI NAI 2, TI NAI3 subs LOC NAI4	SF, C-130, SSG
	Rear	VAP and ATLS prep (mainland AUS)	GBAD, F/A-18
Sustainability		High usage of PGM	
Deductions		Gained air superiority—DP 1	

Figure 5-7: Op Synchronisation Matrix

Friendly action	**Phase 1**	**Shaping**
	Main Effort	Strike/surveillance/early warning
Adversary action	**Phase**	
	Main Effort	
Time	D-3 to D+1	
Supply	1. Move Supply to FOB from D-3 to D-1 2. Built-up Stock from D-2 to D+1	
Movement	Move supply, maintenance, transport and health element to FOB from D-2 to D Day	
Maintenance	1. Develop infrastructure from D-2 to D-1 2. Infrastructure maintenance from D day to D+1 3. Maintenance air craft from D to D+1	
Gen Engr	1. Develop infrastructure from D-2 to D-1 2. Infrastructure maintenance from D day to D+1	
Health	1. Move Supply to FOB from D-2 to D-1 2. Built-up medical store from D-3 to D+1	
C4ISR	Establish FOB D-3 to D-1	
Deductions	1. Strategic move to be used and must be ready by D-3 2. All stock must be ready by D-3 before move to be commence	

Figure 5-8: Log Synchronisation Matrix

5012. On completion of the COLS designed it is important to check that it supports the war fighting concept as well as the time and space of the COA. If time permits, the scoping of other logistics options for each operation's COA should be completed. It is also necessary to plan the overall distribution system to incorporate the sequencing of support to branches and sequels.

SUB-STEP 4: CONDUCT STAFF CHECK

5013. JLPG is frequently called upon to check the feasibility of a task by means of a staff check. A staff check is used to confirm that a COA is viable and can be supported. Several staff checks may be required during the formulation of the COLS. Importantly the logistics plan must align with the movement plan as both plans are likely to leverage off the same transportation resources.

5014. The first and foremost consideration in any staff check is time. Staff officers must become accustomed to placing their staff check and subsequent action against a time axis. All pertinent factors, figures and limitations must be considered in a staff check, and they must be as accurate as time permits. One forgotten or miscalculated factor or detail can invalidate an entire check. Such considerations as capability of transport assets, supplies to be moved, time and distance are all inter-related. A change in one may alter the others.

5015. The essence of a staff check is the comparison, in gross terms, of requirements against the availability to establish the shortfall and, therefore, feasibility. If the task is feasible, detailed COLS planning continues. If a shortfall exists, the staff officer may need to ask for more time and/or more resources, or offer an alternative option. For example, in a stores-moving problem the staff officer may consider obtaining more transport, increasing convoy/aircraft speeds, speeding up loading and unloading, or reducing the commitment. Alternatively, the commander's guidance may be requested to determine priorities so the shortfall only involves items of low priority.

5016. The staff check is completed by phases (preparation, deployment, including stock build up, sustainment, and redeployment). Tools can be used that have built-in demand predictors and can correctly sequence and de-conflict the operation and logistics requirements of the force as necessary. The check list consists of:

a. Confirmation of time and space factors particularly as they relate to distance and synchronized operations.

b. Identification of assets, equipment, facilities, personnel and stocks.

c. Identification of support requirements.

d. Comparison of assets against demand over time and space.

5017. Tools to be used are able to forecast demand and correctly sequence and de-conflict the operation and logistics requirements of the force as necessary. At the completion of the staff check, distribution planners must mitigate the ‘war stoppers’ that have been identified. This is done by either re-sequencing the distribution plan, re-sequencing the operations movement and deployment plan or seeking a decision brief from the COS who is in charge of synchronising the planning effort. Figure 5-9 illustrates an example of Staff Check Matrix.

PHASE	CLE	LOG EVENT	TIME	STAFF CHECK
1	2	STOCK BUILD UP	D-30	
		a. Ration		Div Str – 12,829 Req for 30 days : a. CBT RAT – 384,870 b. Rice – 384.870 c. Solid Fuel – 69,740
		b. Fuel		Veh Req: 336 x 3 Tonners/667 20FT ISO CONTAINERS Total Veh: 1,940. Req for 30 days: a. Diesel – 7,833,622 ltr b. Petrol – 2,147,355 ltr
		c. Ammo		Bn Str – 838 9 x Std Inf Bn Veh Req – 81 x 3 Tonners

Figure 5-9: Example of Staff Check Matrix

5018. **Example of Staff Check**. To move a troop of personnel from point A to point B. The strength of the troop is 70 pax. The distance from point A to point B is 100 km. The mode of transport available is three trucks. Each truck can carry 20 pax at a

time. Restrictions impose is to move at the speed of 80 kph and the time to complete the move is 3 hours. Can the troop be transported within 3 hours from time to move? Below are the calculations of staff check.

a. 70 pax of troops to be moved from point A to point B.

b. Distance from point A to point B is 100 km.

c. 3 trucks are available to move the troops. Each truck can carry 20 pax at a time.

d. Restriction speed of the truck is 80 kph.

e. First move with 3 trucks that load 60 pax travel at the speed of 80 kph. The troop will reach at point B within 1 hr 26 min. After unload the 3 trucks will return back to pick up the balance of the troop. The time taken is 1 hr 26 min at the same speed.

f. After loading the troop, 1 truck will carry the troop from point A to point B at the same speed and reach within 1 hr 26 min.

g. Time taken to move 70 pax from point A to point using 3 trucks is 4 hr 18 min. The time taken does not include the loading and unloading timing.

h. The troop cannot be moved within 3 hours as required. In this case the JLPG staff have to find the solution to meet the requirement by giving an option.

SUB-STEP 5: CONDUCT MODAL/NODAL ANALYSIS

5019. Modal/nodal analysis aids in the understanding of how a sub-system is functioning, where critical friction points occur in that sub-system and where limited flexibility or redundancy exists. The analysis is completed by analysing the fundamental elements of the distribution system such as:

a. Shortfall in supplies.

b. Critical modes of transport.

c. Facilities shortfalls/limitations.

5020. The analysis is completed over a distribution system that has a number of nodes linked by segments such as pipes or LOC as shown in Figure 5-10. At each exchange point, friction will occur and the system will be vulnerable to both enemy action as well as system failure. It is at these points where many of the CV of the distribution system will exist and contingency planning is necessary. Figure 5-11 is an example of node and modal analysis matrix on troop’s movement from start point until defence position.

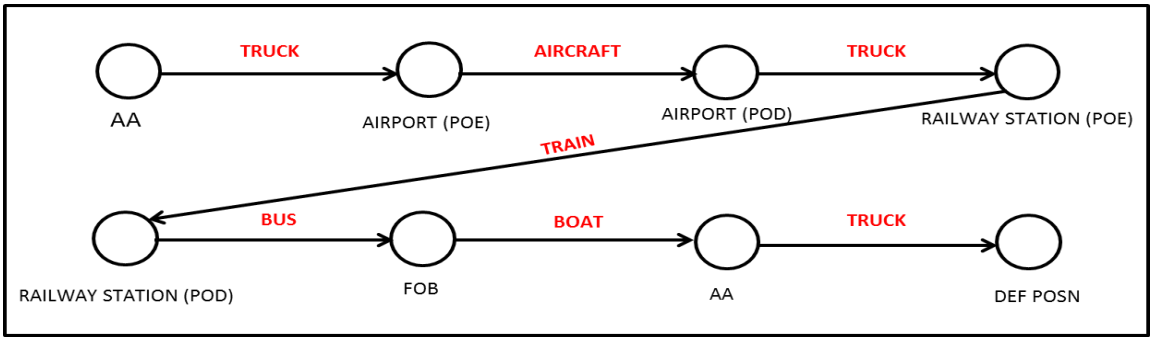


Figure 5-10: Modal/Nodal Analysis

MODE	NODE	STATUS	RISK ASSESMENT
AIRLIFT	SUBANG AIRPORT	CAT 4	HIGH
	BAYAN LEPAS	CAT 4	MEDIUM
	KLIA	CAT 5	HIGH
	KUANTAN	CAT 3	MEDIUM
	SENAI	CAT 4	HIGH
SEALIFT	PENANG	CLASS 1	MEDIUM
	LUMUT	CLASS 2	HIGH
	KELANG	CLASS 1	HIGH
	KUANTAN	CLASS 2	LOW
RAIL	BUTTERWORTH-KL	CLASS 5 (129KM/H)	MEDIUM
	KL-GEMAS	CLASS 5(129KM/H)	HIGH
	KL-JOHOR	CLASS 4(97KM/H)	HIGH
ROAD	PLUS	4 LANE HIGHWAY	HIGH
	TRUNK ROAD	2 LANE ROAD	MEDIUM

Figure 5-11: Modal/Nodal Analysis Matrix

5021. The analysis should determine CV within the movement system that will be important to planning during the war gaming in the COA analysis step of JMAP. In the example above the CV are all the nodes and modes that are vulnerable to enemy action. Moving the troop from AA to Defence Position will warrant enemy counter action and the protection of the movement should be considered from Op Staff.

SUB-STEP 6: DEVELOP DETAILED COLS

5022. The detailed development of the COLS requires the same process steps as for the COA Development and results in the development of logistics synchronisation matrices that align with the operational COA. If time permits, the scoping of other logistics options for each COA should be completed. It is also necessary to plan the overall logistics system to incorporate the sequencing of support to branches and sequels. Additional considerations include:

a. CLE synchronisation as discussed in Chapter 4.

b. Logistics synchronisation as discussed in sub-step 3.

c. Logistics risk analysis.

d. Resolution of war stoppers.

e. Logistics outputs.

5023. By listing tasks by phase, the CLE construct helps to identify times and locations where logistics capabilities cannot meet the desired operational tempo; hence, it assists logistics planners to justify the prioritisation of logistics effects and effort, or the need for an operational pause.

5024. **Logistics Risk Analysis**. The results of the staff checks, modal/nodal analysis and threat assessment provide the necessary information to conduct a risk assessment for each COLS. Risk assessment seeks to quantify the risk based on likelihood of an event occurring against the cost in operational tempo. Logistics risk can be equated to an operational cost in either a key attribute of the logistics system or a reduction in the operational tempo compared to the gains achieved by taking that risk. It is often best briefed in the terms of days of supply reduction before the culminating point of the logistics system is reached. The key issue is to identify risk as much as possible and identify mitigating / minimising options such as reserve, redundancy and deception plans to reduce the impact on operations.

5025. The results of the staff checks and nodal analysis will provide the necessary information to conduct a risk assessment of each COLS. Essentially risk assessment is a determination of the risk equated to an operational cost in either a key attribute of the distribution system or a reduction in the operational tempo compared to the gains achieved by taking that risk. Whilst the capacity of a distribution system is objectively quantifiable, risk assessment must subjectively quantify risk based on likelihood of an event occurring against the cost in operational tempo. It is often best briefed in the terms of days of supply reduction before the culminating point of the distribution system is reached. The key issue is to identify risk as much as possible and identify

mitigating / minimising options (reserve / redundancy / deception plans) to reduce the impact on operations.

5026. The JLPG review the JLO and JIPB products, particularly the most likely and most dangerous adversary COAs, to determine how they may potentially affect each COLS. Key deductions are:

a. Impact on own force structure and deployment;

b. Protection requirements;

c. Location of health and CASEVAC assets;

d. Security of terminals, routes and installations;

e. Impact on location of installations and stock locations;

f. Reserve holdings required to counter likely adversary interdiction and losses due to combat.

5027. The COLS may need to be readjusted to reflect likely adversary intentions. The question to constantly ask is ‘how else can the adversary affect the logistics system?’

5028. **War stoppers**. A range of logistics issues or ‘war stoppers’ such as shortfalls in time or assets are likely to be identified during the analysis. They also have

sufficient information to commence the production of the draft sustainability statement. If time permits and the COAs have obviously different ways to support it, several COLS should be developed for each COA.

5029. The detailed development of the COLS also requires the development of a movement and distribution synchronisation matrix that aligns with the operational COA. The COLS will also provide distribution planners with confirmed:

a. Agreed points with higher and lower logistics organisations.

b. Critical events and Commander Decision Points (CDP).

c. Distribution priorities.

d. Time and space analysis.

e. Logistics planning time line.

f. Stockholding policy/operational viability period levels and resupply process.

5030. JLPG can now pursue resolution of issues / war stoppers. They also have sufficient information to commence the production of the draft sustainability statement.

5031. If time permits and the COAs have obviously different ways to support it, several COLS should be developed for each COA. A simple differentiation would be to develop one COLS on a just-in-time and another on a just-in-case basis. Figure 5-12 to 5-16 are the examples of COLS product.

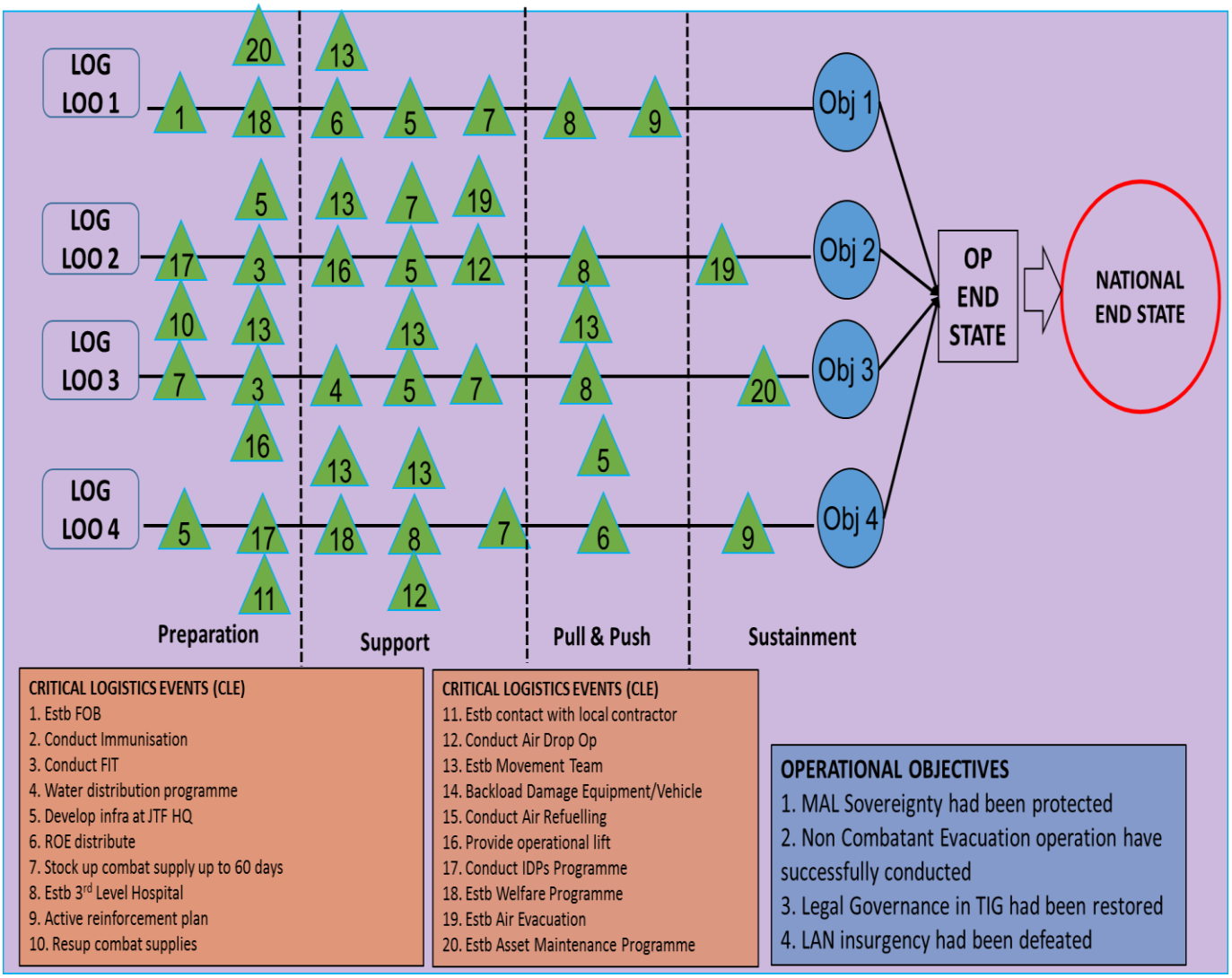


Figure 5-12: Sequencing the CLE

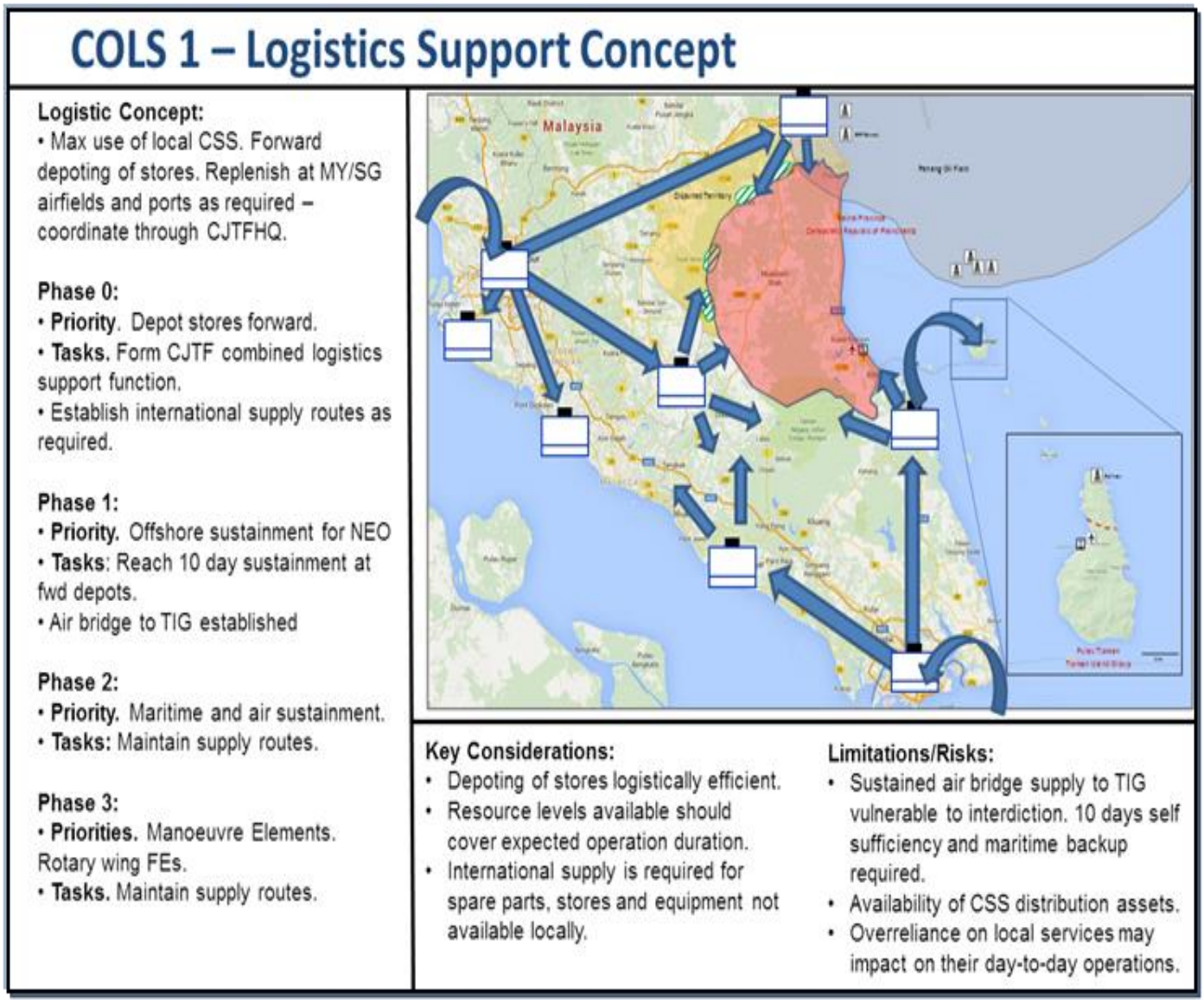


Figure 5-13: COLS – Logistics Support Concept

COLS 1 · Pers / Health Support Concept

Pers Support Concept:

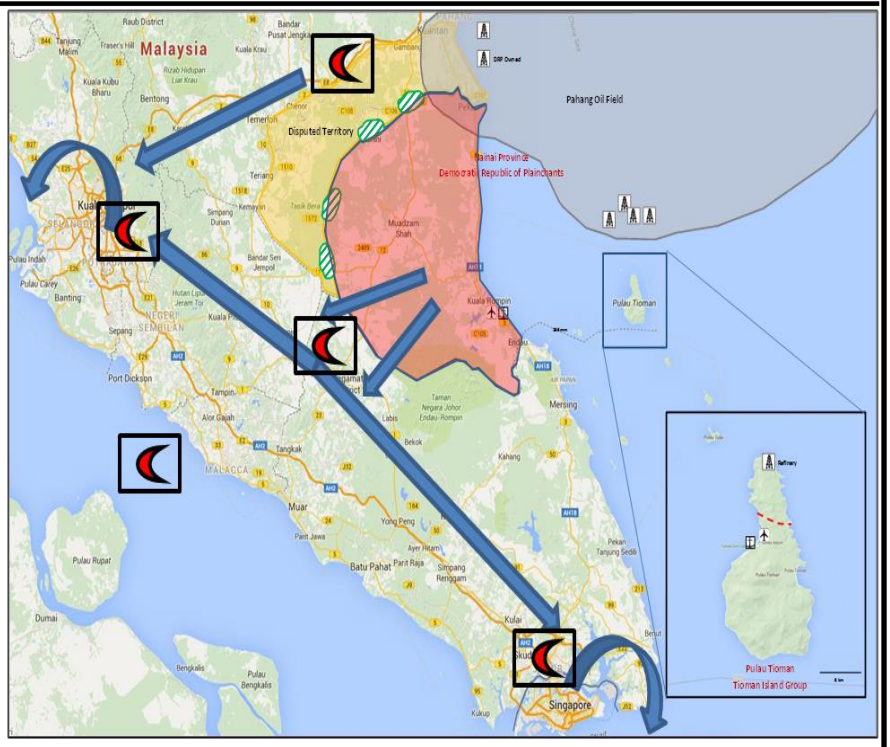
- *National FEs to sustain pers contributions over 180 days.*

Health Support Concept:

- *Integrated health support. Evacuation through MY/SG field hospitals to KL or Singapore with international evacuation through national FEs as required.*

Treatment:

- **L1:** Organic med spt
- **L2/2E:** National L2 elms. (AS, NZ, UK).
- **L3:** SG Field Hospital IVO Gemas
- MY Field Hospital IVO Disputed Territory
- **L4:** Civil hospitals in KL and Singapore.
- **Fwd Evac:** Rotary wing / Mvr elms to Coy & RAPs.
- **Tac AME:** Rotary wing / Fixed wing transport as required.
- **Strat AME:** National FEs from KL or Singapore. NZ 757 available as dedicated strat AME.



Key Considerations:

- *Hospitals available to support limited CIMIC operations.*
- *Priority remains FPDA FEs.*
- *NZ R2 to embark with fleet during to support maritime FEs.*
- *May be necessary to deploy med footprint to TIG.*

Limitations/Risks:

- *Lacking dedicated AME rotary wing assets. CASEVAC primarily.*

Figure 5-14: COLS – Personnel / Health Support Concept

COLS 1 – Legal Support Concept

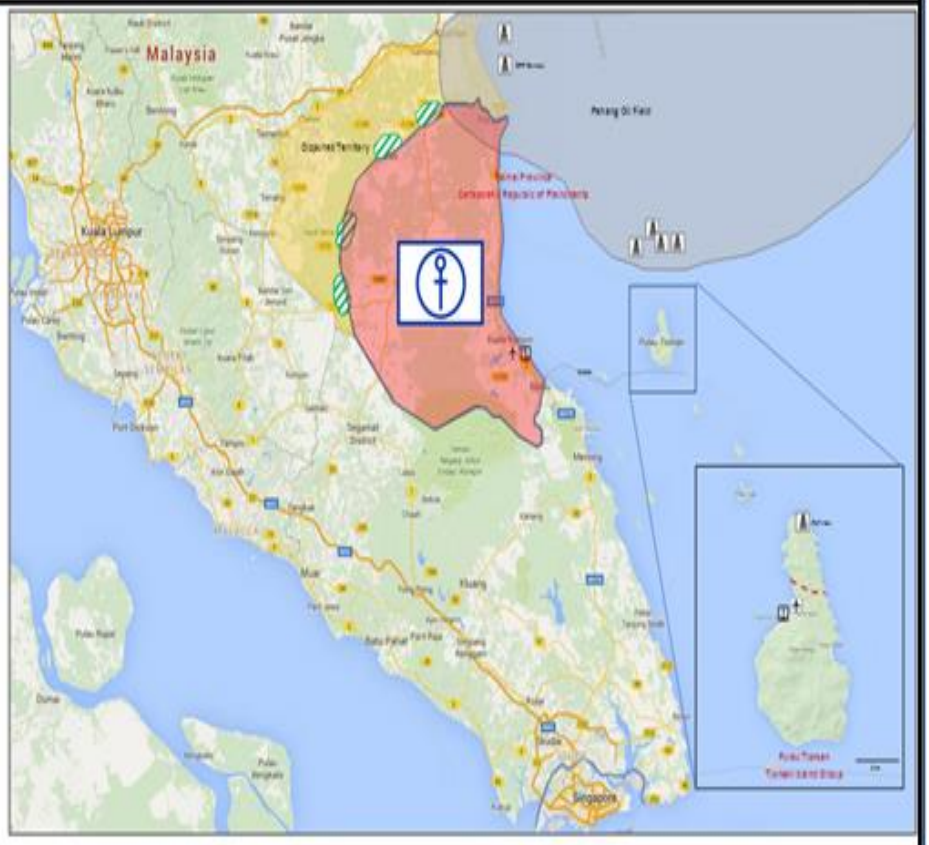
ROE Overview:
- *ROE recognise international armed conflict. Permit wartime operations.*

Use of Lethal Force
- *All situations involving active combatants bearing arms. Extends to include non-uniformed irregular combatants bearing arms*

Use of Non-Lethal Force
- *All situations involving the civil population, including incidents of civil disorder and unrest.*

Specific ROE
- *National caveats will apply (if any)*

Arrest & Detention
- *Arrest and detention permitted for identified combatants. ROE permits the detention of civilians in extremis for the purposes of force protection.*
- *Detainees must be transferred to Malaysian authorities as soon as possible and within 24 hours.*
- *Tactical questioning is authorised for trained personnel.*



International Legislation
- *All international and national legislation applies.*
- *FPDA Agreements*
- *UNSC1325*

Limitations/Risks:
- *Understanding of ROE*
- *National caveats (if any)*

Figure 5-15: COLS – Legal Support Concept

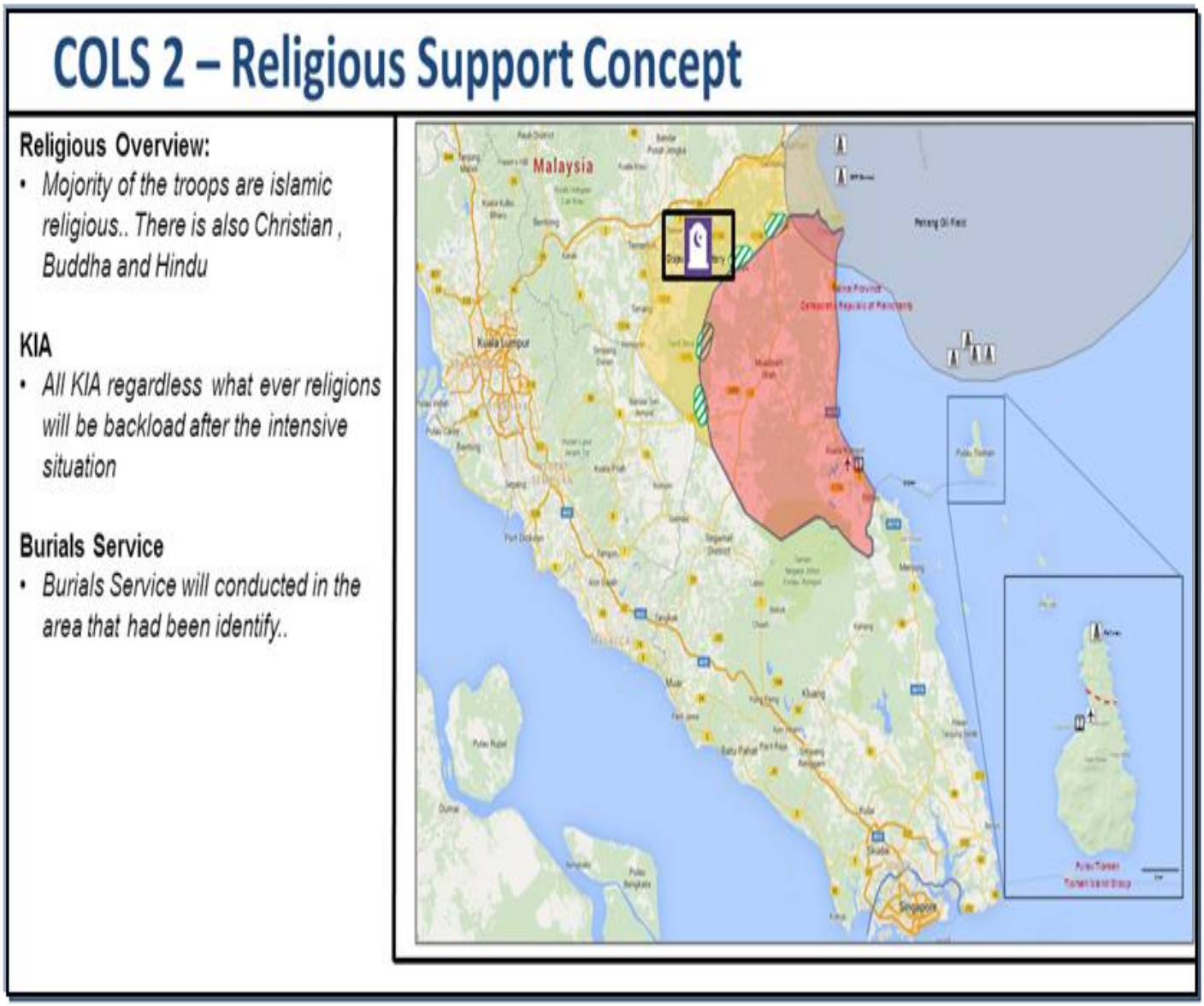


Figure 5-16: COLS – Religious Support Concept

SUB-STEP 7 – TEST COLS AGAINST COA CRITERIA

5032. The last sub-step is where JLPG staff reviews each COLS against COA criteria. The test is to ensure the COA criteria are meet.

a. **Sustainability**. Sustainability focuses on meeting the needs of the COLS that support COA. It is the ability to continue at a particular level for a period of time without compromising the ability to operate in the operational environment and phases.

b. **Suitability**. All logistics activities that had been considered and discussed above should suit with the action that the commander want in achieving the mission. Does it satisfy the commander's intent?

c. **Feasibility**. Feasibility describes how easy or difficult the COLS that can support COA and it may include time, space, and sufficient means to support the operator's scheme of manoeuvre as well as the distribution concept.

d. **Distinguishability**. It is to ensure all COLS that had been designed are different between on another. For example to ensure the different ways to establish the distribution system either by using different modes and nodes or by a just-in-case against a just-in-time approach.

e. **Acceptability**. The determination as to whether the contemplated course of action is worth the cost in manpower, materiel, and time involved. It

is consistent with the law of war and is militarily and politically supportable. This include the risk analysis and ease of execution.

5033. COLS Development Aide Memoire is at **Annex A** and Suggested COLS Development Brief is at **Annex B**.

Annexes:

A. COLS Development Aide Memoire.

B. Suggested COLS Development Brief.

ANNEX A TO

CHAPTER 5

COLS DEVELOPMENT – AIDE MEMOIRE

INPUTS	STEPS AND ACTIVITIES	OUTPUT
(a)	(b)	(c)
JLO and JIPB Product Scoping & Framing Product Op and Log Mission Analysis Product JMAP COA Product DP and CLE Superior Comd's Direction Input from J5 Broad COLS from MA Broad COA	1. **Review Commander's Guidance & Current Situation** a. Commander's Guidance b. Update LOGFAT c. Update LAOE 2. **Confirm Detailed COA** a. Sequencing b. Phasing c. Main Effort d. JFAO e. Branches & Sequels f. DP 3. **Design & Develop COLS** a. Establish log start point for each COA b. Review Log Area of interest c. Review environment/climate effect data d. Determine Potential POE/POD e. Determine likely staging area and	 Updated LOGFAT Update LAOE CLE for each DP Log LOO Broad COLS Build LOGFAT Nodes and LOC on COLS Key feature on COLS and adjust timing

ALIO, AOE and LAOE	operating base	Updated ALIO
Weather & Climate matrix	f. Determine LOC between log nodes	Updated ALIO and LOGFAT list
ALIO	g. Confirm Higher Agency/NSB	Updated COLS sketch
ALIO & LAOE	h. Confirm subordinate elms and potential HN	Identify agreed point
ALIO		Updated COLS sketch
Force Assignment	i. Determine agreed point with higher and lower log organization	Assets arrangement
Higher Comd Direction	j. Confirm loc and composition of HN and coalition elms	Confirmed COLS and Synchronistion matrix
Force Assign & COLS Sketch	k. Assign and position log forces	Alternative Log Option to each COA
COA & COLS Sketch	l. Confirm COLS to sp COA	Log branches & sequels for COLS
	m. Scope Other Log Option	
	n. Sequence Log Sp to Branches and Sequels	
	4. **Conduct Staff Check**	
Log Planning Timeline	a. Confirm time and Space	Updated Log Planning
JLO Product	b. Identify Asset , Equipment, Facilities, Pers and Stock	Timeline and COLS Synch Matrix
JLO Product	c. Identify liabilities	Start States
	d. Compare assets vs liabilities vs time & space	Updated LOGFAT
J5 branches & Sequel		Updated LOGFAT list
JLO Output	e. Check Sustainability of each branch & sequel	War stopper and Shortfall each branches and sequel
	f. Mitigate war stoppers	Revised and Refine COLS
	5. **Conduct Modal & Nodal Analysis**	
Product from Step 2 & 3 and war stopper	a. Identify Log Distribution System	Log CLE, CDP and Culminating point.
	b. Conduct nodal Analysis	

	c. Critical Mode of Transport	Modal & nodal map
	d. Facilities shortfall and limitation	
	e. Contingency planning if necessary	Shortfall on mitigation
	6. **Develop Detail COLS**	
JIPB product- Most Likely En COA	a. CLE Synchronisation	Update LOGFAT and COLS
	b. Log Synchronisation	
	c. Log risks	
Deduction from COLS and COA	1. Identify threat against COLS	Shortfall on mitigation
COA and COLS	2. Impact on own force structure and deployment.	
	3. Protection requirement.	
J5 and J2 Guidance	4. Location of health &	Confirm CLE and DP.
COA	CASEVAC assets.	Updated Log Synch Matrix
JLO Output/Update	5. Node and Mode Security.	Confirm Log Priorities
	6. Impact on stock location.	Review COLS and Synch
	7. Reserve location and holding.	Matrix
List War Stopper	8. Investigate mitigation option	Confirm time and space.
	d. Resolution of war stopper	Synch Matrix and Log Plan
List Comdr Guidance	e. Log output	Timeline
	f. Integrated Operational	Log C2 structure
	Environment Planning (Deep,	Update Log Risk Matrix
	Close and Rear)	Advice Op Staff
	g. Log and other supporting effort	Provide relevant log info for
	h. C3	decision
	i. Adjust COLS	

COLS	7. **Test COA Criteria** a. Sustainability b. Suitability c. Feasibility d. Distinguishability e. Acceptability	Provide relevant logistics information for decision

ANNEX B TO

CHAPTER 5

SUGGESTED COLS DEVELOPMENT BRIEF

COA	COLS	DETAILS
(a)	(b)	(c)
COA 1	1. General Logistics Concept - Describe on how the logistics support can be implemented 2. Logistics Concept - Describe the specific activities that involve the logistics support to support COA 3. Personnel Support Concept 4. Health Support Concept 5. Legal Support Concept 6. Religious Support Concept 7. Movement Planning Concept	

	8. Maintenance Planning Concept 9. Engineer Support Concept 10. Supply Support Concept 11. Financial Support Concept 12. HNS Support Concept	

- **The Briefing Will Be Given In Line With JMAP Step 3**

CHAPTER 6

CONCEPT OF LOGISTICS SUPPORT (COLS) ANALYSIS

INTRODUCTION

6001. The main objective of this step is to evaluate the COLS against the joint operation COA. This enables JLPG Staff to validate logistics estimates and develop solutions to anticipated support requirements that best support the concept of operations and scheme of manoeuvre while integrating the tactical logistics functions. The JLPG Staff also continues to remain “enemy-focused” through evaluating the COLS against the elements of Enemy’s most likely and / or most dangerous COA that can affect the support and its logistics system. Comparison between JMAP Step 4 and JLPP Step 4 are shown in Figure 6.1 below.

JMAP	JLPP
Step 4: COA ANALYSIS	**Step 4: COLS ANALYSIS**
SS 1. Prepare to Conduct War Game	SS 1. Prepare to Conduct War Game
SS 2. Conduct War Game	SS 2. Conduct War Game

Figure 6-1: COA Analysis Sub-Step

6002. JLPG Staff must conduct and analyse the critical tasks for mission accomplishment - those tasks required to accomplish the JFHQ commander’s intent- and any inherent logistics risks in the plan. The JLPG Staff must ask the hard

questions about the ability of the selected COA for logistics support to react to unpredictable operational environment developments as follows:

a. “What if” the operations plan against unexpected successes increased speed of attack, unexpected resource demands, opportunities for exploitation, or early initiation of pursuit operations.

b. “What if” the operations plan against unexpected failures unplanned and very complex retrograde operations: delay, withdrawal, or retirement.

c. “What if” the logistics impacts of JFHQ decision points.

6003. The COLS Analysis also helps JLPG Staff to refine or validate certain issues as follows:

a. Decision Points.

b. The Logistics Estimate of Supportability, associated staff estimates, and planning tools.

c. Integration of all log services functions / and supported unit COA(s).

d. Logistics task organisation and support relationships.

e. Logistics facilities and locations

6004. COA and COLS war game should be played simultaneously. JLPG and JOPG should not play a war game in isolation. COA action, action and review require COLS action, action and review. In all action COLS is supporting COA logistically through-out the campaign. In the war game played, the COA should act first based on operational activities that had been derived from JMAP process. Then the COLS will act accordingly base on the logistics activities that had been derived from JLPP process.

SUB-STEP 1: PREPARE TO CONDUCT WAR GAME

6005. This sub-step has others activities that should be attained during the war game preparation. The activities include as follow:

a. Determine participant.

b. Staff Organisation.

c. Orchestration.

d. Determine war game start state.

e. Select war game method.

f. Select war game recording method.

6006. **Determine Participant**. COS of JOPG will ensure all JOPG and JLPG Staff will be involved in conducting the war game. They are all planners that had gone through planning process from the early stage. COS may also involve Subject Matter Expert (SME) in certain field such as SME on ammunition and explosive. Commander may also participate through-out the game or only during significant events.

6007. **Staff Organisation**.Staff Organisation will depend on the organisation structure either using components method or direct method. Component method will establish service component that are Land Component, Maritime Component, Air Component, Special Force Component and Logistics Component. Direct method will establish Joint Task Force (JTF). The component or joint task force commander normally will participate in the planning process. The staffing from JFHQ are J5, J3 & J2 as Op Staff, J6 as CIS Staff, J7 as Training or Media Op Staff and J1, J4 & J9 as JLPG Staff. All staff from various J's should be a player in war game step because they are the one who had conducted the planning process from the beginning. The war game is played between COA and COLS Own Forces against adversary COA and COLS adversary develop by J2.

6008. **Orchestration**. Orchestration is about designing the war game situation activities. Before the war game is started, these are the factors to be considered:

a. Briefing to all the staff on the scope.

b. Involvement and staff organisation

c. War game method.

d. Recording method.

e. War game rules.

6009. **Determine War Game Start State**. JLPG should determine the precise start states by listing the essential information:

a. Friendly forces including HNS, coalition support.

b. Critical assumptions.

c. Known critical events and CDP.

d. Significant factors such as:

(1) All logistics units and infrastructure committed to the COA.

(2) Critical facts and assumptions.

(3) Critical events and known logistics CDP.

(4) Logistic constraints, restrictions and risks.

(5) Distribution priorities and significant logistics factor.

(6) Preliminary distribution tasks.

6010. **Select War Game Method**. There are a variety of methods used to conduct the war game including Time Event Method, Avenue in Depth Method, Time Box Method, Belt Method as well as Computer Simulation. JLPG must ensure the selected war game are played through CLE and DP and that each COLS will be tested.

6011. **Select The War Game Record**. War gaming results can be recorded using matrices, sketches and notes, or a combination of all three. JLPG must ensure that the war game records will provide sufficient information for analysis, planning and conduct of distribution support. Figure 6-2 is an example of Logistics War Game Record Worksheet. It must highlight issues with each COLS so that:

a. The information recorded will assist analysis on the of COLS for each COA.

b. Sufficient details will be recorded for later logistics synchronisation.

Selected COA	To estb control of air and sea to deny Enemy projection in vicinity of MAZARI…..				
En COA	To estb a favorable air and sea situation in MAZARI……				
Time/Phase	D – 5 Phase 1				
COLS	**CRITICAL EVENTS**				
Functional Action	**Action**	**Action**	**Review**	**Time**	**Remark**
Supply					
Movement					
Maintenance					
Pers					
Health					
Legal					
Religious					
Others……					

Figure 6-2: Example of Logistics War Game Worksheet

SUB-STEP 2: CONDUCT THE WAR GAME

6012. The war game is a disciplined process that helps staff to visualise the operational environment events. Staff must remain impartial and avoid premature conclusions. JLPG staff from J4, J1 and J9 should understand their own capabilities and limitations of their respective specialist area. They also must aware of the asset capabilities and doctrinal procedures.

6013. **Friendly Action/Action**. Staff analyse the COLS for each COA identifying:

(1) Strengths and weaknesses.

(2) Force preparation and reconstitution requirements.

(3) Advantages and disadvantages of the COLS for each COA.

6014. **Threat Action/Action**. During the threat play staff must visualise the flow of operations to identify logistics events and anticipate potential problems. The analysis is done to identify the distribution vulnerabilities including:

(1) The impact on own force structure and deployment.

(2) Threats to friendly force logistics LOC interdiction, threats to logistic units.

(3) Threats to national infrastructure industry loyalty, information systems vulnerability, distribution system interdiction, and

(4) Rear Area Security (RAS) of non-military resources, routes, terminals and installations.

6015. **War Game Review**. The war game will highlight on the CCIR, including the essential logistics information requirements. It must also confirm:

a. Supportability of the COLS.

b. Preliminary logistics organisation, command and control, tasks, priorities and CLE/DP.

c. Synchronization issues between the manoeuvre elements and the logistics effort.

d. Logistics support aspects of the decision support overlay.

e. Required countermeasures (protection and counter-intelligence requirements including the distribution costs for friendly deception plans.

f. Identify and address further issues of protection, redundancy and RAS.

g. Clear distribution advantages and disadvantages.

h. Logistics risk assessment.

6016. The relationship between COA Analysis and COLS Analysis are depicted in Annex A. COA Analysis Aide Memoire is as Annex B and Suggested COA Analysis Brief is at Annex C.

Annexes:

A. The Relationship between COA Analysis and COLS Analysis.

B. COLS Analysis Aide Memoire.

C. Suggested COLS Analysis Brief.

ANNEX A TO

CHAPTER 6

THE RELATIONSHIP BETWEEN COA ANALYSIS AND COLS ANALYSIS

COA Analysis	Task	Crossover	COLS Analysis	Tasks	Key Logistics Output
1. Prepare To Conduct War Game			1. Prepare To Conduct War Game		
a. Determine Participants	All planning staff		a. Determine Participants	All planning staff	
b. Staff Organisation	Staff from J5, J3, J2, Component Cmdr and SME		b. Staff Organisation	Staff from J1, J4, J9, Log Cmdr and SME	
c. Orchestration	Base on Battle Rhythm		c. Orchestration	Base on Battle Rhythm	
d. Determine War Game Start State	a. Friendly Forces b. Critical Assumptions c. Known DP & CDP d. Significant Factors		d. Determine War Game Start State	a. Friendly Forces b. Critical Assumptions c. Known CLE d. Significant factors	
d. Select War Game Method	Method dependent on time		d. Select War Game Method	Method dependent on time	
2. Conduct War Game	a. Conduct War Game b. War Game COA star to End State achieved c. Modify COA as needed d. Discard unworkable COA e. Ensure war game confirms NAI & TAI, CDP, DP, Branches & Squeal and other supporting plan		2. Conduct War Game	a. Determine log impact during war game b. War Game COA star to End State achieved c. Revised COLS for modified COA d. Discard unworkable COA e. Ensure war game record and confirm of COLS	
3. COA Analysis Brief		Priority for logistics support Estimate of friendly losses	3. COLS Analysis Brief		Summary of outputs & key issues

ANNEX B TO

CHAPTER 6

COLS ANALYSIS – AIDE MEMOIRE

Inputs	Steps and Activities	Output
(a)	(b)	(c)
	1. **Prepare to Conduct War Game**	
COS had to identify the participants	a. Determine Participants	Participants those had gone through the planning process
COS and J5 to ensure all J are involved	b. Staff Organisation	Participants from J1 to J9, Component Commander and SME
COS to manage the battle rhythm	c. Orchestration	Participants had to go through the sequence laid.
JLO and JIPB Product	d. Determine The War Game Start State	Logistics start states including C2 arrangement
	1) Friendly Forces (Including HNS and Coalition)	
COS Guidance	2) Critical Assumption	

The Selected War game Method	3) Know critical events and Cmdr decision point 4) Significant Factors	
COA and COLS	e. Select a War Game Method 1) Ensure COLS will be tested by war game method	Confirm the validity of the war game method to test COLS
COA , COLS and J2	2) Method dependent on time and required analysis	
COLS and Log Risk Matrix	f. Select The War Game Record 1) Ensure COLS will be recorded by war game record	Confirm that the record is sufficient for analysis planning and conduct of log support Graphical representation via the synch matrix
	2. **Conduct The War Game** a. Determine log impact during war game drill	Record advantages and disadvantages of COLS for each COA Updated LOGFAT and Updated Log Task List (War stopper)

	1) Friendly Action/Action 2) Threat Action/Action 3) War Game Review	
	b. War Game from COA start until end state is reached	List Shortcoming of COLS
	c. Revised COLS for modification COA as required	Advise J5 of logistically marginal COA
	d. Discard unworkable COLS	a. Clear log advantages and disadvantages
	e. Ensure war game record confirm supportability of the COLS	b. Log risk assessment
		c. Preliminary log organization, tasks, priorities and decisive points

ANNEX C TO

CHAPTER 6

SUGGESTED COLS ANALYSIS BRIEF

COA	COLS	DETAILS
(a)	(b)	(c)
1.	a. Logistics Start State 1) C2 Arrangement 2) Force Protection 3) Location and tasking of RES b. COA Phasing, CDP and Timing c. Outline the COLS system (Illustrate it with diagram) 1) Distributions 2) Maintenance 3) Facilities 4) Personnel 5) Health 6) Law 7) Movement 8) Religious d. Shortfall and Risk e. Shortfall and Risk Deductions f. Intergradation COA and COLS g. Modification on COLS	

- **The Briefing Will Be Given In Line With JMAP Step 4**

CHAPTER 7

LOGISTICS DECISION

INTRODUCTION

7001. As discussed in COLS development, the JLPG normally develop one COLS. Therefore decision and COLS may be nothing more than validating the logistics system developed to support the CONOP. However, if the JOPG developed multiple COAs, the commander compares the COAs against each other and selects the COA that best supports the operations.

7002. This is the fifth step of JLPP to support JMAP. JLPG compares the strength and weaknesses of each COLS to support selected COA. They then will decide on which COLS to support the selected COA before getting approval from COS. COLS is part of an input to develop CONOP which will form OPLAN with logically sound logistics.

7003. Once COLS is approved with selected COA, the COLS become part of CONOP to develop OPLAN. Comparison JMAP Step 5 and JLPP Step 5 is shown at Figure 7.1 below:

JMAP	JLPP
Step 5: DECISION & CONOP DEVELOPMENT	**Step 5: LOGISTICS DECISION**
SS 1. Compare COA	SS 1. Confirm COLS with Selected COA
SS 2. Select Preferred COA	SS 2. Review COLS for Selected COA
SS 3. Develop CONOP	SS 3. COLS in CONOP Development

Figure 7-1: Comparison JMAP Step 5 and JLPP Step 5

SUB-STEP 1: CONFIRM COLS WITH SELECTED COA

7004. The aim of matching COLS is to determine the highest logistics criteria to support selected COA. The JLPG members will firstly conduct their COLS comparison and then recommend a COA to ACOS J4 for approval. There are five different techniques that allow the JLPG to provide the best recommendation and enable the Commander or COS to make the decision. The techniques are as follows:

a. Numerical Analysis.

b. Broad Categories Analysis.

c. Advantages and Disadvantages Analysis.

d. Staff Decision Matrix.

e. Risk Assessment Matrix.

7005. **Numerical Analysis**. This technique contains three components as follows:

a. **COLS**. These are the COLS from Step 4 JLPP.

b. **Criteria**. The criteria are usually identified by ACOS J4 as priorities during COLS development. They can be refined by Commander or COS to suit the environment on operation. The criteria may include:

(1) Logistics Functions.

(2) Logistics Main and Sub Task.

7006. Each COLS with COA is then compared and numbered in order of priority against each criterion. The COLS and COA ranking is then multiplied by the weighting factor to produce the score for selected criterion. The numerical for each COLS and COA are then totalled. The highest score will indicate the best and strongest COLS and COA.

7007. Each COLS and COA is numbered in order of priority of advantage for each criterion. The best COLS and COA for each criterion receives the highest score. For example, at Figure 7-2 for Distribution Tasks, COLS 1 and COA 1 is rated as '3', COLS 2 and COA 2 is rated as '1' and COLS 3 and COA 3 is rated a '2', the best COLS with regard to the selected criterion. Each COLS and COA rating is then multiplied by the criterion weighting. Again, using the Distribution Tasks criterion example, the weighted results are COLS 1 and COA 1= 9, COLS 2 and COA 2= 3 and COLS 3 and COA 3= 6. This results in two scores for each COLS and COA; one

raw score and one weighted score. Figure 7-2 shows the Example of Numerical Analysis Decision Matrix.

Criteria	Weight (W)	COLS 1 and COA 1		COLS 2 and COA 2		COLS 3 and COA 3	
		Rating (R)	R x W	Rating (R)	R x W	Rating (R)	R x W
Distribution Task	3	3	**9**	1	**3**	2	**6**
Maintenance Task	1	2	**2**	1	**1**	3	**3**
Facilities	2	2	**4**	3	**6**	2	**4**
Personnel	2	2	**4**	1	**2**	3	**6**
Health	3	2	**6**	3	**9**	1	**3**
C3	1	2	**2**	3	**3**	1	**1**
Redundancy	2	3	**6**	2	**4**	1	**2**
Total			**33**		**28**		**25**
Rank		**1**		**2**		**3**	

Figure 7-2: Example Numerical Analysis Decision Matrix

7008. The scores are then total giving a raw and weighted order of priority for the COLS and COA. In the example at Figure 7-2 above all raw scores are the same, but applying the weighting factor reveals a priority order of COLS 1 and COA 1, COLS 2 and COA 2 then COLS 3 and COA 3. The highest score is COLS 1 and COA 1 and identified as potentially being the strongest COLS.

7009. The numerical analysis can be broken down to specific task that the commander thinks as very important to be considered. For example the criteria for Distribution can be broken down to detailed criteria. Figure 7-3 shows how the detailed criteria being considered.

Criteria Distribution Task	**Weight (W)**	**COLS 1 and COA 1**		**COLS 2 and COA 2**		**COLS 3 and COA 3**	
		Rating (R)	**R x W**	**Rating (R)**	**R x W**	**Rating (R)**	**R x W**
POD	3	3	**9**	1	**3**	2	**6**
LOTS	1	2	**2**	1	**1**	3	**3**
Roads	2	2	**4**	3	**6**	2	**4**
Bridges	2	2	**4**	1	**2**	3	**6**
Railways	3	2	**6**	3	**9**	1	**3**
Ports	3	3	**9**	3	**9**	3	**9**
Pipelines	1	2	**2**	3	**3**	1	**1**
Redundancy	2	3	**6**	2	**4**	1	**2**
Total			**42**		**37**		**34**
Rank		**1**		**2**		**3**	

Figure 7-3: Example Numerical Analysis for Distribution Task

7010. **Broad Categories Analysis.** Unlike the Numerical Analysis, this technique does not give weighting to criteria. The assessment for each criterion is simply expressed as a positive (+), neutral (0) or negative (-). The criterions are based on Principle of Administration that compared against COLS and COA to provide a broad

awareness of the merits of one COLS and COA over another. The advantage of the broad category method is that it is simple and relatively quick. This approach is useful in indicating each COLS and COA strengths and weaknesses and is particularly useful if the staff is uncertain how to weigh criteria or feel the weighting will unrealistically bias the comparison result.

7011. Like the Numerical Analysis, this technique alone will rarely provide the commander a comprehensive argument as to why one COA and COLS should be elected over another. Figure 7-4 shows an example of a broad categories analysis decision matrix.

Criteria	**COA 1 and COLS 1**	**COA 2 and COLS 2**	**COA 3 and COLS 3**
Simplicity	+	-	+
Cooperation	0	+	-
Economy	0	-	+
Foresight	+	+	0
Flexibility	0	0	0
Security	0	0	0
Total	**2 +**	**0**	**1 +**
Rank	**1**	**3**	**2**

Figure 7-4: Example Broad Categories Analysis Decision Matrix

7012. **Advantages and Disadvantages Analysis**. An additional technique of analysis is to list the Advantages and Disadvantages of each COLS and COA against

all or a selection of criteria. This technique is particularly useful when combined with other techniques. This matrix allows the JLPG to expand upon those criteria that the commander indicated as the most important. Additionally, it may be used to summarise each COLS and COA. An example of this technique is shown in Figure 7-5.

COLS and COA	Advantages	Disadvantages
1	• Shortest SLOC • Minimal Equip maint • No new infrastructure • Less causalities	• FOB exposed • POL Difficulties • No HNS
2	• Pre-positioning • Redundancy • Flexibility	• Long-term sustainability • Vulnerability of logistic installation • Highly dependent on host nation support
3	• No health problem • Distribution asset will meet demand • Excellent POD/FOB	• Excessive ammo requirements • Expose SLOC • High maintenance

Figure 7-5: Example Advantages and Disadvantages Decision Matrix

7013. **Staff Decision Matrix**. Subjective Analysis is simply the use of the other matrices to analyse criterion by individual staff members within JLPG. This can then be recorded in a Staff Decision Matrix as per the example at Figure 7-6.

Planning staff may conduct subjective analysis before the staff's combined comparison brief.

7014. Each staff branch identifies the comparison technique that suits them. Depend on time available, all technique may be use and this will be decided by ACOS J4. He should be emphasise that the use of any technique is simply a means to differentiate between COLS based on criteria established by the commander prior to COLS Development.

JLPG Staff	COLS 1 and COA 1	COLS 2 and COA 2	COLS 3 and COA 3	COMMENTS
Movement Staff	√	X	X	COA 1 and COLS 1 have more network
Distribution Staff	√	√	√	
Health Staff	√	X	X	
Pers Staff	√	X	√	COA 2 and COLS 2 will achieve 2 day earlier with less risk
Health Staff	√	X	√	
Law Staff	√	√	√	
Finance Staff	√	X	X	
Engr Staff	√	√	X	
Log Component	X	√	X	

Figure 7-6: Example Staff Decision Matrix

7015. **Risk Assessment Matrix**. In addition, the commander assesses the risk associated with each COA and COLS. The situation and the Superior Commander's Intent will determine the elements of risk and their relative importance. The JLPG will decide the meaning of criteria high, medium and low before awarding each COA and COLS. Example of a COLS and COA Risk Assessment Matrix as per Figure 7-7.

Risk Assessment	COLS 1 and COA 1	COLS 2 and COA 2	COLS 3 and COA 3	COMMENTS
Redundancy	High	Low	Medium	
Sustainability	Low	Medium	Low	
Loss of personnel	Low	High	Low	
Effect on the environment	Medium	Medium	Medium	
Humanitarian and social implications	Medium	High	Low	

Figure 7-7: Example Risk Assessment Matrix

7016. The Risk Assessment Matrix can be broken down in details based on the risk that commander think is very important. Figure 7-8 shows the Risk Assessment Matrix on sustainability.

Risk Assessment	COLS 1 & COA 1	COLS 2 & COA 2	COLS 3 & COA 3	COMMENTS
Threat to LOC	High	Low	Medium	
Threat to key platforms	Low	Medium	Low	
Threat to vital infrastructure	Low	High	Low	
Effect on critical commodities	Medium	Medium	Medium	
Redundancy	Medium	High	Low	

Figure 7-8: Example Risk Assessment Matrix - Sustainability

SUB-STEP 2: REVIEW COLS FOR SELECTED COA

7017. On completion of the comparison the commander selects the best COLS for selected COA. If the Commander or ACOS J4 modifies COLS, the JLPG may need to revisit some or all of the previous JLPP steps to revise the COLS that match with selected COA according to commander's requirement. JLPP Step 4 (COLS Analysis) should then be conducted in-line with the modification.

7018. **Commander's Decision Briefing**. Sub-steps 1 and 2 together constitute the decision portion of this JLPP step. After completing the analysis and comparison, the staff identifies the preferred COLS for COA and makes a recommendation to the commander. If required, JLPG may conduct a formal briefing for the commander to

obtain a preferred COLS decision. Alternatively, the commander may simply decide on COLS that best support COA. A suggested decision briefing format is provided at **Annex B**.

7019. Once a COLS has been selected, the commander's statement of intent and CCIR may be refined. The selected COLS are developed into a CONOP, which is the catalyst for the development and refining of the OPLAN and supporting plans. The OPLAN in turn provide the information for the operation and issue of orders. Those COLS not selected during the comparison may become CONPLAN or deception plans.

SUB-STEP 3: COLS IN CONOP DEVELOPMENT

7020. COLS will support CONOP based on logistics functions and processes, and their corresponding interactions and information flows, stakeholders and roles and responsibilities. A draft CONOP is usually developed as the JMAP unfolds. During this step, the details pertaining to the selected COLS that best support COA is added to complete the draft and arrive at a fully developed CONOP.

7021. **Synchronisation**. Synchronisation should occur throughout Joint Operations Planning and before a COLS and COA is accepted to support the CONOP, both plan must be compatible. Any plans must also be synchronised with current and future operations.

7022. There is no specified format for a COLS. It may be presented in an oral, written or graphic format, or a combination. The COLS should contain sufficient

details to convey the key aspects of the logistics to support the operation, and allow JLPG subordinate to commence detailed planning. A suggested COLS briefing format is at **Annex B**.

7023. Once fully developed, the CONOP is passed to the JOPG for approval and may be modified, rejected or approved. If COLS is modified, the JLPG should review the modification and if necessary complete any necessary JLPP steps again to ensure the modification has been appropriately subsumed into the relevant COLS. If the COLS are rejected, the JLPG should reconvene and complete the JLPP steps necessary to produce another viable COLS.

7024. Decision and COLS Aide Memoire is as **Annex A** and Suggested COLS format is at **Annex B**.

Annexes:

A. Logistics Decision and CONOP Aide Memoire.
B. Suggested COLS for CONOP Brief.

ANNEX A TO
CHAPTER 7

LOGISTICS DECISION – AIDE MEMOIRE

Inputs	Steps And Activities	Output
(a)	(b)	(c)
COA Decision support matrix	1. **Confirm COLS with Selected COA** a. Individual key staff compare and provide recommendation (1) Logistic Numerical Analysis (2) Logistic Weighting by Criteria (3) Broad Category Analysis (4) Advantages and Disadvantages (5) Combined Staff Comparison (6) Risk Assessment Matrix (7) J4 staff recommend COA 2. **Review COLS for Selected COA** a. JLPG select COLS best support COA b. Other COA as contingency or deception plan	Staff recommend and back brief COA If required modify COLS Finalised COLS and COLS product

Sustainability statement Sketch COLS Synch Matrix	3. **COLS in CONOP Development** a. Develop logistics input b. Develop and synch time and space of COLS	

ANNEX B TO
CHAPTER 7

SUGGESTED COLS FOR CONOP BRIEF

1. Introduction.

The presentation should be no longer than 15 minutes. Map and sketch should be used to outline the plan. Out-lining the concept in general to support the Operations. It should cover the following points:

a. Key logistics and personnel assumption.

b. Logistics Command and Control.

c. Identify if there are any war stoppers.

2. Support by Phase. For each phase comments on the following points:

a. Priority of effort and brief description of the phase.

b. Location of logistics nodes i.e. FMB, FOB, Staging Area, APOD, SPOD etc.

c. Key Personnel and Logistics Assumptions.

d. Outline any issues of concern that may require risk mitigation.

e. Gross tonnages and space calculations.

f. Outline the supporting plan.

3. Outline Key Location.

4. Logistics Priorities.

5. Other Support/ HNS.

6. Movement Plan.

7. Engineer and Maintenance System.

8. Combat Supply & Distribution System.

9. Law Management.

10. Religious Management.

11. Medical.

a. CASEVAC and Body Evacuation Plan.

b. Level of health support and location.

12. Conclusion – Summarise key personnel and logistics shortfalls and how you plan to mitigate them.

- **The Briefing Will Be Given In Line With JMAP Step 5**

MAFJP 5-01.3

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