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ALLIED AIR FORCES DOCTRINE FOR LOGISTICS

Edition A, Version 1

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NORTH ATLANTIC TREATY ORGANIZATION

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NATO LETTER OF PROMULGATION

4 November 2020

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RECORD OF RESERVATIONS

CHAPTER	RECORD OF RESERVATION BY NATIONS
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RECORD OF SPECIFIC RESERVATIONS

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RELATED DOCUMENTS

AAP-06	See STANAG 3680
ACO COPD	*ACO comprehensive Operations Planning Directive*
ACO FPG-LOG	*ACO Functional Planning Guidance Logistics*
MC 0133/4	*NATO's Operational Planning*
MC 319/3	*NATO Principles and Policies for Logistics*
MC0326/4	*MC Principles and Policies of Medical Support*
MC 586	*MC Policy for Allied Forces and their use for operations*
MCM-0043-2013	*Bi-SC Conceptual Framework for Alliance Operations (CFAO)*
AJP-4	*Allied Joint Doctrine for Logistics*
AJP-4.4	*Allied Joint Doctrine for Movements and Transportation*
AJP-4.5	*Allied Joint Doctrine for Host Nation Support*
AJP-4.6	*Allied Joint Doctrine for the Joint Logistic Support Group*
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ALP-4.1	Multinational Maritime Force Logistics
ALP 4-2	Land Forces Logistic Doctrine
AFS Vol VI	*ACO Forces Standards Volume VI*
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APP-26	*NATO Standard Procedures for Mutual Logistic Assistance*
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AASSEP-13	*Aircraft Cross-Servicing*
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8569/11	*Concept for Air Operations in support of the Common Security and Defence Policy (8569/11, dated 05 April 2011)*
15040/14	EU Concept for Logistic Support for EU-led Military Operations and Missions (15040/14, dated 3 Nov 2014)
17036/114	EU Military Rapid Response Concept 9 (dated 8 Jan 2015)
ACO COPD	ACO comprehensive Operations Planning Directive
ACO FPG-LOG	ACO Functional Planning Guidance Logistics

CHAPTER 1 – Context

Section 1 – Introduction

1.1 **Background.** The nature of current and future air operations reflects the diversities and complexities of the multi-domain environment. This complexity requires an approach that emphasizes centralized control and decentralized execution. This approach enables freedom of action, tempo and initiative, in order to contend with the multitude of activities and rapidly changing situations. Nations and NATO have a collective responsibility for the logistic support of air forces involved in multinational operations. Air logistics support must be adequately tailored to satisfy operational requirements and must remain efficient and agile. The weapons systems used by air forces are technically complex, and place greater burdens on handling and service/repair facilities. Additionally, the nature of NATO operations includes operations out of remote and often bare bases and facilities. Air logistics is underpinned by a number of principles which aim to optimise logistics processes in order to support the tempo of air operations.

1.2 **Aim.** ALP-4.3 articulates to NATO and national authorities the doctrine for the logistic support to air forces. It provides a guide to optimizing the use of available logistic resources in all types of operations. It provides guidance for logistic support to air forces which is effective, flexible, adaptable and characterized by unified Command and Control (C2), providing specialized guidance to the Air Component Commander (ACC) in the prosecution of the mission. This version incorporates new doctrinal practices derived from lessons learned extracted from current and recent military operations and training exercises.

1.3 **Scope.** Each service component has a slightly different approach to implementing the concept of logistic support. This ALP concentrates primarily on operations where control is vested in the Air Component Command.

1.4 **Applicability**. This document is applicable to all levels of command and covers the full spectrum of potential NATO operations; be they Article 5; or Crisis Response Operations/Peace Support Operations (CRO/PSO). It includes those conducted in cooperation with the United Nations (UN), and the Organization for Security and Cooperation in Europe (OSCE). It is also applicable to non-NATO nations participating in NATO-led operations. ALP-4.3 derives its authority from other NATO policy, conceptual and doctrinal publications. It is complementary to the understanding of the approach to military operations identified in AJP-4 Allied Joint Doctrine for Logistics. It is to be followed except when, in the judgment of the Commander, exceptional circumstances dictate otherwise. Although the concepts and doctrine contained in this publication may be at variance with those of other nations' single-service publications, this publication will take precedence for the activities of Air Force Elements (FEs) unless

separate nations' Headquarters (HQ) have provided more current and specific guidance.

1.5 **Principles.** This Doctrine is based upon existing NATO policies and principles laid down in MC and other documents and publications. It is complementary to such documents which are referred to where appropriate. Notwithstanding the collective and shared responsibilities of NATO and the nations, the logistic support provided must be highly flexible and sufficient to sustain air operations across the full range of employment options. While cooperation is one of the guiding principles, nations:

a. Bear ultimate responsibility for ensuring the adequate provision of logistic support for their air forces allocated to NATO.

b. Retain control over their resources until they are transferred to the NATO commander. Thereafter, the resources may be subject to redistribution according to the specific provisions as defined in Annex A to MC 319.

c. May decide or be called upon to provide specific logistic functions to other nations under lead nation or logistic role specialist nation arrangements.

CHAPTER 2 – CONCEPT OF AIR LOGISTIC SUPPORT

2.1 **General**. This chapter details the concept of air logistic support for Alliance Operations and Missions (AOM), which includes all flying, Ground Based Air Defence (GBAD) units and their support elements, as well as dedicated communications units and deployable Air Command and Control Systems (ACCS). It also includes support to Deployed Operations Bases (DOBs), Forward Operating Bases (FOBs) and NATO Deployable Air Bases (NDABs). The principles of this concept are also applicable to NATO Airborne Early Warning (NAEW), Air-to-Air Refuelling (AAR) and Air Transport (AT) forces, as well as air assets of other components. Additionally, the concept covers requirements for deployment, sustainment and redeployment of the above forces. Air power has the unique ability to concentrate force and maneuver over long distances at great speed; however, the successful use of this ability will depend, among others, on the availability of adequate logistic support and infrastructure, and will require large amounts of high quality fuel. Furthermore, air forces' weapons systems are advancing in their technical complexity and sophistication. The logistic concept must take account of these logistic characteristics of air power. Nations should therefore accommodate these characteristics by careful peacetime provisioning and the optimum distribution of logistic assets and conflict consumables. They should also retain the ability to resupply and reinforce to ensure timely and continuous support. An air logistic support concept, structure and procedures must be tailored to the air units and their related employment options. At the same time consideration must be given to compatibility and interoperability with the other components' logistic support concepts, as laid down in ALP 4.1 and 4.2. In general, logistic requirements for the air component vary across a wide spectrum of complexities, with fixed wing aircraft at the most difficult end and GBAD units at the easier end. GBAD systems normally contain integral support elements which need relatively little infrastructure and are only limited by their supply lines. This concept therefore concentrates on the most demanding requirements, those of fixed wing aircraft.

2.2 **Logistic stakeholders and multinational logistic support**. To optimize the operational logistic footprint and reduce the cost of sustaining the operation, NATO encourages multinational solutions in the delivery of logistic support. Multinational logistics has therefore been identified as a tool, which, depending on the specific situation, can enhance efficiency and contribute to the improvement of the flexibility of the force, the conservation of scarce local resources and the use of specific national expertise. The extensive use of multinational logistics will not only enhance efficiency but also NATO credibility. Although national logistic support structures will normally be deployed at the start of operations multinational logistic solutions should be pursued at the outset of the logistic planning process. Multinational logistics is not an aim in itself. During the force planning and the force generation process the applicability, necessity and benefits of multinational logistics must be considered. AJP-4 includes

information on Modes of Multinational Logistic Support and provides the guidance to those involved in support planning for operations and exercises.

2.3 **Logistic support options**. In addition to the command structures, some of which have been detailed in this Doctrine, NATO is supported by a number of organizations and agencies. NATO Production and Logistics Organizations (NPLOs) are subsidiary bodies created within the framework of NATO for the implementation of tasks arising out of the Treaty, and to which the NAC grants organizational, administrative and financial independence. An NPLO is established with a view to meeting, to the best advantage, the collective requirements of participating nations in, amongst others, operational logistic support. In addition to a Board of Directors, or Steering Committee, subordinate committees are established as necessary and an agency is formed which is the executive managing body. There are two main types of NPLO: production logistics orientated, and consumer logistics orientated.

There are other organizations and agencies which provide support and services to NATO, such as the NATO Communications and Information Agency (NCIA), formed from the merging of NATO Consultation, Command and Control Agency (NC3A), the NATO ACCS Management Agency (NACMA), the NATO Communications and Information System Services Agency (NCSA), the Active Layered Theatre Ballistic Missile Defense (ALTBMD) Programme, and elements of NATO HQ. The NCIA connects forces, NATO and Nations, acting as NATO's Information Technology (IT) and Command, Control, Communications, and Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR).

The NATO Support and Procurement Agency (NSPA) acts as the principal logistical support management agency maintaining weapons, transport, and communication systems. It supports the Deployable Air Command and Control Centre (DACCC) and continually develops industry support to operations.

2.4 **Air employment concept**. Logistic support must be adequately tailored to satisfy the operational requirements of the commanders' intent whilst meeting the technological constraints. Logistics is increasingly joint and there is a greater likelihood that formation headquarters, even at the lowest levels, will incorporate elements of the other Services. Depending on the crisis response criteria, it is possible that the Air Force will be the predominant force in the Joint Operational Area (JOA). As such, it is possible that Air Force logistic elements may be required to provide some common user logistic support to other services, even when a Joint Logistic Support Group (JLSG) is not established.

2.5 **Air logistic concept**

a. **General.** The changed security situation and technology developments over the last decade require short reaction & deployment times of allied forces within NATO. The use of Air Forces to meet these time-critical requirements is crucial. To deploy forces within a few days to the area of operation can in certain

situations only be achieved if sufficient Air (Transport) Assets are available, due to its speed advantage. Due to the growing importance of reaction time, also (Air) Logistics, as a critical enabler to deliver Air Power, needs to be organized in an effective and efficient way to meet the operational requirements. As a consequence, in some logistic areas, pre-arrangements (contracts, transit agreements and pre-storage of supplies for example) have to be made in advance in order to meet the defined readiness timelines within NATO. IT developments throughout the recent decades have enabled Commanders and Logistic Staff Officers to organize logistics in a more effective and efficient way. C2 and monitoring the progress of a mission can in many cases be realized from remote/home base locations, without the need to deploy (C2) elements and forces to the area of operation.

b. **Operations**. Specific air logistic processes will be determined by each phase of an operation[1]. When there are concurrent operations, it is possible that Air logistics planning staff are simultaneously deploying Force Elements in support of one operation and redeploying Force Elements from another. For this publication, the logistic processes that comprise the Air Logistic Concept of Operations will be assumed to be taking place in isolation of other operations. It should be noted, however, that the reality of concurrent operations included in extant Planning Assumptions will impose a far greater degree of complexity on Air logistic support than might be inferred from the processes described in the rest of this doctrine.

2.6 **Multinational Logistic Support.** Multinational logistics increase a force's breadth and depth of capability. The NATO Response Force (NRF) concept will have a strong influence on these points.[2]

2.7 **Non-NATO Forces/EU Led Military Operations and Missions.** According to the 'Berlin Plus' arrangements[3], NATO assures EU access to NATO planning capabilities, use of NATO's European command options for EU-led military operations and missions (including the European role of Deputy Supreme Allied Commander Europe (DSACEUR), and the EU use of pre-identified NATO common assets and capabilities. In order to facilitate this cooperation, when viable and necessary, the commonality between EU and NATO standards and criteria will be encouraged as much as possible, with due respect to the decision-making autonomy of the EU and NATO in this context.

2.8 **NATO-EU cooperation in EU logistic planning**. Guidance in the EU Concept for Logistic Support for EU-led Military Operations and Missions provides sufficient flexibility for EU military commanders to closely co-operate with NATO, the UN, OSCE,

[1] See AJP-4, '*Allied Joint Doctrine for Logistics'*.
[2] See air relevant content of the MC 0586 and Bi-SC Conceptual Framework for Alliance Operations (CFAO).
[3] The Berlin Plus agreement refers to a comprehensive package of arrangements finalized in early 2003 between the EU and NATO that allows the EU to make use of NATO assets and capabilities for EU-led crisis management operations.

relevant International Organizations (IOs), Non-Governmental Organizations (NGOs) and non-EU Troops Contributing Nations (non-EU TCNs) which might take part in EU-led military operations. It considers challenges deriving from the EU Global Strategy 2016, the specific challenges related to a Rapid Response Capability (RRC), the EU Battle Groups (EU BGs), and the logistic lessons learned during EU-led military operations. The concept facilitates closer cooperation with EU-led civilian missions and covers all the different options for the execution of logistics functions. In coherence with NATO, this document has considered relevant Alliance logistic documents to the extent possible. On EU-led military operations, it is essential that the EU military commanders have the means and the authority to co-ordinate all logistic resources that directly impact on the support of the operation. This also applies to the strategic deployment of forces, the sustainment effort and redeployment of both common and specific resources. In any case, close co-operation with TCNs, EU civilian missions, UN, NATO, other IOs, NGOs and other civilian activities in the AOO, HN(s) will be required.

2.9 **Recourse to NATO common assets and capabilities.** The area related to the planning and conduct of EU-led military operations with recourse to NATO common assets and capabilities is known as "Berlin Plus" arrangements (see footnote 1). In case of recourse to NATO common assets and capabilities for EU-led military operations, the NATO Agency responsible for contracting logistic services in support of operations might be considered as a Contract Integrator, if considered appropriate.

CHAPTER 3 – AIR LOGISTIC COMMAND AND CONTROL

3.1 **Introduction**. Air Power's characteristics place great importance on the accurate coordination and synchronization of the Air Plan. It requires Command and Control (C2) to allocate tasks and missions in a highly responsive and flexible manner. To be effective, air assets must be in the air at the right place, at the right time, with the right load, the appropriate mission and with the correct understanding of the environment in which they are operating. Ultimately, the aim is to maximize Effects while minimizing Effort in order to help the Joint Forces Air Component Commander (COM JFAC) to reduce risk to the Mission and to the Force by the early achievement of synchronized Campaign Objectives.

Logistics is an Air Power critical enabler. The speed and tempo of air operations demand an uninterrupted flow of logistical support. C2 encompasses the exercise of authority and direction by a commander over assigned and attached forces in the accomplishment of the mission. Command includes both the authority and responsibility for effectively using available resources to achieve desired outcomes. C2 is by default mission driven, and thus the logistics C2 structure will be tailored to the requirement for each operation.

NATO forces must operate under the principle of Unity of Effort and should adhere to Unity of Command to the maximum possible extent by reducing national or component support stovepipes and increasing multinational, joint and collective logistics cooperation. Operations are normally characterized by centralized planning and direction to achieve unity of effort, whereas authority for execution should be decentralized. NATO commanders are responsible for the development and promulgation of the concept of logistics support as an essential part of the Operations Plan (OPLAN).

The Joint Task Force Commander (COM JTF) is delegated the authority to direct and coordinate Joint Logistics and RSOM for assigned forces within the JTF's specified AOR. The JTF HQ staff will plan and manage the execution of Logistics effect in the JTF's AOR that supports the JTF plan.

The COM JTF assumes the designated level of C2 of common funded logistics capabilities and of assigned national or multinational logistics capabilities, as directed and identified in each nation's Transfer of Authority (TOA) letter. To promote unity of effort, the COM JTF must have the proper authority to execute theatre-level logistics functions and activities within the agreed limits of the TOA. He exercises Tactical Control (TACON) over Troop Contributing Nations' (TCN) logistics capabilities that contribute to the Logistics Support to the JTF in accordance with the TOA and does not confer authority over nationally-owned resources held by NSE, except as agreed in the TOA

or in accordance with NATO principles and policies for logistics[4]. The level of logistics control agreed to therefore differs from nation to nation and mission to mission.

At the Theatre level, when the operation requires the deployment of a complete Joint Logistics Support Group Headquarters (JLSG HQ), the JLSG becomes the primary logistics C2 organization at theatre-level for the JTF[5]. In coordination with the Joint Logistics Staff (J4), the JLSG is responsible for coordination and execution of multinational theatre-level logistics support.

At the Joint Force Air Component (JFAC) level, within the Combat Service Support Division (CSSD), the Logistics Branch is the primary air component logistics C2 organization, responsible for coordinating the JFAC logistics effort to enable and sustain the air campaign.

In addition, as part of the JFAC, the Airlift Coordination Centre (ALCC) is the single point of contact for the management and coordination of all fixed and rotary wing aircraft allocated for air transport tasks inside the Theatre of Operations (TOO), in close coordination with the JLSG if established.

3.2 **Air logistic command and control relationships**. **NATO Command Structure**. The NATO Command Structure (NCS) functions at three levels: strategic, operational and component. Logistics C2 entities are part of this structure and distributed at the different levels.

a. **Strategic level**. Allied Joint Forces are employed within a political-military framework endorsed by the Military Committee (MC) and approved by the North Atlantic Council (NAC). Overall command of any operation at the strategic level is assumed by Supreme Allied Commander Europe (SACEUR).

b. **Supreme Headquarters Allied Powers Europe J4**: J4 Division at Supreme Headquarters Allied Powers Europe (SHAPE) contributes to the development and management of logistics concepts, capabilities and doctrine. This is made in coordination with National Authorities, developing and implementing policy, plans, concepts, guidance and procedures related to Logistics Support. J4 provides SHAPE representation and interface with external Committees and Agencies related to Logistics Support, including all aspects of strategic movement coordination.

c. **Supreme Headquarters Allied Powers Europe J4 logistics and plans**: When it comes to the support of operations and exercises, J4 is in charge of producing strategic logistics assessments and analysis, defining the logistical operational requirements and developing strategic logistics plans in collaboration with National

[4] MC0319 and AJP-4.
[5] AJP-4.6, Section II, 0109 Logistic Command and Control Arrangements, Figure 1.1.

authorities and in coordination with NATO and non-NATO military and civilian headquarters and organizations. It coordinates, monitors, and controls the execution of these plans and provides direction and guidance to subordinate commands.

d. **SHAPE J4 Allied Movement Coordination Centre (AMCC):** As part of J4, the AMCC is responsible for managing strategic movement, which encompasses the overall deployments, transportation for sustainment, and redeployments, as defined in the Allied Disposition List (ADL). This also includes the designated NATO Commanders requirements, objectives and priorities. In this respect the AMCC, in cooperation with TCNs, constructs the Multinational Detailed Deployment Plan (MNDDP), and addresses strategic lift shortfalls. It performs this task in peacetime, and for exercises and operations.

3.3 **Operational level.** At the operational level, the planning and conduct of operations, based on the strategic military guidance received, is in the hands of the designated operational commander who exercises their responsibilities through a joint permanent or deployable headquarters.

a. The Standing Joint Logistics Support Group (SJLSG) HQ's mission is to logistically enable the responsive deployment of NATO forces to the periphery of Alliance territory. This includes their employment by means of proactive, continuous and enduring preparatory activities and through the provision of time-critical theatre support within all operational phases and to all scale in support of the nominated Operational commander.

b. SACEUR has Operational Command (OPCOM) over the SJLSG, whose HQ will act in a supporting role to a supported Allied Command Operations (ACO) HQ. It will provide logistics expertise related to the enablement of NATO forces for time-critical operations as requested. Operational responsibilities of the SJLSG HQ in support of the land, air, maritime and SOF components will cover the support activities within TOOs and/or Joint Operations Areas (JOA) and the approaches to them. At the Operational level, the SJLSG HQ will, in conjunction with Nations, make the structures contributing to the collective effort coherent.

c. The SJLSG HQ will hold Direct Liaison Authority (DIRLAUTH) for support with JFC/JTF HQ, CC HQs, 3*/2* HQs, Framework Nation (FN)/Sending Nation (SN) and Host Nation (HN) (including NATO Force Integration Units (NFIUs), where available and national logistics C2 elements).

d. COM JTF granted JTF logistic C2 must establish a flexible command and control structure to coordinate national and multinational logistics and support the NATO commander's concept of operations. The combined joint logistic C2 structure must also provide the NATO commander with visibility over logistics implications that will have an impact on operations. The operational considerations

associated to the type of operation (Article 5 or non-Article 5) will impact significantly on the concept of the logistic operation and the specific C2 organizations to be implemented. Readiness standards demand NATO logistic staffs be prepared for rapid deployment and provision of adequate sustainment mechanisms to meet the needs of the operational commander. Logistic readiness standards must match those of the organization it is to support.

e. Multinational Corps Northeast (MNC-NE)/ Multinational Division Southeast (MND-SE). SACEUR has primary responsibility for oversight of all NFIUs, exercised through the JFC's OPCON of the NFIUs. MNC-NE and MND-SE assume the command of their assigned NFIUs.

f. The primary purpose of the NFIUs is to facilitate the rapid deployment of the Very High Readiness Joint Task Force (VJTF) and other NRF elements. The NFIU can facilitate a smooth transition of air forces from peacetime to crisis. Communications and passage of information between AIRCOM and the NFIUs is essential to achieve unity of purpose and action. The NFIU contributes to the assessment and coordination of movement plans, policies and concepts for HN wide logistical operations including Reception, Staging and Onward Movement (RSOM) (primary role of the NFIU from an Air perspective) and theatre movement control plans.

3.4 **Component command.** At this level, one or more component command HQs provide service-specific expertise for JFCs, as well as advice on joint operational level planning and execution.

a. **Standing Joint Logistic Support Group**. Tactical level responsibilities of the SJLSG HQ in support of the land, air, maritime and Special Operations Forces (SOF) components will cover the support activities within TOO/JOAs and the approaches to them. At the tactical level, the responsibility for the prosecution of tactical functions will be delegated to either HNs or expeditionary JLSG HQs.

b. **Joint logistic support group**. The JLSG Commander (COM JLSG) is responsible to the COM JTF for the planning, coordination and execution of theatre-level (3rd line) logistic support with participating National Support Elements (NSEs), CCs, HNs, and non-military organizations, and is also responsible for the C2 of assigned resources in order to execute the agreed theatre-level logistic support.

c. **Joint logistic support group headquarters**. The JLSG HQ provides theatre-level sustainment, supports RSOM, manages infrastructure, engineering and coordinates medical support within its area of responsibility through the Medical Director (MEDDIR).

d. As part of the RSOM process the JLSG may have tactical control/command of units passing through the JOA, based on the actual level of control or coordinating authority specified in the TOA.

e. Execution of the tasks will require significant coordination of the overall logistic effort, involving both the logistic units assigned to the JLSG and the logistic contribution of the CCs.

f. Particular effort with the JFAC is essential to ensure the necessary coordination of the Intra-Theatre Airlift System (ITAS), prioritizing the requirement for transportation, and the Combined Air Terminal Operations (CATO) units.

g. Component Commanders and/or TCNs will delegate Tactical Control (TACON) to the COM JLSG over the forces in the process of RSOM from arrival in the Ports Of Debarkation (POD) until they arrive at the release point/Final Destination (FD).

h. The JLSG is responsible to control and co-ordinate personnel reception and in-processing operations at Airports of Debarkation (APOD(s)), in order to ensure the efficient reception of personnel into theatre. A Theatre Reception Centre (TRC) manned by personnel of the Passenger Reception Unit (PRU) will be established at the APOD to in-process personnel arriving in theatre. Personnel Handling Areas (PHAs) will be set up at or near the APOD(s). Delineation of responsibilities between the JLSG and the JFAC for operating the PHA(s) must be clearly identified.

3.6 **Headquarters Air Command structure, roles and functions.** HQ AIRCOM is the PE Air C2 structure. HQ AIRCOM is comprised of a Command Group, Specialist Staff, and three Directorates: the Plans Directorate, the Support Directorate, where logistics lays, and the Operations Directorate.

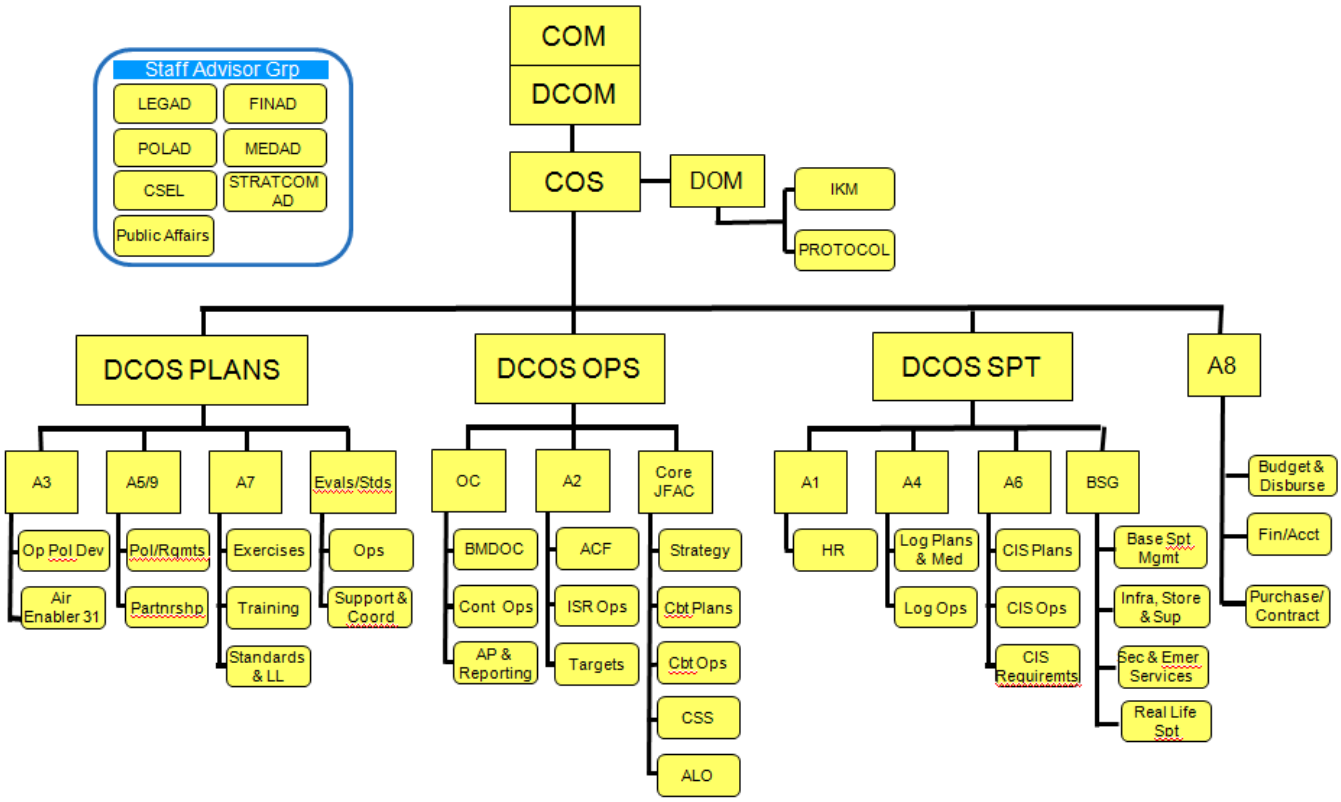

Figure 3.1 HQ AIRCOM[6]

3.7 Support Directorate. The Support Directorate is responsible to the COS for directing, monitoring and coordinating support staff functions. It supports the development of policy, plans, guidance and procedures related to logistics, engineering, mobility and medical support with national authorities and NGOs.

a. **A4 Division.** The A4 Division is a peace time entity responsible to the Deputy Chief of Staff (DCOS) Support for the preparation, planning, directing, coordinating, and supervising of all logistics matters as they relate to air operations throughout the NATO AOR and beyond (both Article 5 and non-Article 5). To support this aim, A4 staff provides SME advice and recommendations on logistical, medical and engineering matters within AIRCOM and to other NATO Commands and entities that require assistance. During crisis, the A4 logistic and engineer functional areas move under the command of the Combat Service Support Division (CSSD) as Logistic Branch (See Figure 3.2, JFAC structure). This branch reports to the CSSD chief, who reports to the JFAC Director. Logistic expertise is spread throughout the JFAC organisation, ensuring that Air Operations are fully supported and that the correct entities are in place, such as: sustainment (for all classes of supply), movement, transportation, and engineering coordination. During crisis,

[6] Source: HQ AIRCOM.

the A4 Medical Section becomes a Medical Branch connected to the CSSD (See Figure 3.4, JFAC CSSD functional sub-areas). This cross-divisional Medical team provides medical advice and expertise to all JFAC divisions and to the COM JFAC[7].

3.8 **Joint force air component**. The JFAC is the crisis establishment (CE) Air C2 structure. As designated by SACEUR the JFAC has the responsibility to deliver Air Power for an operation. The mission of the JFAC is to plan, direct, task, coordinate, supervise, assess and report on air operations of all allocated assets in crisis and conflict in accordance with the OPLAN, JFC Directive and COM AIRCOM directives. In addition, the JFAC will liaise with the appropriate land and maritime forces as well as NATO agencies and national/international organizations, if required for the conduct of the mission. The JFAC provides COM AIRCOM with the tools to perform near real time air power employment and management.

3.9 Among COM JFAC specific operational responsibilities, the logistics related ones are:

- Identify logistic requirements for Air Operations as well as prioritize and coordinate logistic planning and support of these operations;
- Closely coordinate with JLSG to ensure efficient redistribution and reallocation of logistic resources as necessary;
- Coordinate and schedule intra-theatre airlift assets and ground support equipment to meet requirements as established by COM JTF;
- Assess in the establishment of APODs, including the resources and manpower to track the reception and rapid dispatch of goods, material and personnel;
- Lead the establishment of appropriate medical facilities;
- Coordinate and schedule aeromedical evacuation assets to meet requirements as established by the COM JTF;
- Sustain HQ functions and support elements over an extended period of time requiring rotation of personnel and assets as appropriate; and
- Coordinate the re-deployment of Air assets to home bases in close coordination with the JLSG and SHAPE AMCC.

[7] The combined joint medical staff provides the medical contribution to the operations plan and exercises the coordinating authority for medical support in cooperation with all relevant stakeholders on behalf of the commander.

3.10 **JFAC structure and organization**.

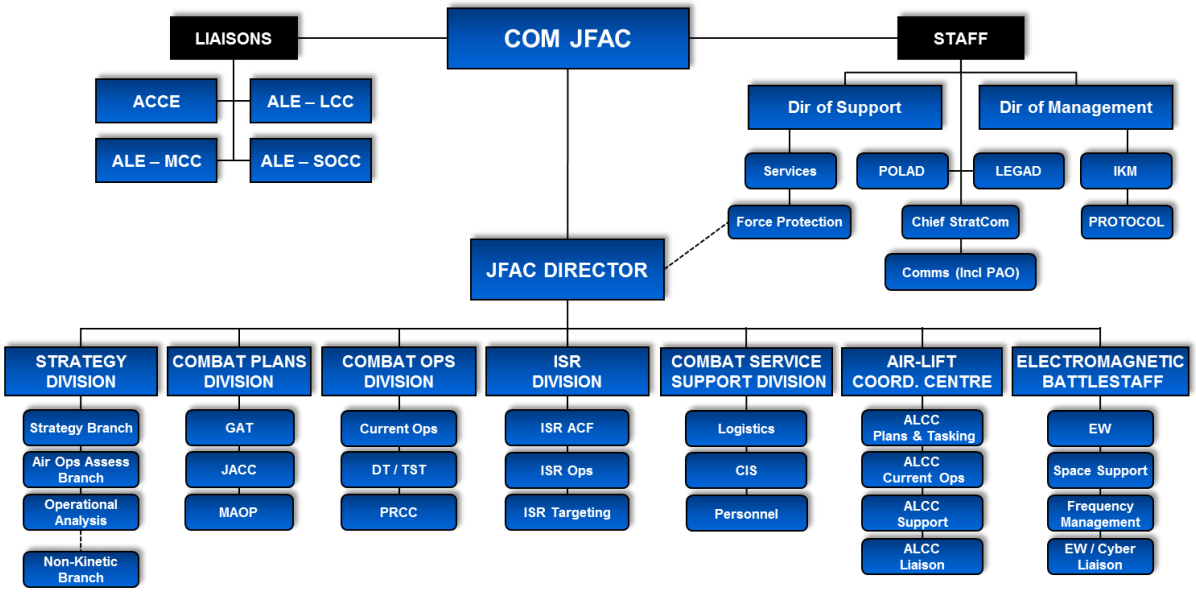

Figure 3.2 Generic JFAC structure[8]

3.11 JFAC structure is process oriented. With this in mind, Air C2 processes can be divided in to two main categories:

a. **Conditions Based Processes**: Certain conditions must be in place in order to start the process.

b. **Time Based Processes**: Whatever the conditions are, the process starts at a particular given time. Most of the Time Based Processes are directly linked to the Air Tasking Order (ATO) production cycle.

[8] Source: JFAC.

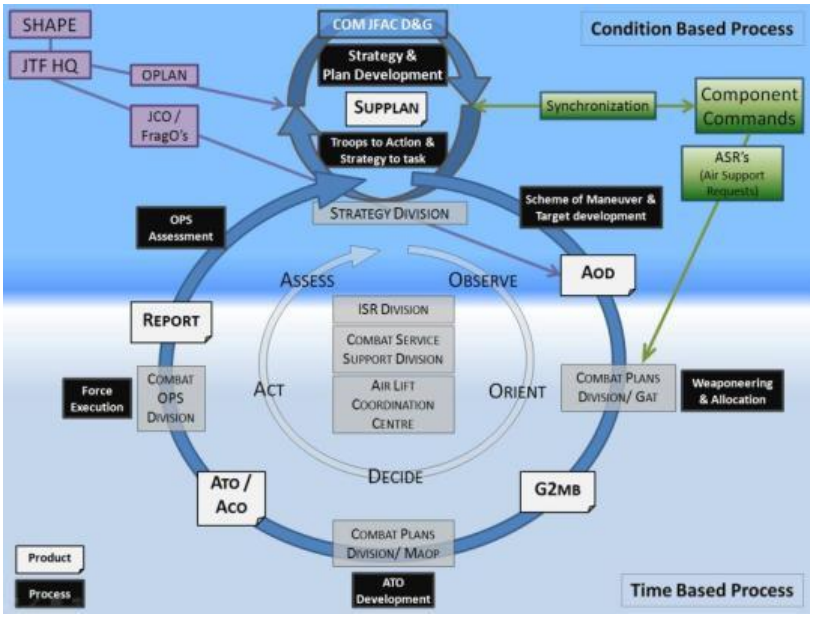

Figure 3.3 Condition and time based processes[9]

c. At the centre of the time-based process, providing a constant contribution to the Air Operations Cycle, there are two JFAC staff entities directly linked to air logistics which perform specific tasks:

- CSSD: Support the JFAC; and
- Airlift Coordination Centre (ALCC): Ensures effective integration of intra-theater airlift operations.

3.12 **Combat services support division.** Interfaces with other JFAC Divisions to facilitate attaining JFAC objectives. It produces, coordinates and executes sub-area plans to sustain the air power contribution to the joint campaign, giving support in various functional areas to the JFAC and subordinate units. This Division is structured into four functional sub-areas: Personnel, Communications, and Logistics. The Logistics (LOG) Branch is responsible for coordinating the JFAC logistics effort to enable and sustain the Air campaign by reviewing and identifying logistics requirements as well as constraints/limitations that may impact the production of the Air Operations Plan.

[9] Source: HQ Aircom.

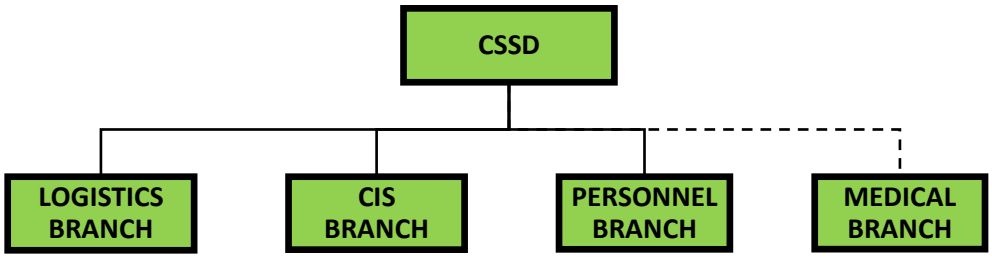

Figure 3.4 JFAC CSSD functional sub-areas[10]

3.13 **Airlift coordination centre**. It is the single point of contact at JFAC for the management and coordination of all fixed and rotary wing aircraft allocated for air transport tasks. It contributes to all phases of the ATO cycle, ensuring the integration of all Air Transport missions into the overall air operations plan via the AOD. ALCC maintains situational awareness of the battle space and constant contact with subordinate elements and assets, as well as other assets available for tasking. In coordination with the JLSG it integrates the planning, tasking, coordination, and control of ITAS within the ATO cycle. Another area of work is the support to Aeromedical Evacuation (AE) planning and execution.

3.14 **Joint force air component logistic branch**. The LOG Branch is responsible for managing and executing 1st and 2nd Line Logistics at Deployed Operating Bases (DOBs) or if assigned at APODs, and Deployable Air Operations Centre Recognized Air Picture Production Centre Sensor Fusion Post (DARS) by ensuring careful management of HN, SN, NATO Support Agency (NSPA) and Contracted support to ensure delivery of Air Operations. ACC Logistics will liaise with JLSG as required to ensure 3rd Line support ensures deployment and sustained operations including elimination of as many constraints and limitations as possible.

3.15 The LOG Branch provides direct support to the CSSD and JFAC subordinated units on request. It interfaces with other JFAC Divisions, specifically Strategy Division (SD), Combat Plans Division (CPD) and Combat Ops Division (COD); by including LOG positions within them to facilitate the consideration of logistics along the ATO Cycle.

3.16 The LOG Branch monitors and controls all JFAC logistics activities within the JOA. It coordinates the joint support with JTF/J4, SJLSG and JLSG. In addition, it plays a leading role inside the JFAC in the planning and management of the RSOM process, enabling deployment and redeployment of ACC forces in accordance with COM JFAC priorities and in close coordination with the JLSG. Furthermore, the LOG Branch coordinates common multinational support across the JFAC and assists nations in resolving supply shortfalls of nationally provided assets to the greatest extent possible.

[10] Source: Aircom.

3.17 The LOG Branch is led by the Logistics Chief (LOG Chief) and is usually broken out into five functional areas: Reporting, Sustainment, Engineering, Movements & Transportation (M&T), and Medical Support.

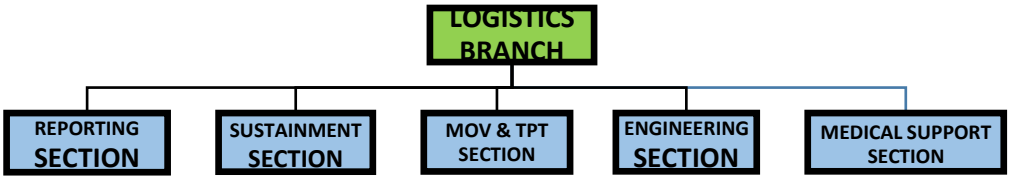

Figure 3.5 Log branch functional areas[11]

a. **Logistic Chief.** Responsible for assessing in planning, coordination and monitoring the JFAC bed-down and Air logistics support for allocated JFAC forces. The LOG Chief will analyze and evaluate the logistic situation and provide recommendations for logistic issues impacting the campaign. The LOG Chief will initiate appropriate multi-national or joint solutions to resolve logistics challenges and will provide recommendations on the reallocation and redistribution of assets or logistics capabilities. Additionally, the LOG Chief will issue cross functional logistics guidance affecting current operations, intra-theatre airlift, forces bed-down and AE.

b. **Reporting Section**. The Reporting Section is responsible for providing dynamic logistics information to HHQs, CCs and subordinate Units. It prepares information packages by consolidating logistics data provided by JFAC dependent entities. Reports will be generated to facilitate and support the Commander's decision-making process during the Air campaign. Reporting Section contributes to the JFAC daily RLP report after receiving daily updates from JFAC dependent entities on force and equipment levels. The RLP is submitted to the JLSG HQ, which is in charge of establishing and maintaining the RLP, as a part of the Common Operational Picture for the JTF COM. Logistic Reporting is mainly conducted by using LOGFAS (Logistics Functional Area Services), the primary logistic tool in use in NATO.

(1) **Logistic Functional Area Services**. LOGFAS is NATO's tri-service multi-national system which facilitates the planning, execution and reporting of Movements and Logistics activities using an integrated series of computer applications. It is an automated logistic software suite, designed to be used by NATO's individual nations and in a multinational capacity for missions, operations and operational training. LOGFAS comprises several applications that address different operational domains and share a common data set

[11] Source: Aircom.

through a central database. Individual users can have their access tailored to meet their requirements.

At present, NATO experts are working on preparation and developing the new logistics information environment, LOG FS (Logistics Functional Services), which will provide the functionality needed for the command and control of all logistics components, including the provision of logistic information into a Common Operational Picture.

c. **Sustainment Section.** The Sustainment Section is responsible for ensuring the sustainment of the JFAC. It coordinates with JFAC Divisions to discern logistics requirements, capabilities and constraints to the operation. It coordinates joint support with the JLSG from the early stages of the planning process and execution of an operation, in order to assure logistics sustainability for all force packages coming into theatre through all possible entry nodes (an SPOD, APOD, Railhead, Land Border Crossing points) to gain and maintain Full Operating Capacity.

d. **Joint force air component Movement and Transportation Section**. The M&T Section plans and monitors the intra-theatre movement of personnel and equipment in support of the JFAC in coordination with JLSG. M&T will monitor transportation for the deployment, onward movement, and redeployment of JFAC forces. It analyses the requirements for the movement of those forces, preparing Air Transport (AT) requests for submission to the JLSG concerning the movement of all passengers and cargo.

e. JLSG will, upon request, provide theatre level transportation assets (either military or civil contracted) by making use of the Intra Theatre Lift System (ITLS). The ITLS consists of the Intra Theatre Airlift System (ITAS), Intra Theatre Sealift System (ITSS) and surface transportation assets (Road transport, Rail transport, Inland waterway transport).

f. The JLSG M&T Section ITAS Cell is primarily responsible for managing ITAS assets, both fixed wing (FW) and rotary wing (RW), during the entire mission. It is also the central theatre point of contact for all requests for passenger and cargo air transport support within theatre.

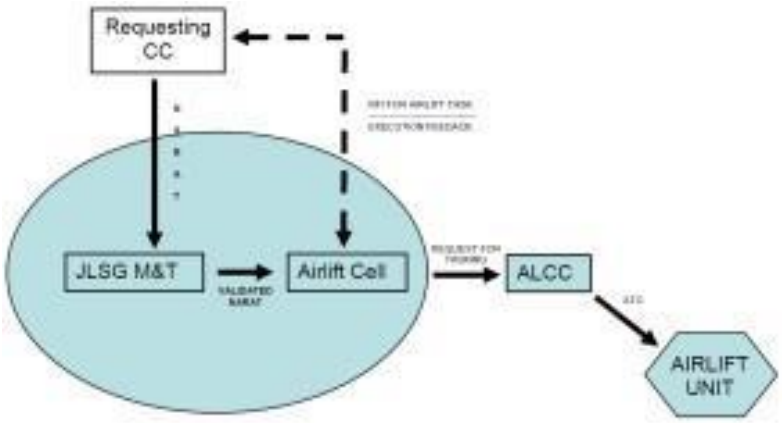

Figure 3.6 ITAS Cell[12]

g. While the JFAC is directly responsible for the tasking of all Air Assets in theatre, the JLSG HQ will coordinate the ITAS in close liaison with the ALCC and prioritize the requirement for transportation. This may also include JFAC RW aircraft and even LCC and MCC RW assets as available and if necessary.

h. OPCON of the CATO at the APOD will remain with COM JFAC; however, RSOM Commander will have coordinating authority to set priorities for the execution of RSOM.

i. The unique aspects of M&T operations are further amplified in Chap 4 Section 4.5.

j. **Engineering Section**. The Engineering Section monitors and assesses infrastructure requirements to sustain the Air campaign, paying special attention to airfield infrastructure issues at designated bed-down locations. Engineering resolves infrastructure issues with JTF/JENG, JLSG and Multi-National Logistic Centres (MNLC), identifying air infrastructure capability shortfalls and preparing Crisis Response Operations Urgent Requirements (CUR).

k. **Medical Support Section**. The Medical Support Section will coordinate with JTF/JMED, JLSG MED and other CCs MED to jointly provide theatre wide medical support and AE, giving advice about their requirements. The Medical Support Section develops the JFAC concept of operations for medical support. It provides guidance to NATO and contributing nations concerning airbase medical support. It also participates in mass casualty (MASCAL) planning. Within its duties, it advises on the medical status of JFAC personnel and medical resources and initiates actions to identify and reduce shortfalls in medical support. The Section

[12] Source: Aircom.

coordinates tactical AE in support of JOA-wide operations and supports the JTF Medical Director (JTF MEDDIR) in the coordination of strategic AE with the ALCC through the Aeromedical Evacuation Coordination Centre (AECC) which is a part of the Patient Evacuation Coordination Cell (PECC). It also coordinates tactical Medical Evacuation (MEDEVAC) by means of AE through the Patient Evacuation Coordination Cell (PECC). Under the lead of the JTF MEDDIR, is responsible for coordinating with the CC MEDDIR, particularly during the medical support of the RSOM phase for the overall theatre. When deployed the JLSG Medical Section coordinates all medical support during the RSOM phase until Medical Advisors (MEDAD) of the CCs can take over their responsibility. Medical Support is further amplified in Chap 4 Section 4.7.

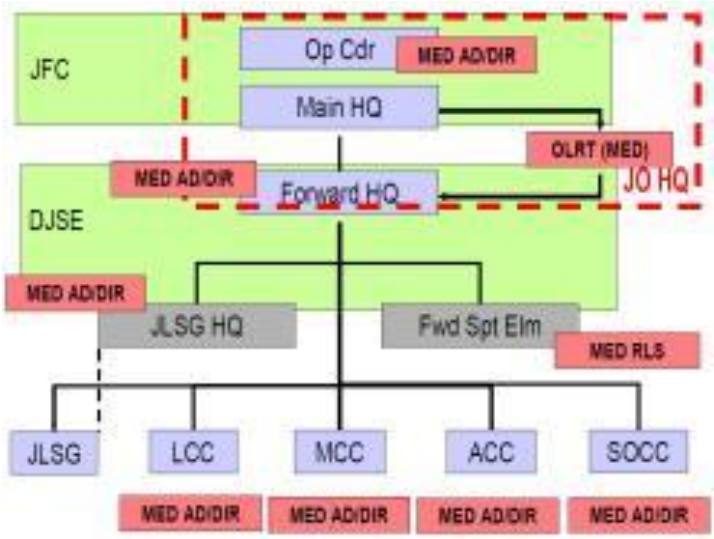

Figure 3.7 Medical support within the JFAC[13]

l. Logistic Communication and Information Systems (CIS)

(1) **General**. The NATO General Purpose Segment Communication System (NGCS) encompasses the communication systems to be used for the exchange of the logistical information between NATO HQs, SCs, CCs, JHQs, external entities and units. The available systems within NGCS are NATO Core Network and Secure Voice, Allied Information Flow System/ Allied Information Management System (AIFS/AIMS) for formal messages, mail exchange services on the operation or exercise main network (NATO Secret or Mission Secret) and a set of Functional Area Services and Core Services in order to fulfill with the operation/exercise operational requirements. When necessary, these systems could be augmented by other CIS resources, once coordinated with the NCIA, such as the following:

[13] Source: Aircom.

- NATO Deployable CIS equipment;
- National Defence networks;
- Non-NATO Entities networks;
- Tactical networks such as HQ links, TACSAT, etc; and
- Civil systems.

(2) **Deployed Units.** Responsibilities for the provision of the necessary communications connectivity to deployed Air entities lies with the following:

(a) NATO is responsible for the provision of the C3 (Consultation, Command and Control) links from NATO formations to the deployed location both for operations and exercises. The Deployable CIS capabilities will be provided by the NATO CIS Group and NCIA.

(b) Other supporting NATO agencies, entities, national CIS elements, non-NATO entities as well as commercially-contracted CIS service providers have to be engaged in the planning process as soon as possible.

(c) NATO CIS Group will act as the Coordinating Authority for C2 Services support to operations, including CIS personnel, CIS equipment, CIS related non-CIS equipment (such as generators and vehicular platforms, etc.).

(d) NCIA will deliver C2 services and will support NATO CIS Group with the CIS SUPPLAN development and will support them during Execution Phase.

(e) SHAPE J6 in coordination with the operational HQ, NATO CIS Group and NCIA will advise SHAPE DCOS CCD on the allocation and prioritization status for all CIS assets in all operational theatres, which should be reflected in the CIS SUPPLAN.

3.18 **Joint force air component coordination and liaison with commander joint task force, other component commands and subordinate forces**. Close working relationships will be established between a JFAC and JTF, other CCs and subordinate units.

a. **Joint force air component liaison with the joint task force headquarters**. The COM JFAC may deploy an Air Component Coordination Element (ACCE) to the Joint Force or COM JTF's HQ elements to better integrate Air and Space Operations within the overall Joint Campaign Plan. The ACCE is responsible for understanding (and participating in, if possible) initial COM JFAC planning and understanding the plans of their supported commander. A two-way relationship exists with the ACCE in that they provide information flow to the COM JFAC and ensure COM JFAC information is flowing to and understood by the JTF HQ. ACCE personnel work with their respective counterparts in the JFAC to provide the JTF HQ staff information on the best way to employ air and space power. The ACCE staff should be sized appropriately, incorporating sufficient qualified expertise to best represent the COM JFAC and the JFAC at the JTF level working groups and boards. Within the specific responsibilities of the ACCE, from a logistics point of view it has to ensure the COM JTF is aware of COM JFAC support requirements, deficiencies, capabilities and restraints. In a reverse way it has to ensure that the COM JFAC is aware of the COM JTF and/or the supported commander's priorities, plans and Air support requirements.

b. **Joint force air component liaison with component commands.** The Air Liaison Element (ALE) is subordinate to the COM JFAC and is the representative to other CCs HQ as deemed necessary by the COM JFAC. The ALE staff should be sized appropriately to best represent the COM JFAC and the JFAC at the hosting component. Within the specific responsibilities of the ALE, from a logistics point of view it has to ensure the COM CC is aware of COM JFAC support requirements, deficiencies, capabilities and restraints. In a reverse way it has to ensure that the COM JFAC is aware of the CCs priorities, plans and Air support requirements.

3.19 **Location of air force elements**. Most Air operations are conducted from fixed locations and are, in this respect, different from operations conducted by other Components' combat FEs. Air FEs may be located on DOBs, at APODs/SPODs and at FOBs/or Forward Operating Locations (FOLs), with the enabling capabilities providing logistic support and resources suitable to these locations. [14][15]

a. **Deployed operating base (DOB).** Careful consideration must be given to the location of these. For Air-only operations, experience has underlined that Air FEs must be able to operate from DOBs with little or no available indigenous infrastructure or life support facilities, and at the end of strategic and in-theatre extended Lines of Communication (LoCs).

[14] The concept of agile, adaptive, or resilient basing which is being developed would require logistic support to fast jet and AT aircraft including next generation aircraft.

[15] In some cases, NATO may elect to activate the NDAB in order to provide airport and air navigation services at a single bare airfield, to both military and civil aircraft operating 24/7 in all weather conditions, without HN support for a period of one year.

b. **Airports of debarkation (APODs).** Early deployment of logistic enablers to APODs is essential to mission success. The APOD comprises the combined facilities required in order to effect RSOM and, ultimately as the in-theatre Airport of Embarkation (APOE), the redeployment of those FEs or their constituent parts deploying by air. Fundamentally, it achieves this via the close co-ordination of the two areas of activity which define and delineate its functionality (and which themselves provide mutual support in several areas); specifically, airfield operations (including fire and emergency services) and logistic activities. The former will include: airfield C2; Air Traffic Control; airfield radar, navigational aids and airfield CIS; meteorology; Tactical Air Lift Control Element functions; the execution and control (via a Movement Control Centre (MCC)) of air movements; and Air Traffic Security. It will also require those logistic functions required to support it, such as the provision of aviation fuel and aircraft maintenance. Logistic activities at the APOD, consistent with the requirements of RSOM, are likely to include:

(1) Aircraft offloading.

(2) Personnel handling, including Immigration and Customs clearance, TRC functions (reception, orientation briefing, Operation Location (OPLOC), Medical screening and documentation) and staging functions including transit accommodation and Real Life Support (RLS).

(3) Personnel onward movement, including the provision of transport, Lines of Communication (LoC), Force Protection, RLS and personnel tracking.

(4) Freight handling, including asset tracking, consignment breakdown and theatre reception and freight storage (including for the Cold Chain).

(5) Freight onward movement, including co-ordination with all available in-theatre transport assets, and movement control.

(6) Freight recovery, including the back loading of high priority repairable equipment.

(7) Passenger recovery, including AE.

(8) Other responsibilities of the APOD may include acting as the strategic and tactical AE hub, with Role 3 (Field Hospital) facilities supported by Medical Support (MS) personnel to undertake the AE task. A Role 1 MS capability, including airfield crash cover, will also be required for all APOD-based and transiting personnel.

(9) APOD logistic capabilities will be provided by a combination of, or individually from, HN, Logistic Lead Nation (LLN), Sending Nation (SN), Contractor

Support to Operations (CSO) and JLSG FE based upon the size of the operation and agreed CJSOR capability requirements. Specialist logistic capabilities will need to be provided by the SN when not available by HN, CS, or JLSG.

c. **Forward operating base** (**FOB).** An expeditionary base, located in the combat zone, that supports the employment and sustainment of deployed forces; float positions and other locations which are potentially 'fixed' only in the short term.

d. **Forward operating location** (**FOL).** Any location at which materiel has been prepositioned and services prearranged to support the employment and sustainment of expeditionary air forces.

3.20 **Organization to support remote off-base units**. The scale, composition and C2 of off-DOB Air logistic capabilities, and specifically where C2 lies will be determined by a variety of factors considered both at the operational level and tactically by JFACHQ logistic planners. These factors will include the full gambit of the Air logistic considerations applied to the force lay down, within the JOA, of Air combat and enabling FEs. It is therefore inevitable that within the framework of conceptual and doctrinal guidance (as directed by policy and articulated by procedures), each operation will impose the requirement for logistic planning staffs at all levels collectively to produce support solutions based on pragmatism, innovation and flexibilityOPP may identify additional coordination requirements which, could include, the owners of battle-space that contains logistic infrastructure assigned to COM JLSG and other stakeholders (i.e. contractor support to operations, IOs, NGOs, HN).

CHAPTER 4 – LOGISTIC FUNCTIONS AND RELATED ACTIVITIES

4.1 **Introduction.** Logistic functions and activities revolve around the process and mechanism by which sustainability is achieved. It consists of supplying air forces with consumables and replacing combat losses and non-combat attrition of equipment in order to maintain the air force's combat power for the duration required to meet its objectives. To deliver logistic capabilities in a multinational context, COM JTF must derive a support plan that comprises all activities required to maintain the combat power of the air force. These are identified here and articulated below:

- Supply;
- Materiel handling and life-cycle support;
- Equipment and maintenance;
- Movement and transportation;
- Services; and
- Medical support

4.2 Supply

a. **General.** Compatibility of materiel handling by different agencies is essential; most will be transported by surface means via inter-modal transfers. Containerization and materiel identification are critical to enable rapid deployment and re-deployment of materiel when operations involve multinational joint forces.

b. **Containerization.** In accordance with STANAG 2236, nations will utilize 20-foot ISO containers for storage, transportation, and installation of equipment and mobile facilities. For container loading/unloading the design criteria of STANAG 2413 shall be applied to military TEU. The use of 40-foot equivalent units, which require larger and more specialized equipment and facilities, will be restricted to the movement of outsize cargo. In the event that 20-foot ISO containers are not available, nations may use 40-foot ISO containers instead. Containers not in use must be returned immediately for re-use. The use of such standard equipment, for example Demountable Rack Off-loading and Pick-up System (DROPS)/Pallet Loading System (PLS) in accordance with STANAG 2413, by all nations and all services will reduce manpower requirements, speed and ease loading as well as transshipment.

c. **Warehousing.** Operations require a huge inventory. Refrigeration and warehousing is required to be purpose built for Class 1[16] stocks and to receive, store and issue the full spectrum of defence materials.

4.3 **Materiel handling and life-cycle support**. Nations should coordinate the requirements for and provision of MHE and operators for loading/unloading of containers, palletized materiel and other loads at deployed locations.

a. **Packaging and shipping**. As the use of TEUs become the predominant means for storage and surface transportation, nations should utilize a modular system of pallets and packaging tailored to the ISO container internal dimensions in order to reduce tie-down and load securing requirements.

b. **Materiel identification**. Whichever mode of transportation is used by SNs, containers, materiel and vehicles must be clearly marked for identification purposes, and where applicable hazardous goods and containers must be annotated with the relevant internationally agreed markings. For identification purposes, nations should use the provisions of STANAG 4329 as the basis for interoperability.

4.4 **Equipment maintenance**. Aircraft repair/rectification and maintenance will remain principally a national responsibility for reasons of flight safety and airworthiness considerations, non-compatibility of Ground Support Equipment (GSE) and test facilities, and uniqueness of spare parts, though Allies should strive to harmonize repair arrangements. Furthermore, Troop Contributing Nations (TCN) are responsible for the maintenance and repair of other nationally owned assets and facilities such as GBAD units. Where possible, working and storage accommodation will be provided under HNS arrangements but, if this is not possible, TCN should be prepared to deploy with portable hangars and suitable storage containers. TCN will also need to provide support facilities such as deployable avionic/engineering workshops and ensure a resupply chain for their own requirements. Any permanent hangars, for aircraft storage and/or rectification, will be identified by the HN for use by the TCN on a shared basis. For nations operating the same aircraft weapon system there is scope for bi-national or multinational agreements for mutual assistance, or cooperative repair through the HN military/commercial facilities. Allies operating such weapon systems should strive to harmonize repair assets and procedures.

a. **Aircraft expedient repair/aircraft battle damage repair**. Today's aircraft are characterized by advanced technologies to enhance them with greater operational capabilities. These characteristics, combined with decreasing fleet sizes and the increasing likelihood of high intensity conflicts with multiple levels (hybrid warfare), lead to a need for an increase of sortie production. Aircraft Expedient Repair (AER)/Aircraft Battle Damage Repair (ABDR) are vital programs to meet the

[16] NATO Classes of Supply can be found in AJP-4, '*Allied Joint Doctrine for Logistics*'.

commanders' operational requirements. Along with procurement of new technology aircraft and weapon systems, AER/ABDR procedures are necessary to keep the force operational during any warfare. Therefore, sufficient AER/ABDR skills need to be retained to support deployments Out Of Area (OOA). TCN should provide the appropriate ranges of piece-part spares, tools and other materiel to enable their own aircraft to be repaired. Pooled AER/ABDR resources at a multinational base would enhance sortie production capabilities for the benefit of the mission. Cooperation with OEMs could improve forces' needs.

b. **Aircraft cross-servicing (ACS)**. This is a program established to provide NATO with the flexibility to deploy, operate, recover and generate Tactical Aircraft for operational missions. The program is further detailed in STANAG 3430. ACS activities enable an aircraft to either continue its mission – Basic Servicing, or to be flown on another or subsequent mission from a Host Base (the base where the weapon system lands) – Mission servicing. The programme starts with the definition of Operational ACS Requirements (OACSR), which are military requirements established by a NATO commander for a designated Host Base, to provide Basic or Mission Cross-Servicing to aircraft not assigned to that Host Base. The ACS capabilities are made available to TCN as a planning tool. Two types of servicing are defined:

(1) **Aircraft basic-servicing**. This (former STAGE C) includes maintenance tasks that can be supervised by aircrew, which includes refueling, marshalling, ground handling, replenishment of fluids and gases, starting facilities and installation and removal of weapons systems safety devices.

(2) **Aircraft mission-servicing**. This includes change of weapons configuration (former STAGE B) and mission planning capabilities (former STAGE A). The concept for this stage is under development.

4.5 Movement and transportation

a. **General.** The unique aspects for AIR Logistics which characterize its differences from that of LAND and MARITIME logistics is the speed at which Air Power can be brought to bear on an adversary, thus requiring Air Logistic support to either be in place or deploy extremely rapidly. Air transport is a flexible and essential element of the transportation system and is an important component to the operational level mobility, allowing especially Land Forces to participate in the deep battle and extend their missions beyond the land line of communications. Likewise, sustainment of this force must be done by air until linkup with ground forces is achieved. Transport or combat aircraft can be on location within hours of being tasked but with the inherent need to be re-armed, refueled and maintained. This requires Air Logistics to have been carefully assessed to ensure that the right people, supplies and equipment are moved to the right place at the right time in the right quantities, in the right condition and by the most cost-effective means to

the satisfaction of the operational commander. In turn, M&T within Air Logistics must be appropriately selected to enable rapid deployment of assets and their support equipment and personnel, and the ability to sustain those assets.

b. **Movement concept**. Although Strategic Deployment (SD) is a national responsibility, NATO has a collective responsibility for M&T support. This responsibility extends from initial M&T planning through SD, RSOM, sustainment, and redeployment phases of the operation. A clear division of responsibilities and authorities is a pre-requisite for a threat-related minimum risk operation with the absolute need for co-operation between the various movement and transportation C2 elements. National Movement Coordination Centers (NMCCs) are the agencies provided by HN for the control and co-ordination of movements on their own territory. In the absence of a HN NMCC the responsibility for NATO must be decided at an early stage of the operation. Normally this responsibility lies within a JLSG if established.

(1) **Strategic lift**. Air transportation is the most costly, and it is generally used for high-priority cargo and/or when movement can be blocked or delayed by surface obstructions. Strategic movement of air forces will be executed via the most feasible Line of Communication(s) (LOCs) in accordance with the Multinational Detailed Deployment Plan (MNDDP). SHAPE will optimize lift capabilities, with consideration for diplomatic clearance, customs, and overflight. AIRCOM and TCN will coordinate with SHAPE to ensure that the most feasible Ports of Debarkation (POD) are available to support its RSOM. To ensure minimized impacts upon other users, including HNs, International Organizations (IO), and Non-Governmental Organizations (NGO) and to avoid increased timelines for operational combat readiness air forces will deploy, whenever possible, directly to their Final Destination (FD) or Deployed Operating Base (DOB). This will require close engagement and coordination through the appropriate TCN, HN, SJLSG AMCC, JLSG if deployed, civil agency mechanisms or any Strategic Flight Coordination Centre that may have been established.

(2) **Operational and tactical lift.** M&T at the operational and tactical level is the responsibility of a designated commander who in turn, will delegate execution to Commander Joint Logistic Support Group (COM JLSG) or equivalent. COM JLSG will assume logistics coordination functions under the Joint Force Commander. JLSG validates intra-theatre movements and transportation requirements based on the requests received from the Components. JLSG approval will be subject to availability of suitable transport assets and the priority of competing requirements for airlift/surface transport. The JLSG will approve the priority based on the theatre commander's overall mission requirements. The respective commander will normally delegate operational control of air assets to the COM JFAC. COM JFAC will ensure planning, integration, allocation, control and task joint air operations based on guidance

and objectives, in accordance with the air apportionment decision and the authority, commander relationship and responsibilities laid down by the JFC.

c. **Transportation - surface movements**. Deployment and Sustainment must meet the Commander's Required Date (CRD) and priority timelines. However, where possible surface transport should be utilized to reduce cost. The use of surface transportation may prove more effective than air for heavy or bulky items and can save scarce air transportation resources for the theatre commander's highest priority movements. It can also be used to prevent lower priority cargo from building up excessive backlogs at airfields and expedite the overall transportation effort. Air transport is generally in short supply and should therefore only be used as an exception or where the timescales dictate. Accordingly, surface means are the preferred method of transportation and should be identified early on in the preparation phase and dispatched, possibly ahead of or in parallel with advanced air elements. In most operations there is potential for a significant quantity of materiel to be transported by surface means. Where politically endorsed, pre-deployment or pre-positioning should be considered.

d. **Customs and diplomatic clearance**. Arrangements must be considered for the cross-border movement of military materiel (See AJP-4.4 NATO Movement and Transportation Doctrine, and AJP-4). TCNs are responsible for the deployment of their forces into theatre, the resupply of their forces and the redeployment or recovery of those forces. Regarding C2, National Movement Co-ordination Centres (NMCCs) are the agencies provided by HNs for the control and coordination of movements on their own territory. In the absence of an HN or LN NMCC the JLSG will assume the responsibility for NATO.

4.6 Services and other related activities

a. **Mortuary services**. Mortuary Management and the mortuary affairs chain is a TCN J1's responsibility and is covered in AJP-4.10, however the understanding and supporting mortuary affairs capability and provision of a temporary mortuary facility and refrigeration units is the Lead nation's logistics consideration. COM JFAC, under the advice of the mortuary affairs office, may authorize temporary interment. These will require dedicated transport assets to avoid the spread of contamination, engineer support to prepare the site, and security personnel.

b. **En-route bases (ERB).** ERBs are airfields identified at strategic locations where assistance with refueling, making weapons and aircraft safe, GSE, handling and parking will be required to support the deployment and re-deployment of units in all areas assuming that no or only limited Air-to-Air Refueling (AAR) support is available. (To be defined: As a minimum, ERBs should be capable of receiving and launching four aircraft within four hours, (24 aircraft/24 hours).) In addition, alternate ERBs will be used when the primary ERB is unserviceable.

c. **Deployable air activation modules (DAAM)** is the name for the group of Capability Codes used to describe the capabilities required by NATO to operate from a Deployed Operating Base (DOB) for air capability in an austere non-benign threat environment. In the NATO Defense Planning Process (NDPP), nations are targeted to provide this capability to NATO based on the DAAM Capability Codes, and at a scale to meet the NATO Level of Ambition.

(1) One complete set of DAAM is assumed to be able to generate the capability to provide one DOB capable of supporting the air rate of effort of an Expeditionary Air Wing (EAW); an EAW can support up to three Expeditionary Air Squadrons of combat air.

(2) For those scenarios where it is envisaged that there is a requirement for DOBs in an austere environment (worst case), a complete set of DAAM would be required for each location. In cases where there is a degree of Host Nation Support (HNS), there would be tailored use of modules to augment existing HN capability in order to increase capacity of effort to the level of a NATO EAW. In all cases of deployed operations, irrespective of the level of HNS, there will be a requirement for an EAW Operations module in order to provide connectivity to NATO Air Command & Control (C2).

d. **Combined air terminal operations (CATO)**. The operation of a fixed or deployable air terminal installation at an airfield with facilities for loading and unloading aircraft and processing traffic (personnel with their baggage, equipment, cargo and mail) and which is shared and/or operated by either a single nation or combined with two or more nations and their allies. Detailed information regarding CATO can be found in STANAG 7213.

e. **Theatre opening capability (TOC)**. The TOC APOD will be delivered by an expeditionary force able to rapidly deploy to an operational theatre in order to enable/operate/sustain Airport operations for a short-term period (of up to 90 days) until the deployment of the Core Elements or until relieved by follow on forces. It would conduct and coordinate the handling of cargo and passengers as part of the wider spectrum of Reception, Staging and Onward Movement (RSOM) which is being developed separately under Smart Defense Project 2.49. The TOC APOD will provide Airport (passenger and cargo air transport handling) services to all inter-theatre strategic airlift and connecting intra-theatre tactical airlift in support of the NATO mission.

f. **Intra theatre airlift system (ITAS)**. An ITAS network will support any commander by effectively moving critical capabilities as required. C2 of ITAS and enforcing the commander’s priorities normally lies within the responsibility of the JLSG and tasking will be coordinated through JFAC ALCC. This coordinated airlift utilizes

close liaison with TCNs and CATO to increase efficiency, enabling a surge in airlift capabilities as required.

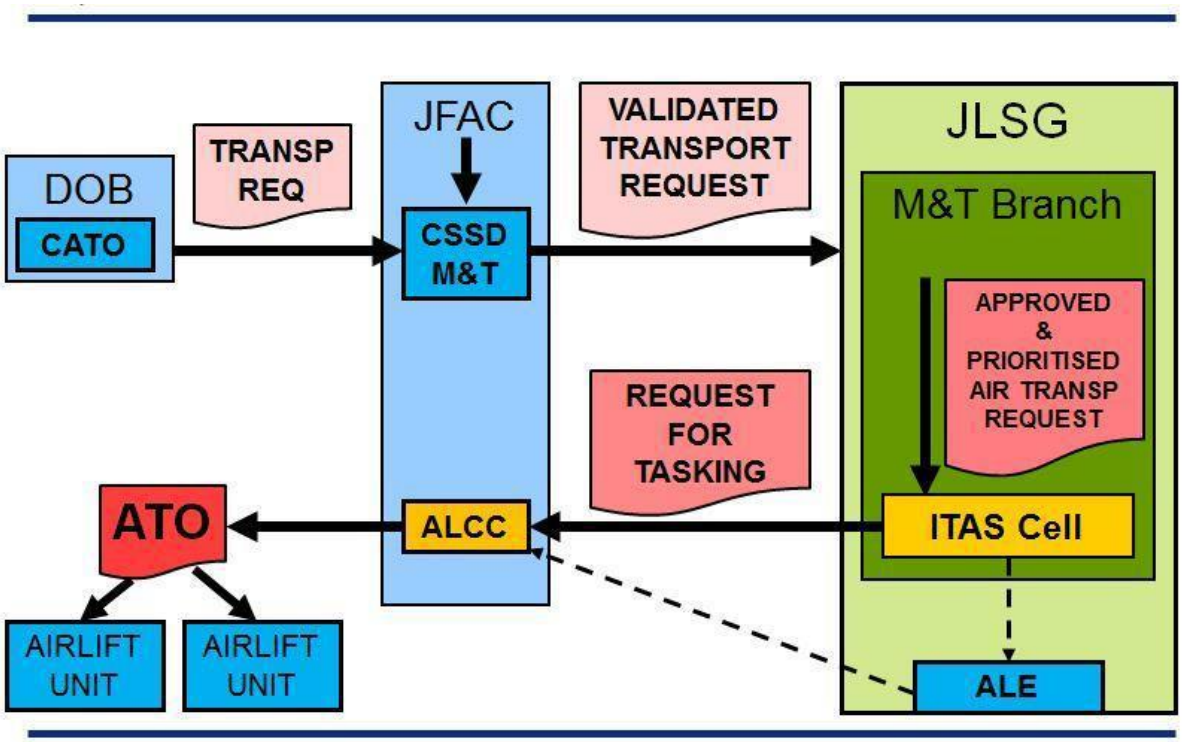

Figure 4.1 Intra-theatre air transport request flow[17]

ITAS will be the primary method of moving passengers and high priority cargo by air. It is intended to be a scheduled service, offering airlift between published airfields. Timings for the schedule will be designed that equipment and personnel arriving on strategic air and sealift can be dispatched to their operational units as quickly as possible. The ITAS should adhere to common user practices as much as possible, deviating from these only by exception. It is not for unit moves, MEDEVAC or Airdrop missions though the same aircraft could be re-tasked to undertake these missions should the need arise.

g. **Contracting, Budget and Finance.**

(1) **General**. In certain operations, particularly those which are Out of Area (OOA), contracting is a major pillar in logistics support concepts and should be based on national requirements determined from prepared specifications. Further details relating to Contractor Support to Operations (CSO) are contained in AJP-4. NATO will operate a consolidating function for contracts

[17] Source: Aircom/A4/M&T.

to reduce the likelihood of price inflation as individual nations bid for common items. Notwithstanding the aggregation function performed by NATO contracting officers, TCN will remain responsible for all services arranged through NATO contracts.

(2) **Budget and Finance**. Prior to any NATO operation, the budget and funding eligibility, policy and responsibilities must be approved by Contributing Nations (CN). It is essential, therefore, that finance experts are involved from the very inception of an operation and throughout the planning stages. Furthermore, to facilitate reimbursement and assign financial liabilities to nations and units incurring costs, participating units must be clearly identified. Most support requirements will be met from the procedures set out in STANAGs 2034 and 3113, although they are primarily geared to emergency assistance and the support of NATO forces visiting another NATO nation. Accordingly, provisions for financing could be based on national modes of funding, with the ultimate objective of ensuring that NATO and national funding concepts supplement each other. Under the STANAGs, some services will be provided free-of-charge by the HN, some on repayment and others on pre-payment. In general, facilities provided from military sources will be provided free-of-charge. Alternatively, international account paying systems, which automatically track and render accounts, should be considered for major commodities. NATO Budget and financial matters will most probably be centered within the operation of a JTF HQ and will only be considered at CC level. The SN will bear the majority of costs under the principle that costs lie where they fall. Only those items that are clearly beyond the SN's requirements will be considered for eligibility and then every expense will be reviewed under the optics of Military Minimum requirement (MMR). Once again early engagement of the financial staff will ensure emerging NATO financial policies, principles and procedures are incorporated into operational planning.

(3) **Financial Provision**. There will be many instances where SNs will need to make local purchases from HN commercial sources to meet operational imperatives. SNs should provide their forces with the necessary cash funding, letters of credit or credit card facilities, prior to deployment, to meet this requirement. Specific financial arrangements for services or equipment provided must be made clear and agreed in Technical Arrangements (TAs) or Joint Implementation Arrangements (JIAs). In most instances, financial reimbursement of fuel and POL services will be in accordance with STANAG 3113, through the respective national offices listed therein. Some HNs will prefer replacement to be in kind; this is particularly pertinent to aviation fuel.

h. **Infrastructure**

(1) **General**. In NATO terminology, the word was adopted as a generic term to denote fixed installations, which are necessary for the effective deployment and operations of modern armed forces. In this modern context, “infrastructure” includes airfields, port facilities, communication and information systems, military headquarters, fuel storage and distribution systems, radar warning and navigational aid stations, and many other facilities.

(2) **NATO military criteria & standards**. C&S are developed for certain NATO infrastructure categories. Some are available only in a draft version (e.g. Peace Headquarter C&S) while others have been “approved”, like the C&S for Airfields. Application of C&S ensure that facilities constructed for NATO use, although designed and built according to the various host nations national codes and standards, will continue to meet common NATO standards; thus facilities will favour interoperability and multi-national operations.

(3) **NATO Security Investment Program (NSIP).** This program is intended to support the implementation of NATO military capabilities. Normally, the life cycle of an NSIP project begins after the approval of the Capability Package (CP). The approval of a CP confirms that NATO requires the capability, and that the necessary resources have been identified to implement the projects proposed in the CP. After CP approval, HNs develop technical solutions for the NSIP-funded projects in the CP, prepare cost estimates, and submit authorisation requests to the NOR and the SCs. The process required to develop and submit CP are contained in BiSC Directive 085-001. Only those critical items needed to enhance an airbase specifically for TCNs and which are clearly over and above the needs of a HN, can be considered valid for NSIP funding.

(4) **Airfield damage repair**. It is unrealistic to expect a SN to provide all the Airfield Damage Repair (ADR) equipment required to deploy. The HN should provide minimum levels of pre-stocked aggregates and other equipment such as cranes, bulldozers and trucks. This is particularly significant for those NATO forces at a high state of readiness. Further details are contained in STANAG 2929.

(5) **Minimum essential facilities.** The Minimum Essential Facilities (MEF) to support deployed operations include details on runway lengths, Load Classification Number (LCN), aircraft parking, aviation fuel storage on-base, weapon storage, basic communications suite and mains facilities.

(6) **Essential operating facilities**. Essential Operating Facilities (EOFs) enhance the operational capability and include operational facilities such as Wing Operations Centres/Sector Operations Centres (WOCs/SOCs), standby power, engineering/technical accommodation, and Liquid Oxygen (LOX) and similar facilities.

(7) **Local works**. Civil engineering resources should be available at deployment locations to enable minor groundwork to be carried out. Where resources are not available, SNs should make provision to deploy engineering support. Financial arrangements and restoration for services should be agreed between nations and included in the appropriate TA. Additionally, any damages sustained should be dealt with under the provisions of the NATO Status of Forces Agreement (SOFA), where applicable.

4.7 Medical Support

a. **General.** The ultimate purpose of medical support is to support the troops in performing their tasks by preserving and restoring their health and fighting strength. Health in principle is not only the absence of injury or disease but includes in the widest sense physical and mental well-being. Thus, in an operational context, health is the ability to carry out duties unimpeded by physical or psychological problems. Medical support is a major contributor to the fighting power of the force by prevention of disease, rapid evacuation and effective treatment of the patients, therefore Medical support must strive to provide the best possible standard of care to the force it supports. The environment in which medical support to NATO operations has to be provided, however, differs significantly from those within the national home base. Thus, whilst medical support will strive to fulfill the laws, rules and requirements set out in national systems or by international organizations, under exceptional circumstances the level of medical support may have to be adapted. The coordination of medical logistic supply is a shared medical and logistics responsibility. Medical personnel are responsible for the identification of the requirement, the specification and quantity of medical materiel and pharmaceuticals and will advise on prioritization of delivery. Logistic personnel are responsible for coordinating the management of medical materiel and pharmaceuticals within the overall logistic plan. Medical and logistic personnel will have shared responsibility for tracking medical materiel and pharmaceuticals from sourcing through to final disposition.

b. **Components of deployed health care**

(1) **Medical capabilities.** Medical support to NATO operations is provided by a variety of response capabilities. These response capabilities comprise all necessary medical resources and assets to conduct medical treatment, evacuation, re-supply, and other functions essential to the maintenance of the health of the force at certain, defined levels. Capability describes what

kind of medical treatment a specific Medical Treatment Facility (MTF) can provide, increasing from first response capability (Role 1) to definitive hospital response capability (Role 4). A description of the Roles of Medical Care can be found in AJP-4.10 (STANAG 2228).

(2) **Medical evacuation**. MEDEVAC is the movement of patients from the point of injury under medical supervision to any MTFs as an integral part of the continuum of care, to provide continuous medical support during the evacuation. Whenever possible the MEDEVAC system shall ensure that each patient is brought to an MTF that is capable to cope with his/her illness or injury. The evacuation plan as an integral part of the medical footprint (the location and capability of assets) will be closely related to the casualty estimate rate (location, number and type of casualties) and theatre holding policy (how long casualties will be held in theatre before evacuation to appropriate medical facility). The robustness of the evacuation plan is dependent on the quantity and capability of the treatment and evacuation assets available.

(3) **Aeromedical evacuation (AE)**. AE is a subcomponent of MEDEVAC focusing on the movement of patients under medical supervision by air transport to and between medical treatment facilities. The Air Component will play a key role in the coordination of all FW AE and AE with allocated RW. As the manager of the Joint airspace on behalf of the JTF Commander, all AE movement involving FW platforms must be managed by ALCC together with Medical. Within the Air Component this will be done through the AECC with ALCC Aeromed.

(4) **Casualty staging unit (CSU)**. As required the Air Component can be tasked to establish CSUs in addition to MTFs. These are medical units co-located to the MTF on DOBs and/or APODs and are tasked with caring for in-transit patients under medical personnel supervision while the patient is awaiting onward MEDEVAC movement.

c. **Medical planning and medical command and control**

(1) **MEDAD**. The MEDAD is responsible for providing medical advice to commanders, ensuring that the commander and the commander's staff are properly aware of the health and medical implications of their actions as well as any force health issues connected to the operation. Direct access of MEDAD to their commander and other key command staff elements is a prerequisite for ensuring effective medical support. Usually the Medical Advisor to the joint force commander will be appointed as the Medical Director of that particular Joint Force.

(2) **PECC**. The PECC will serve as the functional organizational and communication node between MTFs and MEDEVAC assets coordinating all patient movement within the operational theatre, including Air Component AOR. It is also responsible for patient tracking during their MEDEVAC and the maintenance of the MTF capability database. It must be operational 24/7. In the event of a MASCAL situation the PECC will implement the MEDAD's decisions and act as the interface between the MEDAD and the medical units involved in the MASCAL.

(3) **AECC.** The AECC operates in conjunction with the ALCC and in close cooperation with the PECC. It coordinates overall medical requirements with airlift capability. It also assigns medical missions to the appropriate aeromedical evacuation elements in the system and monitors patient movement activities.

d. **Medical logistics**. Medical logistics is the process of procurement, storage, movement, distribution, maintenance and disposition of medical materiel and pharmaceuticals, including blood, blood components and medical gases, to provide effective medical support and the application of this process in planning and implementation. The medical logistics system needs to ensure the sustainability of the medical support system under all operational conditions. National responsibility over planning and executing an effective medical logistics system remains the guiding principle for operational support; however, the NATO Commander may exercise their authority to ensure best possible coordination of national assets and activities in this area. The unique characteristics of medical materiel set it apart from other commodities, for the reasons of protected status, regulatory aspects, handling requirements and importance.

CHAPTER 5 – AIR LOGISTIC PLANNING

5.1 **Introduction.** Logistic planning, including all movement and transportation planning, is integral to defense planning and must be consistent with force and operational planning. National and NATO logistic planning must be harmonized during the planning process, aligned using the Allied Command Ops'(ACO) Comprehensive Ops Planning Directive (COPD). For Article 5 ops, plans will be generally of the detailed, contingency variety, whereas for OOA or CRO/PSO ops the diversity of possible missions precludes detailed planning and therefore the logistics support of multinational air forces is likely to be generic or ad hoc which can ultimately be tailored to fit any operational situation.

5.2 **Planning procedures and instructions**. Logistic planning involves both the civil and military authorities of NATO, and encompasses materiel, personnel, infrastructure and service support. Countries retain responsibility for the support of the forces which they commit to NATO, but the SCs define the logistics requirements for the support of their missions and plans and are responsible for ensuring that national plans are coordinated. To provide a standardized logistics planning tool, an ACO Functional Planning Guidance Logistics (FPG-LOG) serves as an extension of the ACO Comprehensive Operations Planning Directive (COPD). It identifies essential information exchanges with other members Strategic Operations Planning Group and the Joint Operations Planning Groups as well as functional planners in other HQs. The FPG-LOG will guide a planner in the development of functional staff estimates and concepts as well as the drafting of functional annexes to the plan.

5.3 **Planning process.** The joint force mission will lead to the development of the air concept of operations, the air operations plan and the operations order. Air logistic planners will assist in all aspects of the development of these planning elements including bed-down plans for participating air forces. In addition, air logistic planners will ensure that all air logistics requirements identified in the development of the air plan are properly addressed at the Force Logistic Planning Conferences (see AJP-4). At an early stage of the planning process, airfield surveys will be required to determine the resources, facilities and levels of support that will be available to inform these conferences. Logistic support planning must be carried out to the same level of detail as the generic, contingency and operation plans which are to be supported. Combat service support elements must be identified and detailed to ensure the presence of a comprehensive logistic support structure. The planning process will concentrate on the various phases of the mission and take into account a number of general planning factors.

a. **The support estimate and its planning factors**. The support-estimate process is used to verify the viability of proposed COAs and provides the basis of the support concepts for all COAs under consideration. The support estimate's development will be a cooperative endeavour, conducted by the support staff and

fully integrated with the planning activities conducted by the operations staff. The depth of detail and accuracy of analysis will often increase as the planning process unfolds. The support estimate may be limited to a few staff checks, or it may be a more complex process of melding several individual support estimates.

b. The support estimate's three key activities are:

(1) **Analyse mission**. Mission analysis must consider the end state, assigned and implied tasks, constraints and restraints as well as the intentions of the higher commander.

(2) **Evaluate factors**. The evaluation of factors must be exhaustive, and each deduction thoroughly analysed for both subsequent deductions and the impact on the aim. This analysis leads to the development of different COAs.

(3) **Develop and compare COAs**. The supportability of each COA is confirmed, and the support concept and plan are developed once a COA is selected by the commander at the end of the estimate process.

c. Military planners have identified five key factors that generally apply when planning the support requirements for a military operation. These factors are destination, demand, distance, duration and risk. Properly assessed, they enable planners to determine the number of personnel, quantity of materiel, type of infrastructure and variety of services required to achieve assigned objectives. These factors apply equally to operations conducted at home or abroad and for increases in operational tempo and/or severe environmental conditions. They should be formally addressed in major planning activities and also taken into account even in minor planning activities.

5.4 **Destination**. The destination where operations will be conducted determines the environment in which support activities will be carried out. It is essential that planners have knowledge of the destination and surrounding area, including available infrastructure; the level of support to be provided by the host nation and coalition partners; and climate and terrain. Regardless of whether the destination is a well-established military facility or an austere base where facilities and support services are limited, there are always unknowns, and if possible, a reconnaissance should occur before detailed planning begins. From this, the length and difficulty in maintaining the lines of communications (LOC) can be determined. Some of the critical variables that must be examined as part of destination include:

a. **Infrastructure**. Infrastructure encompasses many different types of facilities and capabilities such as naval ports and airports. Critical factors for air operations include the runways, ramps, system for storing and distributing aviation fuel, explosive ordnance disposal (EOD) and ammunition-storage areas, water sources as well as materiel-staging and storage areas.

b. **Host-nation support (HNS) and coalition partners**. For international operations, HNS and the support that can be provided by coalition partners must be taken into account. The range and reliability of HNS available in terms of personnel, equipment, services and resources may allow a reduction in the support footprint.

c. **Climate and terrain**. Climate and physical geographical characteristics of the destination will likely impact the performance and safety of personnel and the functioning of equipment. These factors may affect resource consumption rates, aircraft operations and the support footprint.

d. **Environment**. The environment needs to be taken into account in determining the type and quantity of spares required to support the operation. For example, operating aircraft in dry and dusty environments for an extended period of time can result in accelerated wear on many components. Also, it may be necessary to rotate aircraft more frequently if certain maintenance facilities are not available at the deployed destination.

5.5 **Demand.** Demand is the quantity of materiel (or commodity) needed to support the operation. Typically, the demand for supplies or commodities is divided into these categories:

a. **Surge demand** is normally dictated by the timeline and operational tempo of the mission. As it is usually difficult to predict, surge demand requires rapid reaction and maximum flexibility to ensure effective maintenance of air power.

b. **Steady-state demand** reflects continuous usage of commodities such as rations and potable water, which can be accurately predicted.

c. **Cyclical demand** represents changes in consumption rates due to changing weather or operational posture. Fuel and ammunition are examples of cyclical-demand commodities.

d. **Predictability**. Although the preventive-maintenance concept applied to aircraft makes the demand for aircraft parts somewhat predictable, significant failure rates associated with older aircraft and the requirement to operate in challenging environments can also lead to surge demand.

e. **Scale**. For commodities, demand is influenced by destination, distance, duration and the type of air platform being employed. The operational tempo may fluctuate, thus, the demand for personnel, materiel, infrastructure and services can vary significantly from operation to operation. Appropriate scaling is therefore essential.

5.6 **Distance**. The distance to and within the theatre of operations will not only determine the length and capacity of the LOC but also dictate transit times and the need to establish an intermediate staging base (ISB)[18]. For deployed operations, an ISB located close to the theatre of operations may be required to ensure an efficient flow of resources to and from the Main Operating Base (MOB). This, in turn, will affect the size and structure of the sustainment pipeline. Distance may vary as air operations develop; thus, there must be sufficient sustainment resources available to readjust and extend the LOC to maintain freedom of movement. Distance could also be a factor in deciding whether to forward base other resources such as test equipment and specialized tools. Although portable automated test equipment that can be forward based may be available for a certain aircraft type, other considerations such as the capability of the main operating base (DOB) to support local operations also have to be taken into account. Finally, it must be noted that there are several destination, demand and distance considerations when selecting between air, land and sea transportation:

a. **Air transportation** is the most costly, and it is generally used for high-priority cargo and/or when movement can be blocked or delayed by surface obstructions.

b. **Land transportation** is the main mode of transport used domestically in support of Main Operating Bases (MOBs). In a deployed scenario, land transport is generally used from the airport of debarkation (APOD)/seaport of debarkation (SPOD) to the DOB.

c. **Sea transportation** is of lower cost when conducting a strategic move and is primarily used for lower-priority cargo.

5.7 **Duration.** The duration of any military operation, along with the variety and demand for supplies required to support it, will determine the overall volume of materiel required, the corresponding transportation requirements and, consequently, the overall extent of the sustainment task. Although a commander may give guidance concerning duration, its unpredictability places an additional demand on sustainment practitioners. Duration also determines the need to rotate or replace personnel and equipment. If the operation is of short duration, at a well-established destination where local support is reliable and easily available, then it may require minimal support. Conversely, if the operation is likely to extend over several months or years, in a hostile and austere destination, the requirement for sustainment will likely include a wide range of services, necessitating substantial materiel injects that result in a larger footprint.

a. **Long-duration** operations also have a significant impact on the MOB. Although a number of aircraft with supporting elements may be deployed for several months, activities at home must continue. The tempo of MOB activities may be reduced, but flying operations to support assigned objectives, as well as force generation,

[18] A terminal located along the strategic lines of communication that temporarily provides support to forces in transit. NATO DTB record 23620.

must continue. Consequently, the Nations' Air Forces must maintain a suitable sustainment capability to support such operations. Major activities such as aircraft-maintenance schedules (e.g., for periodic inspections) may have to be adjusted to ensure that aircraft with maximum hours and the right mission kits are available for rotation into theatre. Lengthy deployments may also require backfilling by Reservists, casual employees and contractors for deployed personnel.

5.8 **Risk**. The risks to sustainment include any factor that compromises the ability to provide the required support to achieve the assigned objectives; therefore, the level of risk to sustainment operations must be assessed so that appropriate countermeasures can be put in place and so that requirements such as infrastructure-repair capabilities and medical treatment facilities can be anticipated. If the enemy is capable of severing the LOC or destroying forward stocks, the commander will have to evaluate whether additional force protection will be necessary. Hostile activities can impede movement, destroy logistic stockpiles as well as close airports and seaports or affect their throughput capabilities.

a. **Aircraft fragility**. The air platform itself imposes a risk to sustainment due to its inherent fragility and support dependency. Aircraft are more easily damaged than other major weapon systems such as ships and tanks, and the likelihood of loss of life due to seemingly minor sustainment problems is also greater (e.g., contaminated fuel is not likely to cause the loss of a land vehicle or ship but could readily cause an aircraft to crash). The storage and handling of complex and costly weapons, especially in a deployed context, can add additional risk to the operation. Air operations are frequently tied to fixed installations that provide runways as well as maintenance and fuel facilities. This limited range of operating locations, thus, increases risks to air operations. To minimize this risk to the greatest extent practical, some Nation's Department of National Defence (DND) Airworthiness Program include sophisticated risk-management processes so that commanders can make well-advised decisions concerning operational risk.

b. **Components of sustainment**. When completing the support estimate, each of the four components of sustainment—personnel, materiel, infrastructure and services—has a series of planning factors that must be considered. For each planning factor the following are considered: requirements, availabilities, priorities, restrictions, deductions, courses open and plan. In turn, the components provide a convenient way of grouping the results of individual analysis into a concept of operations or plan. Each planning factor might be examined as a single entity but, more likely, will comprise several subordinate analyses. Each analysis must reflect the support requirements of the parent COA. Where multiple (or very different) COAs are under consideration, it may be necessary to conduct separate analyses by COA. In a complex operation, it may be necessary to examine each planning factor by operational phase.

c. **Deductions**. Though far from exhaustive, Table 5-1 provides a suggested list of planning factors and possible deductions for each component of sustainment. These planning factors should be considered in combination with the key factors of destination, demand, distance, duration and risk to ensure a thorough estimate is completed.

Components of Sustainment	Planning Factors	Deductions
Personnel	• Environmental threats (disease, toxins, etc.) • Personnel administration services • Mortuary affairs • Expected intensity of operations • Duration of mission • Health services support (HSS)/medical	• Current personnel status and replacement plans • Casualty estimate and effect on combat readiness • Personnel replacement priorities and controls • Reconstitution plan and deficiencies • Morale issues • Enemy prisoner of war • Refugees • Evacuees
Materiel	• Lines of communication • Theatre-level stocks • Evaluate classes of supply • Sustainment/ replenishment cycle • Procurement authorities/ policies • Enemy threat	• Availability by class of supply, including reserves • Distribution methods • Mission configured loads—where and when • Emergency-resupply procedures • Reporting requirements • Reconstitution • Support from higher formation • Fuel: current status, bulk storage requirements, bulk refuelling capability, distribution plan, allocations and risk • Ammunition: requirements vs availabilities, ammunition storage sites, restrictions and risk • Rations and water: hard or fresh rations, crew-served meals, bulk water delivery,

		bottled water and water points
Infrastructure	• Infrastructure available • Telecommunications networks and architecture • Utilities • Runways	• temporary or permanent facilities • requirement versus availability • power generation and electrical distribution • water and sewage system • availability and serviceability
Services	• Maintenance • Transportation • Laundry/ bath/ decontamination • Disposal of grey/ black waste • Legal • Chaplain	• Repair-parts availability • Transport requirements • Movement control • Route use and priority traffic • Traffic control • Trailer transfer points • Alternate modes available • Security of location

Table 5.1 Planning factors

d. **Planning staff** must be oriented towards the requirements of all new or revised operations. Support planning for air operations must be an integral part of the overall planning process, starting by identifying and analysing the nature of the operation and scoping out, in broad terms, the support necessary to achieve the stated objectives. Staff representatives for each functional area or discipline will then develop a comprehensive requirements "inventory," consisting of the personnel, materiel, infrastructure and services needed to achieve each possible COA. Depending on the degree of accuracy required for the inventory and other limiting factors such as time constraints, sophisticated estimating techniques and modeling may be used.

e. **Planners** must estimate the quantity of materiel required and determine not only its final destination but also its delivery time. This information will be of use in planning for infrastructure. There should also be clear traceability for each support requirement to the needs and objectives of the air operation—if it is not needed to support the operation, it should not be there. The services needed and their delivery frequency will be primary factors in determining the number of support personnel required. Once the overall support requirements have been determined and a COA has been selected, the specialist staffs will develop means of satisfying them.

5.9 **Planning factors**. The Military Committee (MC) NATO's Operational Planning (MC 0133) takes account of a wide spectrum of factors which influence a strategic level operation plan (See Table 5.1).

5.10 **Logistic planning conferences**. Logistic planning conferences are a principal tool by which logistics support is coordinated. The type of planning, for example, Contingency Operations Plan (COP) development or ad hoc, being undertaken will determine the exact nature of the logistic conferences. The series of conferences as detailed in AJP-4 is considered sufficient to address the requirements for the participation of nations and air forces in the planning process for both Article 5 and CRO/PSO operations. The Force Logistic Planning Conferences will need to be supplemented by specialist air discussions with participating nations.

5.11 **Host-nation support (HNS)**. Whenever NATO forces are based in or deployed to another nation, they are likely to require some support from the HN. This will be as per guidance from AJP-4.5. If available, HNS can provide logistic support in accordance with negotiated arrangements between NATO and/or TCNs and the HN Government. Knowledge and experience in dealing with contracts and contractors will help to balance the deployed logistic requirement with contract provision of equipment, manpower and services.

5.12 **Bed-down**. Optimal bed-down planning is crucial to the effectiveness of JFAC Units' operational employment and logistics support. Given the primacy of operational requirements, Air OPS Planners are responsible to determine the appropriate placement of Joint Force Air Component capabilities. To support this decision, Air LOG planners will identify suitable airfields within or close to the Joint Force Air Component Command AOR and stress their support limitations.

a. Bed-down is the expression of the COM JFAC operational requirement to place air assets and their support within the Theatre of Operations. Bed-down is developed for each phase of an operation and is defined in the relevant Concept of Operations, Chapter 4. Execution, Forces and Resources, (1) Bed-down Plan.

b. Bed-down Plans are an Advanced Operational Planning Group product, determined by Operations (Ops). LOG syndicate informs the decision by timely identification of support limitations. The Ops decision on the bed-down Plan should be informed by all Logistics functional areas (Air ENG – Infrastructure and Maintenance, Sustainment, M&T). Once the bed-down plan is formalized in the JOPG Combined Joint Statement of Requirements (CJSOR) (Air Force Element), the JFAC CSSD takes it over for subsequent deployment and support planning and maintenance throughout the Operation.

c. While the Operational Planning Process is executed in the Tool for Operations Planning Force Activation and Simulation (TOPFAS), the OPS syndicate finalizes the Air portion of the CJSOR. During this process, the LOG Syndicate can export the draft CJSOR for deployment timeline simulation to LOGFAS. Once the CJSOR is finalized with final destination (FD) and Commander's Required Date, it is exported to LOGFAS (LOGFS) as the ADL for further deployment Planning.

d. To allow correct and timely bed-down maintenance, an appropriate Reports & Returns system with JFACC CSSD included in the operational Information Flow is to be developed.

e. Changes to bed-down are determined by JFAC.

5.13 **Reception, staging, onward movement (RSOM) and integration (RSOM&I)**

a. **General**. RSOM activities are part of the RSOMI process, which will normally be planned and coordinated by the CJTFHQ staff. The support staff will be responsible for the RSOM aspects, while the operations staff will be concerned with the CJTF's integration. The Multinational Integrated Logistics Unit (MILU) will execute RSOM activities as directed by the CJTFHQ, and will support the operations-led integration function as required.

b. **Process**. The RSOM process includes three subordinate activities, namely reception, staging, and onward movement. This is depicted at Figure 4-1, which also shows the operations-driven activity of integration.

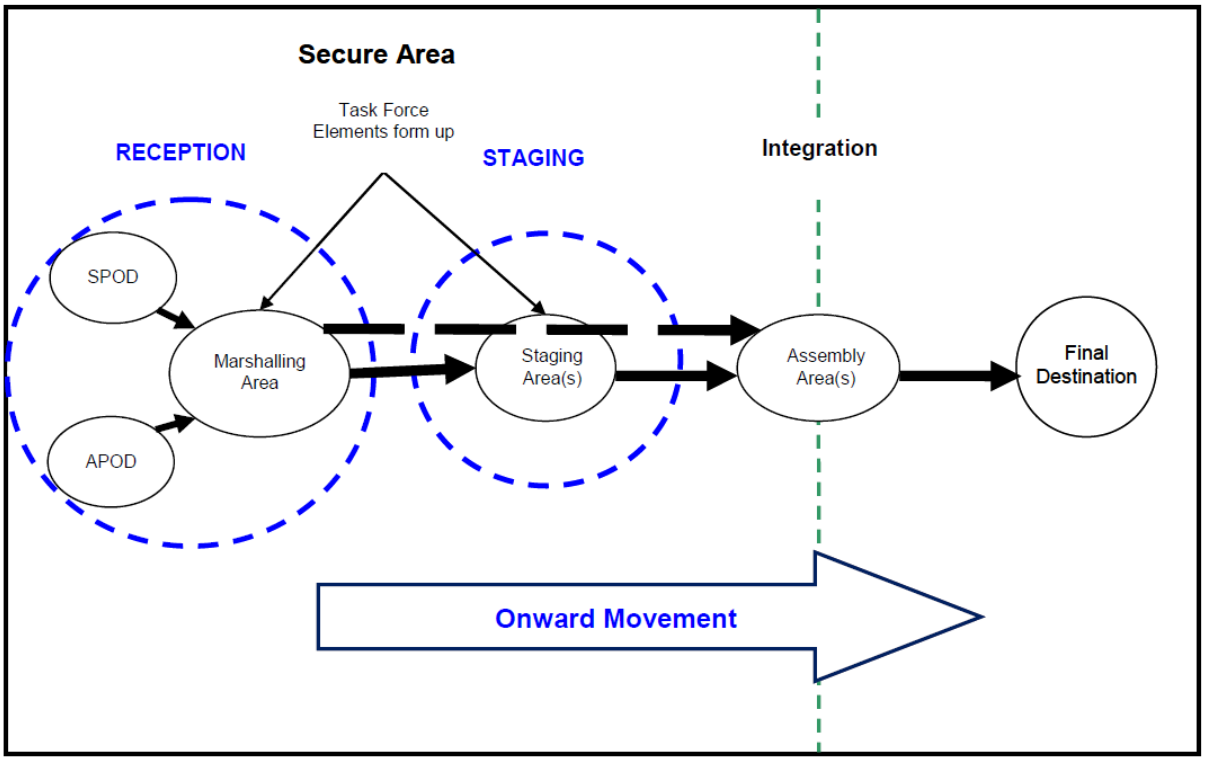

Figure 5.1 The RSOM process.

c. **Principles.** The support staff must consider the following four principles when planning and conducting RSOM:

(1) **Unity of command.** The competing requirements of units require central coordination and direction over the RSOM process. The CJTFHQ must be given requisite authority over this process.

(2) **Flexibility.** Flexibility is the key to successful RSOM. The order of entry of forces or the priority of effort can change suddenly due to changes in the operational/tactical situation. The RSOM process must be able to adjust quickly to changing requirements.

(3) **Coordination.** A communication and liaison network must be established to coordinate the activities of RSOM. This is particularly important for multinational operations, wherein the use of resources and facilities by TCNs conducting RSOM concurrently should be carefully managed.

(4) **Integration**. RSOM must be included in the planning process from the outset.

d. **Enablers.** Enablers for effective RSOM include:

(1) Interoperable and automated information systems.

(2) Visibility over personnel and materiel. The maintenance of information on the location, status, and predicted movement of each unit's command element, personnel, unit-related supplies, and equipment while in transit to its specified employment area will help the CJTF commander to predict incremental increases in combat power. The CJTF elements must be tracked until they have completed the onward movement and integration processes.

(3) An effective joint theatre distribution system.

(4) Contingency contracting for locally available supplies and services.

(5) HNS. The composition of support elements needed to conduct RSOM operations will depend on the type, quality, and extent of host nation infrastructure and the degree of access granted for CJTF use.

e. **Planning RSOM.** RSOM planning must begin early in the planning stage to avoid duplication of effort and to ensure the effective movement of personnel and materiel into the theatre of operations. When opening a new theatre, the resources needed to manage and conduct RSOM must be included early in the flow. The CJTFHQ and air logistics reconnaissance parties must assess a number of issues before the RSOM process can commence. These include:

(1) The prevailing tactical situation;

(2) The need for coordination and cooperation with other national contingents;

(3) The location, capacity, and suitability of available PODs;

(4) The suitability of real estate and the availability of support infrastructure, particularly the capacity, diversity, and accessibility of the local transportation network, airfield suitability and limitations, and general resources;

(5) Access to support services such as electrical power, compatible equipment, communications, fuel, water, food and waste disposal, and bed-down locations; and

(6) The availability of HNS, in-country resources, and deployed contractors.

f. **Reception**. Reception refers to the activities associated with receiving, offloading, marshaling, recording, and transporting TF personnel, equipment, and materiel from strategic or operational lift through sea and air PODs and railheads.

The RSOM process as a whole is affected by activities such as the building of camps, medical facilities, and logistic compounds prior to the main body's arrival. In particular, the circumstances at the POD will clearly influence the reception activities. The use of a secure area in the theatre will enable a more rapid buildup of combat power than one launched from an ISB or OS Hub. Key aspects of reception activities are:

(1) The activation of PODs, depending on the operational requirement, for air, sea, and rail. The number and type of PODs will complicate reception activities; therefore, the synchronization of activities at each POD is essential. Reception starts at the point that deploying forces and materiel arrive at a POD.

(2) The selection and operation of marshaling areas. In many instances, TF personnel, vehicles, and equipment will be moved from the PODs to a nearby marshaling area in preparation for onward movement.

(3) Reception process concludes with the movement of forces to the staging area.

g. **Reception considerations**. The following should be considered when conducting reception activities:

(1) **Coordination**. The theatre support structure needs to be carefully managed to ensure that it is synchronized with the scheduled arrival of deploying forces. Factors to be considered include the requirements of the theatre distribution system (i.e. movement control, transport mode operations, materiel management, and service support), the availability of HNS contractors and support organizations, and the availability of staging and/or assembly areas.

(2) **Conduct of POD operations**. Reception centers receive, account, and provide temporary logistic support and coordinate follow-on movement for deployment and redeployment of personnel and materiel. This includes receiving and off-loading personnel and cargo and updating units on their status, managing the movement process, conducting the move to staging areas and conducting movement-control operations. Movement Control Detachments are normally tasked to assist the TF's strategic movement through the POD.

h. **Staging**. Staging refers to the assembling, temporarily holding, and organizing of arriving personnel and materiel into their units and preparing them for onward movement and tactical operations. The major objective of staging is to assemble and prepare the force to perform its mission. Staging should be conducted in a permissive environment.

Staging areas must enable the COM JTF to concentrate forces entering the employment area. Their location will be influenced by a number of factors, including: the location of employment areas; geographic constraints; availability of organic, coalition, and host-nation support; transportation infrastructure; distance to the ports; and force-protection requirements. The size of the staging area will be largely dependent on the anticipated flow of forces to and from the theatre of operations, the COM JTF's intent, space available, and the threat level.

The amount and type of support required at staging areas will depend on the situation. A deploying unit's need for assistance from a staging area will be influenced by the operating environment, the length of time they spend in the staging area, and the ability of the unit to use their own resources to provide for some of their requirements. Support to staging operations may include: personnel services; accommodation; feeding; laundry and bath; petrol, oils and lubricants (POL); ammunition holding areas; material handling equipment; transportation; and movement control.

The COM JTF may declare staging to be complete once the CJTFHQ operations staff has confirmed that TF elements are operationally ready to deploy into the operational deployment area. Under ideal conditions, this means that the TF elements have been fully briefed and orientated to their respective roles, missions, and tasks; fully equipped, trained, and acclimatized.

i. **Onward movement.** Onward movement refers to the movement of TF elements and accompanying materiel from theatre staging areas to tactical assembly areas, employment areas, or other theatre destinations. This activity requires a balanced, integrated system of node operations, movement control, mode operations, and cargo transfer operations. As with all RSOI activities, onward movement is prioritized according to the TF commander's needs.

Onward movement is affected by the capacity of the transportation system. This is especially true in multinational operations where several nations will be seeking to utilize the available road, rail, inland or coastal waterway, and/or air transport resources. Other factors influencing the conduct of onward movement include road conditions, geography, and climate.

Onward movement is normally considered to be complete when the JTF's FEs have moved to their final destination.

j. **Integration**. Integration refers to the synchronized transfer of operationally ready personnel and units into the overall force in accordance with the operational plan. It is designed to orient personnel and units to the employment area and includes further acclimatization, training, and situational awareness. Integration may be conducted outside the area of operation or at any stage of the RSOMI process (e.g. as part of the reception process or at a staging area).

The emphasis during integration is on command and control of personnel and materiel as they enter the area of operations and prepare for integration. The JLSG will support integration activities as directed by the JTFHQ. Integration is complete when the receiving commander establishes command and control over the arriving formation/unit and it is capable of performing its assigned mission effectively.

LEXICON

PART I – ACRONYMS AND ABBREVIATIONS

The lexicon contains acronyms/abbreviations and terms/definitions relevant to Allied Logistic Publication-4.3(C) and is not meant to be exhaustive. Definitive and more comprehensive list of abbreviations is in NATOTerm.

AAR	Air-to-air refuelling
ABDR	Aircraft battle damage repair
ACC	Air component command
ACCS	Air command and control systems
ACO	Allied command operations
ACS	Aircraft cross-servicing
ADL	Allied disposition list
ADR	Airfield damage repair
AE	Aeromedical evacuation
AECC	Aeromedical evacuation coordination cell
AER	Aircraft expedient repair
AIRCOM	Air Command (NATO)
AJP	Allied joint publication
ALCC	Air lift coordination cell
ALE	Air liaison element
AMCC	Allied Movement Coordination Centre
AOD	Air operations directive
AOM	Alliance operations and missions
AOO	Area of operations
AOR	Area of responsibility
APOD	Airport of Debarkation
AT	Air transport
ATO	Air tasking order
C2	Command and control
CATO	Combined air terminal operations
CC	Component command
CE	Crisis establishment
CIS	Communication & information systems
CJSOR	Combined joint statement of requirements
CJTF	Combined joint task force
COA	Course of action
COD	Combat operations division
COM JTF	Commander joint task force
CP	Capability package
CPD	Combat plans division

COP	Contingency operations plan
COPD	Comprehensive operations planning directive
CRD	Commander's required date
CRO	Crisis response operation
CSSD	Combat service support division
CSO	Contractor support to operations
CSU	Casualty staging unit
CUR	Crisis (response operation) urgent requirement
DAAM	Deployable air activation modules
DCOS	Deputy chief of staff
DIRLAUTH	Direct liaison authority
DOB	Deployed operating base
DROPS	Demountable rack off-loading and pick-up system
DSACEUR	Deputy supreme allied commander europe
EAW	Expeditionary air wing
EOD	Explosive ordnance disposal
EOF	Essential operating facilities
ERB	En-route base
EU	European union
FD	Final destination
FE	Force element
FN	Framework nation
FOB	Forward operating base
FOC	Free of charge/Full operating capacity
FOL	Forward operating location
FPG-LOG	Functional planning guidance logistics
GBAD	Ground based air defence
GSE	Ground support equipment
HN	Host nation
HNS	Host nation support
HQ	Head quarters
IAW	In accordance with
IO	International organisation
ISO	International standardisation organisation
ITAS	Intra-theatre airlift system
J4	Logistics area within functional Areas 1-9
JFAC	Joint force air component
JFACC	Joint force air component command
JFC	Joint force command

JIA	Joint implementation arrangement
JLSG	Joint logistics support group
JOA	Joint operations area
JTF	Joint task force
LCC	logistics coordination cell
LCN	Load classification number
LN	Lead nation
LOC	Lines of communication
LOG	Logistics
LOGFAS	Logistics functional area services
LOGFS	Logistics functional services
LOGREP	Logistics reporting
LOX	Liquid oxygen
MASCAL	Mass casualty
M&T	Movement and transportation
MC	Military committee
MCC	Movements control centre
MEDAD	Medical advisor
MEDDIR	Medical director
MEF	Minimum essential facilities
MHE	Materiel handling equipment
MILU	Multinational integrated logistics unit
MMR	Military minimum requirement
MNC-NE	Multinational corps-North East
MNDDP	Multinational detailed deployment plan
MND-SE	Multinational division-South East
MNLC	Multi national logistics centre
MOB	Main operating base
MS	Medical support
MTF	Medical treatment facility
NAC	North atlantic council
NACMA	NATO ACCS management agency
NAEW	NATO airborne early warning
NATO	North atlantic treaty organisation
NC3A	NATO consultation, command and control agency
NCIA	NATO communications and information agency
NDAB	NATO deployable air base
NDPP	NATO defence planning process
NCS	NATO command structure
NCSA	NATO communications and information system services agency.
NFIU	NATO force integration units
NGCS	NATO general purpose segment communications system
NGO	Non-governmental organization

NMCC	National movement coordination centre
NPLO	NATO production and logistics organisations
NSE	National support element
NSPA	NATO support agency
OOA	Out of area
OPCON	Operation control
OSCE	Organisation for security & cooperation in europe
PE	Peace establishment
PECC	Patient evacuation coordination cell
PHA	Personnel handling area
PLS	Pallet loading system
POD	Port of debarkation
POL	Petroleum, oils & lubricants
PRU	Passenger reception unit
PSO	Peace support operations
RLP	Recognized logistics picture
RRC	Rapid response capability
RSOM/I	Reception, staging and onward movement/integration
SACEUR	Strategic command europe
SAM	Surface-to-air missile
SHAPE	Supreme headquarter allied power europe
SJLSG	Standing joint logistics support group
SOC	Sector operations centre
SOF	Special operations forces
SOFA	Status of forces agreement
SPOD	Sea port of debarkation
STANAG	Standardisation agreement
TA	Technical arrangement
TACEVAL	Tactical evaluation
TACON	Tactical control
TCN	Troop contributing nation
TEU	Twenty-foot Equivalent Unit
TFHE	Tactical fuel handling equipment
TMD	Theatre missile defence
TOO	Theatre of operations
TOA	Transfer of authority
TOC	Theatre operating capability
TOPFAS	Tool for operations planning force activation and simulation.
TRC	Theatre reception centre
UN	United nations

VJTF	Very high readiness joint task force
WOC	Wing operations centre

PART II – TERMS AND DEFINITIONS

cross-servicing
That servicing performed by one service or national element for other services or national elements and for which the other services or national elements may be charged.
(NATOTerm)

host-nation support
Civil and military assistance rendered in peace, crisis or war by a host nation to NATO and/or other forces and NATO organizations that are located on, operating on/from, or in transit through the host nation's territory.
(NATOTerm)

interoperability
The ability to act together coherently, effectively and efficiently to achieve Allied tactical, operational and strategic objectives.
(NATOTerm)

logistics lead nation
A nation that assumes overall responsibility for organizing and coordinating an agreed broad spectrum of logistic support for all or part of a multinational force, including headquarters, within a defined geographical area for a defined period.
(NATOTerm)

maintenance
1. All actions taken to retain equipment in or to restore it to specified conditions until the end of its use, including inspection, testing, servicing, modification(s), classification as to serviceability, repair, recovery, rebuilding, reclamation, salvage and cannibalization.
2. All supply and repair action taken to keep a force in condition to carry out its mission.
(NATOTerm)

national support element
NSE
Any national organization or activity that supports national forces that are part of a NATO force.
Note: A national support element is under the operational control of its national authorities and not normally part of a NATO force.
(NATOTerm)

resupply
The act of replenishing stocks in order to maintain required levels of supply.
(NATOTerm)

NATO standardization agreement
STANAG
A NATO standardization document that specifies the agreement of member nations to implement a standard, in whole or in part, with or without reservation, in order to meet an interoperability requirement.
Note: A NATO standardization agreement is distinct from the standard(s) it covers.
(NATOTerm)

standardization
The activity of establishing, with regard to actual or potential problems, provisions for common and repeated use, aimed at the achievement of the optimum degree of order in a given context.
(NATOTerm)

sustainability
The ability of a force to maintain the necessary level of combat power for the duration required to achieve its objectives.
(NATOTerm)

transportation
The physical movement of people, goods, equipment and materiel from one place to another.
Note: Equipment transported may include the requisite materials handling equipment.
(NATOTerm).

ALP-4.3(A)(1)