



Infrastructure Management on Joint Operations

Joint Warfare Publication 4-05
& Joint Warfare Publications 4-05.1 to 4-05.7

INSTRUCTIONS FOR ASSOCIATED SERIES OF JOINT WARFARE PUBLICATIONS

It is intended that the publication of JWP 4-05 - Infrastructure Management on Joint Operations will be followed by the publication of a further 7 associated JWPs designed to add detail to the subject matter.

Sufficient space for these additional publications has therefore been catered for in the publication binder together with tabbed dividers denoting both publication numbers and titles. These are listed below:

JWP 4-05.1	-	Command And Control
JWP 4-05.2	-	Infrastructure Planning
JWP 4-05.3	-	Design and Execution of Works
JWP 4-05.4	-	Property Management
JWP 4-05.5	-	Works Service Contracts
JWP 4-05.6	-	Finance and Accounting
JWP 4-05.7	-	Lands Procedures

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JOINT WARFARE PUBLICATION 4-05

INFRASTRUCTURE MANAGEMENT ON JOINT OPERATIONS

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is promulgated
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Director General
Joint Doctrine and Concepts

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PREFACE

SCOPE

1. **Purpose.** The purpose of JWP 4-05 is to set out the doctrine for infrastructure management on operations. It is written principally for staff officers and civil servants responsible for the planning and mounting of operations, and for those who will have to manage the provision, operation and maintenance of infrastructure in-theatre.
2. **Context.** JWP 4-05's context is the UK's involvement in operations managed to UK rules and procedures. It covers, at the strategic and operational levels, the acquisition, management and hand-over of the infrastructure required by Force commanders. This infrastructure is managed exclusively by Service personnel or their supporting contractors during all four phases of a conflict until infrastructure responsibilities are normalised. It does not cover infrastructure of a tactical and very temporary nature, the provision of combat supplies or specific management matters concerned with the detailed implementation of infrastructure tasks. The dividing line between operational and tactical infrastructure is not based upon geography, but upon the procedures used to control its implementation, and must be determined by the operational commander.
3. **Structure.** Chapter 1 sets infrastructure in an operational context and explains the principles, characteristics and major considerations of infrastructure management. Infrastructure management in the Planning, Mounting, Conducting and Concluding Phases of operations is addressed in Chapters 2-5, respectively. Finally, Chapter 6 looks at related issues, including: operations for Other Government Departments (OGDs) and non-Governmental Organisations (NGOs); Civil-Military Co-operation (CIMIC); Host Nation Support (HNS); Contractors on Deployed Operations (CONDO); and multinational and UN aspects.

LINKAGES

4. **Allied and Single-Service.** Currently, there are no Allied or single-Service doctrinal publications solely concerned with the management of infrastructure on operations. JWP 4-00 sets out the UK Joint Logistics doctrine; JWP 4-05 is subordinate to it. In turn, future infrastructure-related JTTPs will be subordinate to JWP 4-05; areas to be addressed are:
 - a. Command and Control.
 - b. Infrastructure Planning.
 - c. Design and Execution of Works.
 - d. Property Management.

- e. Works Services Contracts.
- f. Finance and Accounting.
- g. Lands Procedures.

5. **Peacetime Procedures.** The procedures in JWP 4-05 are consistent with the more detailed provisions directing peacetime management of infrastructure contained in the documents listed below, and ease the transition to these peacetime procedures when prolonged operations require their introduction:

- a. JSP 462: Financial Management Policy Manual.
- b. JSP 434: Property Management.
- c. JSP 435: MOD Works Projects.
- d. HM Treasury: Procurement Guidance Documents 1, 2 and 3.
- e. Defence Estates (DE): Property Management of the Defence Estate.
- f. Financial matters and accounting.
- g. Contracts, leases and their administration.

INFRASTRUCTURE MANAGEMENT ON OPERATIONS

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Glossary of Abbreviations

JOINT WARFARE PUBLICATIONS

The successful prosecution of joint operations requires clearly understood doctrine that is acceptable to all nations and Services concerned. It is UK policy that national doctrine should be consistent with NATO doctrine and, by implication, its terminology and procedures (other than those exceptional circumstances when the UK has elected not to ratify NATO doctrine). Notwithstanding, the requirement exists to develop national doctrine to address those areas not adequately covered, or at all, by NATO doctrine, and to influence the development of NATO doctrine. This is met by the development of a hierarchy of Joint Warfare Publications (JWPs).

As a general rule, JWPs of principal interest to Joint Force Commanders/National Contingent Commanders and their staffs are situated 'above the line' in the hierarchy; while more detailed operational and tactical doctrine including Joint Tactics, Techniques and Procedures (JTTP) are positioned below.

Joint Doctrine Pamphlets (JDPs) are published as necessary to meet those occasions when a particular aspect of joint doctrine needs to be agreed, usually in a foreshortened time scale, either in association with a planned exercise or operation, or to enable another aspect of doctrinal work to be developed. This will often occur when a more comprehensive 'parent' publication is under development, but normally well in advance of its planned publication.

The Joint Doctrine Development Process and associated hierarchy of JWPs is explained in DCI JS 117/2000.

RECORD OF AMENDMENTS

Amendment Number	Date of Insertion	Initials

CHAPTER 1 – PRINCIPLES AND FUNCTIONS

101. This chapter discusses the principles within which those planning and managing operational infrastructure tasks must work, and the functions that stem from them.

SECTION I – LOGISTICS AND INFRASTRUCTURE

102. **Military Capability.** Military capability is the overall potential of the armed forces to achieve military objectives in support of a political purpose.¹ It is exercised through the key components of manpower, equipment, collective performance, deployability and sustainability; their relationship varies to suit the circumstances.

103. **Logistics.** Logistics is the means by which a force is materially sustained.¹ It is a critical factor in determining the feasibility of an operation and in achieving the optimum use of force. Control of logistic capability therefore enables freedom of action. JWP 4-00, Joint Logistics, stresses the importance of infrastructure on operations, both in the support and deployed formation areas. Engineering which provides that infrastructure support involves the construction, modification, repair, operation and maintenance of essential facilities and services. This includes technical and domestic accommodation, storage, ports, railways, roads, bridges, airfields, electrical power, bulk fuel, water and waste treatment systems, and structures for command, control and communications. Planning, design and management are complex and timescales are long.

104. **Definition of Infrastructure.** Infrastructure is defined in AAP-6 as ‘All fixed and permanent installations, fabrications or facilities [required] for the support and control² of military operations’. Examples are:

- a. Temporary or existing accommodation (including tented camps), airfields, ports, railways, roads, bridges and other permanent or semi-permanent installations designed to operate for an extended period of time at a specific location.
- b. The associated fortifications, power, bulk fuel and water.
- c. The use of suitable and appropriate in-service fabrications and equipment.
- d. Use or adaptation of Host Nation (HN) facilities and buildings.

¹ JWP 0-01.

² This NATO definition includes fixed communications in the word ‘control’. This is NOT the case in the context of JWP 4-05.

- e. Post-conflict reconstruction and associated 'nation building' activities.
- f. Excluded from this definition is the installation of communications equipment; this should, nonetheless, be co-ordinated with other infrastructure works.

Further definitions of terms used in this document are contained in the Glossary.

105. **Operational Infrastructure.** Operational infrastructure comprises those structures, facilities and services that are required within the Joint Operational Area (JOA) for the direct support of deployed forces.

- a. **Royal Navy/Army.** Infrastructure is seen as an important element of logistics and is required on all operations across the spectrum of conflict. It is the concern of J4 staffs within logistic cells.
- b. **Royal Air Force.** For the RAF, infrastructure is a key operational enabler; without infrastructure, aircraft cannot operate. For this reason, infrastructure at a deployed operating location is a key concern of the A3 Operations Support staff. It is not regarded as a component of logistics.

106. **Military Works Area.** In peacetime, and within established garrisons, Defence Estates sets the policy for management of infrastructure. Upon deployment, when the Works effort must be subordinated to the operational plan and when, at least initially, compliance with UK standards may not be practicable, the lead must lie with the Military. A Military Works Area (MWA) will thus exist from the time of deployment until formally rescinded by the Joint Commander (Jt Comd). Within an MWA, Royal Engineers (RE) are responsible for technical advice to deployed commanders, who will be responsible for judgements regarding what infrastructure is provided and what risk may be accepted. During the life of an MWA, there will be a migration from a policy of hastily-provided, operationally essential infrastructure having a short life and probably incorporating a degree of risk, towards more permanent infrastructure which is fully compliant with UK safety standards and other statutory requirements. The pace and path of this migration is the responsibility of the operational commander, advised by infrastructure staff.

SECTION II – THE UK LOGISTIC/INFRASTRUCTURE CONCEPT

107. **The Strategic Base.** Logistic support for operations relies on many military and civilian elements within the UK and abroad. The Strategic Base, through the Line of Communication (LOC), supports the Forward Mounting Base (FMB) and/or the JOA. Each operation requires an individual logistic solution, and detailed logistic

concepts are, therefore, formulated during the planning of an operation by the process described in Chapter 2.

108. **Defence Organisations.**

- a. **Defence Logistics Organisation.** The role of the DLO in peacetime is to maintain an organisation that can respond effectively to the logistic demands of foreseen operations. It provides materiel from the UK base to support the infrastructure effort, including aspects of Expeditionary Campaign Infrastructure (ECI) held as assets in peace.
- b. **Defence Procurement Agency.** The Defence Procurement Agency (DPA) acquires and supports new equipment. It is likely to be the lead agency for the procurement of ECI.
- c. **Defence Estates.** Defence Estates (DE) delivers estate solutions to Defence needs. Its primary objective is to ensure that the estate is managed and developed cost-effectively and in line with acknowledged best-practice. It also ensures that the Defence estate is of the appropriate size and quality for the delivery of Defence capability, and that it is managed in line with Government policy on the environment. Support to a Joint Force (JF) is provided initially by DE (Rest of World Group) which incorporates DE advisors, the Defence Land Agent (DLA), Commercial Contracts Officers and other specialist support.

109. **RN Logistic/Infrastructure Framework.** RN logistic support is based upon unit self-sufficiency. When operating in a group, enhanced sustainability is provided by oilers and other support ships operated by the Royal Fleet Auxiliary (RFA) and originating from the Strategic Base. Resort to shore-based infrastructure facilities is relatively infrequent; when required, provision is a matter for Army logistic support under RN sponsorship. When embarked or operating ashore as an autonomous amphibious force, RM are supported entirely by the Joint Amphibious Task Group. When deployed as an integral part of the Land Force, RM call upon Army logistic support. Due to its sophistication, the infrastructure support required by the RN is normally regarded as Strategic Infrastructure and included in long-term planning.

110. **Army Logistic/Infrastructure Framework.** The Army works on lines of support from 1st (organic to units), through 2nd (organic to the formation) and 3rd (theatre rear area), to 4th (the Strategic Base). Individual missions dictate logistic force groupings. Generally, Army logistic units need to be static to fulfil their primary function. Infrastructure support to the logistic framework is, therefore, required from the Air/Sea Port of Disembarkation (A/SPOD) through to forward units. At theatre level, the infrastructure focus for the Land Component will usually be delegated to the Joint Force Logistic Component (JFLogC) HQ. The initial emphasis is on the

restoration, repair, modification and operation of infrastructure assets, rather than new construction.

111. **RAF Logistic/Infrastructure Framework.** In contrast to the Army, RAF logistics are organised on a self-contained, base-by-base basis. Because infrastructure is a key enabler for the operation of aircraft, infrastructure issues are regarded by the RAF as a concern of the A3 Operations Support staff. At theatre level, the infrastructure focus for the Air Component will lie in the Joint Force Air Component (JFAC), not in the JFLogC, both of which are discussed further in Chapter 3. The command structure at each Deployment Operating Base (DOB) will include an officer responsible for the co-ordination of infrastructure matters. Infrastructure Works may be undertaken by the Army, the RAF or by civilian contractors.

112. **Alliance Operations.** Most future deployments will be as part of a joint force in support of alliance operations, principally NATO or UN, whose ways of working are now relatively well known. For such multinational operations, logistic and infrastructure matters would probably be modelled closely upon NATO concepts, whereas the relationship and division of responsibilities with the UN would be agreed and set out in a Memorandum of Understanding (MOU). It will be important for PJHQ J4 staff, in the early stages of planning such operations, to identify at what point national procedures are subsumed by those of NATO or the UN and, if necessary, to negotiate the specific MOU.

SECTION III – CHARACTERISTICS OF INFRASTRUCTURE

113. **Civil and Military Impacts.** Infrastructure is an integral part of the civil environment, and civilian needs must always be considered. It impacts upon a wide variety of activities, and is a key logistic requirement for the Joint Task Force Commander (JTFC). It may also be a key component in any subsequent nation rebuilding phase. Infrastructure can, therefore, be operationally vital and politically sensitive, and may well be controlled at a high level.

114. **Cascade of Effects.** Some infrastructure assets can have an exponential effect. An example is road networks, the repair of which not only provides for our own mobility and increased output, but which may also facilitate the resettlement of refugees, the return to normal economic activity and improved political structures.

115. **Complexity.** Many infrastructure tasks are complex and detailed advanced planning may often be difficult. Ground reconnaissance of sites and local resources is usually required, and the application of first principles will often be necessary. Decisions on a task's complexity must be made at an early stage, to direct the appropriate design and planning process. An understanding of engineering, project procedures and finance will assist planning and promote confidence.

116. **Technical Standards.** Many different technical standards may arise during an operation: those of the UK, of the Host Nation (HN), or of any other forces in a NATO, UN or other multinational force. Obtaining agreement to preferred standards can be difficult because of political sensitivities and different national approaches to health and safety requirements. J3 and J4 staffs will require full and early exposure to the operational implications of delays resulting from such issues.

117. **Timescales.** A long-term operational perspective must be sought to provide a clear planning context for all infrastructure requirements, to maximise economy in their acquisition, and to ease and speed staffing of individual issues. Adequate time must also be sought for the planning and design of infrastructure assets, the associated materiel procurement and the often complex, prescribed approvals processes. To match the operational tempo and avoid waste, the early recognition and funding of infrastructure requirements are essential.

118. **Funding.** Infrastructure funding may derive from many sources, may present difficult cost-sharing implications and, invariably, needs detailed co-ordination from the outset.

119. **Use of Contractors.** Many tasks may be within the scope of civil contractors, if conditions permit. All infrastructure tasks, no matter who undertakes the work, need correct management to secure quality and value for money, and a pragmatic balancing of the operational, engineering, manpower and financial issues will be needed.

SECTION IV – PRINCIPLES OF INFRASTRUCTURE MANAGEMENT

120. The principles below are derived from the characteristics discussed above and inform the remainder of this JWP:

- a. **Foresight.** To identify and address the many complex infrastructure issues in timely support of the operational plan.
- b. **Responsiveness.** To reduce, so far as is possible, the lengthy timescales required for infrastructure planning and implementation, and to match the timescales imposed by the operation.
- c. **Co-ordination.** To bring together all the many complex infrastructure issues for timely resolution by the right people.
- d. **Judgement.** To apply timely and reasonable technical, managerial, financial and contractual judgements, not necessarily with all the information and advice normally available.

SECTION V – INFRASTRUCTURE MANAGEMENT FUNCTIONS

121. **Management Functions.** Infrastructure management has several generic functions that are discussed below. While the emphasis placed on any function is likely to vary between the levels of command, in-theatre infrastructure staff must cover all functional areas. Many different approaches are possible, and the intelligent application of the principles involved will provide the best guide in determining the optimum answer. The broad responsibilities and tasks of each functional area for each of the operational phases are described in succeeding chapters.

- a. **Planning.** This is a continuous process from the first political discussion of possible commitment to the very last hand-over of infrastructure to other agencies. Subject matter stretches from the immediate Force needs, such as accommodation, to the coherent development of medium and long-term requirements.
- b. **Project Management.** A project is a discrete, coherent programme of Works for a single purpose, which is treated as a whole for the purpose of securing financial approval. The management of projects at the Staff level is concerned first with both defining the requirement and identifying funding for new infrastructure, and then acting in the JTFC's interests during its provision. Individual project sponsors are identified by name or by branch for those projects of sufficient operational priority, urgency, complexity or cost.
- c. **Property Management.** Here, the emphasis is on the staffing, funding and control of minor Works, including the operation and maintenance of essential services. Safe Systems of Work must be established as soon as possible and Authorising Engineers (AE) and Authorised Persons (AP) appointed. Record keeping is a vital element in protecting UK interests, and comprehensive records must be maintained from the outset and appropriately archived. In peace, a threshold figure divides major and minor Works because of different procedures. This divide is not necessarily appropriate to operational conditions. Its observance should reflect the benefits that can be gained within the theatre – a matter for negotiation at the time.
- d. **Finance.** Elements of this function include financial scrutiny, budget management and investment appraisals, as well as routine accountancy. Forecasting and auditing too are part of the function.
- e. **Contracts.** Through this function, Works, materiel and services are procured and funds committed. It is, therefore, important that robust arrangements are put in place to ensure timely response to the operational tempo, while conforming to laid down contracting regulations.

f. **Lands.** Lands management is the system for the acquisition of legal title in land, building and facilities, and aims to ensure that the continued occupation of sites by UK forces is properly protected and maintained on a fair and reasonable basis. The system incorporates procedures for the formal take-over and hand-back of sites, including the completion of detailed pre-occupation surveys. These must be carried out by suitably qualified and experienced personnel, both before and after occupation by UK forces and in accordance with laid down procedures. Correct application of such procedures will ensure that claims for property damage are minimised on hand-back of sites and that UK liability for any such damage is more readily defined. The DLA provides essential support in carrying out these tasks in-theatre.

g. **Separation of Functions.** It is a principle of government accounting that no one person is to be responsible both for authorising payments and letting contracts. There should also be a clear separation between those authorised to commit expenditure and those responsible for the financial scrutiny of expenditure.

h. **Specialist Consultants.** The field of possible endeavour is too wide for the uniformed Services to include full-time expertise on all subject areas. Specialist expertise may be required in such areas as electrical and mechanical engineering, building and civil engineering, quantity surveying, contracting, and supply. DE has a major contribution to make in many of these fields.

SECTION VI – BUDGETARY AND ASSOCIATED RESPONSIBILITIES

122. **Joint Commander.** The Jt Comd is the financial authority for all operations outside the UK. He is responsible for ensuring overall financial control of in-theatre costs and, therefore, approves the financial arrangements for an operation. He has, however, no contractual authority.

123. **Joint Task Force Commander.** The JTFC is delegated responsibility for budgetary matters from CJO. On JTFC's behalf, the Civil Secretary (Civ Sec) exercises vote management, financial control and financial scrutiny over all in-theatre expenditure or in connection with an operation.

124. **Senior Infrastructure Staff Officer.** The Senior Infrastructure Staff Officer (SISO) (see paragraph 321) would normally be delegated financial and budgetary responsibilities. He may, in turn, delegate financial authority to other Staff or Unit commanders.

125. **Delegation of Powers.** While much contracted support is initiated and provided from the UK Base, it is usually necessary to provide significant support

through contracts let in-theatre or in adjacent countries, or to initiate the requirement to the UK from theatre. Experience has shown that routing all financial decisions through the theatre's Civ Sec can overload his system and cause significant delays to progress of the operations. It is, therefore, normal for the appropriate authorities to issue delegations of financial and contractual powers to in-theatre military personnel. However, these delegations can only be given on a case-by-case basis to personnel who have the requisite experience and who are suitably qualified. How this is achieved is discussed in paragraphs 223-229 and 603.

CHAPTER 2 – THE PLANNING PHASE

201. This chapter describes first the planning framework, and the responsibilities and tasks that take place within it during the Planning Phase. The chapter closes on two particularly important aspects of the planning process: the Infrastructure Development Plan (IDP) and delegations of financial and contractual powers.

SECTION I – MILITARY STRATEGIC LEVEL PLANNING

202. **MOD Headquarters.** Chief of Defence Staff's (CDS) Planning Directive is the formal start to operational planning. The Directive provides, inter alia, broadly-drawn logistic direction to the Joint Commander (Jt Comd). This direction includes a Sustainability Statement giving assumptions on the sustainability factors for the operation. One of the most important assumptions within the Directive for infrastructure planning is the duration and intensity of the operation. The Directive is staffed fully with PJHQ, and is continuously revised.

203. **Permanent Joint Headquarters.** The assumptions within CDS' Directive provide the initial planning basis at PJHQ for identifying and quantifying the assets and facilities required for logistic support, including infrastructure, to the deploying force. Similarly, there is close consultation and co-ordination between PJHQ and its Supporting Commands (SpC) who provide the expertise not normally contained within PJHQ. The Jt Comd then issues his own Mission Directive and Sustainability Statement. Elements contributing to these are:

- a. **Military Strategic Estimate.** PJHQ J5 staffs produce a Military Strategic Estimate based on CDS' Directive and in conjunction with the staffs of MOD, the SpC and the Joint Task Force HQ (JTFHQ). Throughout this estimate process, the J4 staff ensure that logistic considerations, such as the requirement for infrastructure development, are weighed concurrently with operational matters. This estimate identifies the capabilities required from the SpC and warns Chief of Defence Logistic's (CDL) staff of the pending resource requirement. This is, necessarily, an iterative and consultative process. For example, a need for complex infrastructure assets may well have a direct bearing on 'Notice to Move' and 'Readiness in Theatre' dates.
- b. **Joint Commander's Mission Directive.** The Jt Comd's Mission Directive is derived from the Military Strategic Estimate. PJHQ J4 Infrastructure (Infra) staff contribute to the development of the Jt Comd's Mission Directive, drawing upon the SpC, Defence Logistics Organisation (DLO) and RE for much of the technical detail required. This and other work on sustainability contribute to the logistic plan – a part of the Directive – which specifies logistic Command and Control (C2) structures and ORBATs, Host

Nation Support (HNS) plans, multi-national logistic aspects, the overall concept of logistic operations, reports, returns and single-Service plans.

c. **Sustainability Statement.** Iterative analysis of demand produces progressively more accurate estimates upon which is based the Sustainability Statement, a part of the logistic plan. The Statement gives the Jt Comd's direction to staff planners and resource allocators on what needs to be delivered and when. It also defines the level of resources made available to the campaign from those in the Departmental Plan or through HNS, and can indicate the need to activate, open or reconstitute industrial infrastructure, to shorten manufacturing lead-times for top-up stocks or to initiate Urgent Operational Requirements (UOR). The Sustainability Statement provides the authority for the release and commitment of finance and materiel.

204. **Infrastructure Planning – Current and Future Operations.** PJHQ J4 staff are responsible for infrastructure planning for current and future operations; J8 staff provide the management advice and financial support required. J4 has a critical role in the early stages of this planning when there are few certainties. The responsibility may be exercised as a co-ordinating function, delegating perhaps much of the detail. The division of responsibilities between MOD/PJHQ/JTFHQ/SpC change as the manning of PJHQ J4 fluctuates, as a JTFHQ establishes itself, and as the demands of each operation dictate. Whatever the division of planning tasks, PJHQ J4 remains responsible for providing the central focus for infrastructure planning and management - since it is only at that level that all participants in the process can be brought together effectively to address the common aim. J4 staff have particular responsibility for negotiating the longest planning scenarios possible, for agreeing the technical framework, for establishing cost-sharing arrangements, and for setting in hand the required financial and contractual delegations. Technical focus remains throughout with the specialist engineer staff within the SpC.

SECTION II – OPERATIONAL LEVEL PLANNING

205. **Joint Task Force Headquarters.** At the JTFHQ theatre level, operational issues, forward planning and immediate priorities are resolved. Staff output includes:

a. **Operational Estimate.** The Jt Comd's Strategic Estimate leads to the JTFC's Operational Estimate. It is at this stage that the forces required are identified, and a JFLogC Comd, if required, is nominated. The Operational Estimate also contains a Sustainability Statement¹ that is more detailed than the Jt Comd's and which includes detailed infrastructure requirements.

¹ An example is in JWP 4-00, Annex A to Chapter 4.

b. **Joint Task Force Commander's Directive.** The estimate process contributes to JTFC's Directive, which outlines the Campaign Plan and further develops details of the aim, scale of forces, type of operation and command arrangements at this level. A Logistic Directive accompanies the Campaign Plan.

c. **Infrastructure Development Plan.** The major infrastructure planning product of the process is the IDP, which is the responsibility of the J4 Infra staff within the JTFHQ. The Plan will be developed as the planning, mounting and conduct of the operation progresses, and will draw upon the Sustainability Statements, as required. The IDP is discussed in more detail in Section IV.

SECTION III – RECONNAISSANCE MATTERS

206. The importance of conducting an early and detailed reconnaissance, while most probably being constrained by time and limited in numbers, needs constant emphasis. The reconnaissance must identify and produce the infrastructure planning outputs required in a form understandable by both military and civilian agencies. There are normally two levels of reconnaissance, strategic and operational, sometimes carried out concurrently with representatives from PJHQ J4, JTFHQ J1/J4 and the SpC, as circumstances permit.

207. **The Strategic Reconnaissance.** PJHQ conducts the Strategic Reconnaissance, which is concerned primarily with **what** needs to be done.

a. **Provision of Advice.** At this early stage, J5 work is concerned with defining and refining the Jt Comd's aims and objectives of the operation. J4 Infra advises on infrastructure requirements and on the feasibility of the options being considered. The reconnaissance party must, therefore, have within it the necessary specialist engineering knowledge and experience to cover the expected scope of infrastructure requirements. The strength of a reconnaissance party is in part, however, a political matter, and numbers may well be limited at this stage. It is for PJHQ J3 and J4 staffs to resolve how the necessary infrastructure advice is acquired.

b. **Information Needs.** Prior to the reconnaissance, the officer advising on infrastructure matters needs to have:

- (1) A full appreciation of the Jt Comd's intentions.
- (2) As full an appreciation as possible of the HN infrastructure capabilities, the resources likely to be available within the timeframe of the operation, and the technical standards which may have to be met.

- (3) Knowledge of the consultation paths and procedures necessary to negotiate HN and other Joint Force nations' assistance.
- (4) A detailed understanding of the likely infrastructure engineering capability of the deployed force.

c. **Outputs.** Outputs required include:

- (1) Contributions to the Sustainability Statement, including input to the Joint Statement of Requirement (SOR) by which PJHQ issues its statement of required capabilities to SpC.
- (2) The beginnings of the IDP.
- (3) An estimate of costs to assist early financial and contractual planning, including negotiations.
- (4) The availability of HNS, including local resources and the suitability of indigenous infrastructure.
- (5) Any requirements that may need UOR action.

208. **The Operational Reconnaissance.** JTFHQ conducts the subsequent Operational Reconnaissance that contributes to decisions on **how** the operational requirements, identified during the Strategic Reconnaissance, are to be matched by the available capabilities.

a. **Provision of Advice.** As with the Strategic Reconnaissance, the Operational Reconnaissance party should include the necessary infrastructure and associated engineer logistic knowledge and experience to determine the standards and methods of implementing infrastructure requirements.

b. **Information Needs.** These are similar to those of the Strategic Reconnaissance. Resources and Lands matters become more important issues at this stage, and appropriate advice and support must be available. Recommendations on design standards, environmental issues and accommodation policy are also important. There may be a need to make good deficiencies of information caused by numbers being limited on the Strategic Reconnaissance.

c. **Outputs.** Outputs from this reconnaissance include:

- (1) Refinement of the JTFC's Operational Directive's Sustainability Statement, and input to single-Service Force Element Tables (FET).
- (2) The initial technical and domestic accommodation plan.

- (3) Refinement of the IDP, with particular reference to Civil Affairs issues and in the light of changes to the Sustainability Statement.
- (4) Shortfalls against HN facilities required, and Status of Forces Agreements (SOFA) and Memorandum of Understanding (MOU) needs.
- (5) Refinement of Rough Orders of Cost and UORs.
- (6) Assessments of all infrastructure-associated risks.
- (7) Health and Safety, Environmental Protection and Fire Safety (SHEF) Standards to be met, and their impact upon the Jt Comd's and JTFC's personal responsibilities and plans.
- (8) The methods by which coherence between all infrastructure requirements is achieved.

SECTION IV – INFRASTRUCTURE DEVELOPMENT PLAN

209. **The Need.** The potential long-term nature of infrastructure has already been noted. Experience has shown clearly and precisely that short-term solutions, arising from short-term perspectives, often restrict the timely delivery of operational capability and can be wasteful of resources. Consequently, a forward-looking theatre IDP, with a timescale that includes **all** phases of the operation, is needed from the start. The initial outline is prepared at the planning stage and is developed by the Infra staffs within the Joint Task Force (JTF) as a continuous process up to the time of withdrawal in the Concluding Phase. Benefits include:

- a. Coherence and economy in the planning and funding of infrastructure projects and acquisitions throughout the operation.
- b. The effect of the predicted timescale of the operation on options and standards can be clearly identified.
- c. The determination of timely and adequate financial and contractual delegation requirements across the full timescale of the IDP.
- d. The proper ownership, and responsibility for operation, maintenance and repair of assets is identified, thereby permitting the effective use of critical equipments.
- e. The efficient and cost-effective management of infrastructure, based upon a theatre-wide perspective.

- f. Identification of the most cost-effective measures for estate rationalisation are addressed as soon as possible.
- g. A clear view of the desired end state and the way to achieve it.

210. **Coverage.** Each component of the JTF identifies its own requirements for infrastructure development, and owns and authors its own IDP. These individual IDPs are then drawn together and further staffed by the JTFHQ as the theatre IDP. Nation-building requirements for the HN may be included, if so directed.

211. **Contents.** The IDP requires constant management if it is to remain reactive, relevant and properly funded. It can be split conveniently into elements covering the short-term ‘bedding down’ of the deployed force, the interim term dealing with the operational needs, and the long-term up to the withdrawal of the Force. Annex A outlines infrastructure development planning matters. Detailed discussion of the IDP’s contents will be set out in an associated JTTP publication.

212. **Host Nation Support.** A nation’s resources can make a major contribution to meeting requirements through the use of HNS mechanisms. The fullest possible understanding of where and how HNS can be assessed is needed from the initial reconnaissance onwards. Chapter 6 contains more detailed discussion of HNS matters.

213. **Standards.** The standards embedded in the IDP, derived – in part – from the Sustainability Statement, should be the minimum appropriate to the length and tempo of the operation. The design issues that arise include whether UK scales, standards and materials are really required to complete a task(s), whether UK or local SHEF requirements should influence the infrastructure requirement, and whether possible delays in procuring resources from UK are consistent with operational and political issues. Once subject specialists² have set the technical standards to be achieved, these should not be changed without very good reason in order to avoid nugatory expense, compromise of safety, further delay and all-round frustration. The Military Design Authority (MDA)³ is responsible for ensuring these standards are incorporated into Works’ designs in a safe and efficient manner.

214. **Health & Safety, Environmental Protection and Fire Safety.** Implementation of full SHEF measures is an iterative process that balances SHEF and operational risks. Only operational requirements, not funding, should defer the

² Examples of subject specialists are: Military Works Force (MWF) (construction, fortifications, and expedient and semi-permanent fuel installations), Principal Ammunition Technical Officers (ammunition storage), Surgeon General’s Dept (medical facilities), Defence Fire Service (fire), Air Traffic Controllers (aircraft operating surfaces), Defence Catering Group (food handling facilities).

³ Within an MWA, a MDA must be appointed for all infrastructure Works. The MDA is responsible for determining the technical standards required and should ensure that, so far as is reasonably practicable, SHEF risks are avoided or minimised.

implementation of SHEF measures. It is often not possible to implement full SHEF procedures, particularly in the early stages of an operation. Therefore, it is a Comd's responsibility to decide, based upon appropriate advice, the level of SHEF risk to be adopted as part of the IDP and other documents.

SECTION V – SPECIALIST CONSULTANTS/CIVILIAN CONTRACTORS

215. There is always a need to call on areas of expertise that cannot be maintained permanently by the Services in peacetime.

216. **Military Specialists.**

a. **Regular Posts.** The major immediate pool of expertise in peace and conflict is the Surgeon General's Department (SGD), the RE⁴, the Royal Logistics Corp (RLC), the RAF Infrastructure Organisation (RAFIO) and specialist RN and RAF personnel.

b. **Engineer and Logistic Staff Corps RE(V).** The next, and almost as immediate, level of technical advice is that available from the Engineer and Logistics Staff Corps (E&LSC) RE(V). The E&LSC is a TA unit whose individuals are drawn from the highest level across the civilian engineering and logistic disciplines. It is accessed through HQ Engineer in Chief (Army) (EinC(A)) and can draw quickly upon capabilities, capacity and advice at national and international level across the full spectrum of infrastructure assessment, planning, design, implementation and repair.

217. **Civil Service Specialists – Defence Estates.** Technical knowledge and experience is also available within, or can be accessed by, DE. As a peace-only establishment, it works to more deliberate and detailed procedures which are often inappropriate on operations. Nevertheless, it can contribute both to the letting of complex construction contracts and in certain specialist technical areas.

218. **Civil Service Specialists – Defence Fire Service.** The DFS provides advice on fire prevention measures and should approve design drawings before construction starts.

219. **Civilian Consultants and Contractors.** Civilian consultants and contractors may be employed for any task where the risks, operational and commercial, can be

⁴ Infrastructure engineering expertise is concentrated in Military Engineer Services (MES) (consisting of MWF, MES (Works), and Commander Royal Engineers (Airfields) (CRE(A)) and 12 (Air Sp) Engr Bde. MWF is made up of 3 units (Commander Royal Engineer (Works)), each consisting of a number of sub units (Specialist Teams Royal Engineers (STRE)) specialising in Bulk Fuel, Bulk Water, Materials, Utilities and Works. CRE(A) has a number of STsRE with air support expertise.

managed sufficiently to make their use cost-effective. Their involvement on operations is expanding, and will continue to do so, as experience and confidence in the outputs they achieve grow. Chapter 6 discusses Contractors on Deployed Operations (CONDO) more fully.

220. **Governmental Task Forces.** The Department of Trade and Industry (DTI) and the Department for International Development (DfID) can set up their own construction and facilities management task forces, drawn from the civil sector. Such deployments provide evidence of political commitment to restoring normality in the country concerned, and also serve to extract scarce military manpower for redeployment elsewhere. Effective interfaces, both in the UK and within theatre, must be established as soon as possible if an integrated infrastructure strategy, with common and well-understood objectives, is to be achieved.

SECTION VI – FINANCIAL AND CONTRACTUAL ARRANGEMENTS

221. **Financial and Contractual Planning.** The availability of funds and their commitment are key enablers of infrastructure projects, and delay often stems from a lack of foresight and clarity in deciding who should fund, and who has funded, a task or part thereof. The provision, repair and maintenance of major routes is an example of where UK, HN and NATO funding issues can conflict. Consequently, financial and contractual arrangements need to be formalised during the Planning Phase within PJHQ and must, clearly, be linked closely to the outputs of both the Strategic and Operational Reconnaissances.

222. **Accounting.** Accounting regulations apply throughout an operation from the first day, and it is the policy of the Chief of Joint Operations (CJO) that they are not relaxed at any stage. CJO's Directive and subordinate Directives for an operation have, in their logistics annex, a section on finance which specifies accounting procedures in detail. The section also provides the 'Delta' Unit Identification Number (UIN) for that operation to provide an audit trail for operational expenditure within the theatre concerned. Pre-deployment costs normally lie where they fall as authorised overspends above the Budget Holder's normal allocation.

SECTION VII – DELEGATIONS

223. Financial and contractual delegations, of the requisite scope and size, to Service personnel are an important element in planning the deployment of effective personnel.

224. **Guiding Factors.** The factors guiding the granting of delegations are:

- a. The size of delegations is linked directly to the financial requirements of the projects concerned, and to the training, qualifications and experience of those to whom the delegations apply.
- b. The direction of delegations is as important as their scope and/or size.
- c. Delegations should only be withdrawn when individuals are posted from the theatre, or when there is no further medium/long-term prospect of the delegations being required.

225. **Identifying Individual Delegations Required.** One of the prime outputs from the Strategic and Operational Reconnaissances is the requirement for individual delegations. This early spotlight on a critical activity ensures that delegations are sought and granted at the same tempo as the operation as a whole. It must be noted that individual delegations within the Air Component logistic and infrastructure organisation are in place in peace. This is not the case within infrastructure-related formations/units within the Land Component.

226. **Applying for Delegations.** Delegations of powers must be sought on an individual basis within the context of a specific operation or project. The information sought by the delegating authority will normally include:

- a. Start date and period of deployment.
- b. Estimated Annual Value (EAV) for the location (if known).
- c. Details of any extant delegations held by the nominee.
- d. Confirmation that the nominee will not hold both financial and contractual delegations, and that separation is assured.
- e. Details of relevant experience and training (eg. a CV).
- f. Number of orders and their average value per month.
- g. Value of delegation requested and, where appropriate, both in competition and without competition.

227. **Delegated Authority.** This delegation gives to the designated person the power to approve and implement, subject to any constraints that may be applied, defined work within a financial ceiling.

228. **Financial Delegations.**

- a. **Financial Authority.** Financial delegations allow those to whom the power is granted to authorise up to specified limits, at specified frequencies,

and for specific numbers of packages of work. The JTFC receives a delegation from CJO for financial authority. In turn, the JTFC would normally delegate a financial authority for infrastructure tasks to his Senior Infrastructure Staff Officer (SISO). This would permit SISO to authorise infrastructure tasks commensurate with the JTFC's plan.

b. **Financial and Requirement Scrutiny Authority.** PJHQ J8 Hd Fin Sec will delegate directly to the theatre Civ Sec the Financial and Requirement Scrutiny Authority for all financial expenditure, up to a specified limit, for the operation. All tasks, from the very outset of an operation, require scrutiny to ensure that correct financial procedures have been followed, and that the task authorised meets the requirements specified.



229. **Contractual Delegations.**

a. **Works Services.** A Works Services delegation is required to allow the military to issue contracts for the provision of infrastructure services. A unit deploying to undertake infrastructure tasks should identify a suitable candidate to run Works Services contracts, and then apply to DE, through HQ Military Engineering Services (MES), submitting a CV outlining the candidate's experience and qualification. DE will then issue a Letter of Delegation. Each case will always be based upon the individual's merits.

b. **Materiel.** A deploying unit should also identify a suitable candidate to run materiel contracts, and then apply to Assistant Director Contracts (ADC) LAND or ADC HQ STC submitting a CV outlining the candidate's experience and qualification. ADC LAND/STC will then issue a Letter of Delegation. Again, each case is based upon an individual's technical experience and, in particular, his construction materiel experience. Contractual powers will also reflect the type of contract involved (eg. an enabling arrangement, or one involving materiel from adjacent countries).

c. **Lands.** The deploying Defence Lands Agent should have the appropriate Power of Attorney to negotiate leases. Occasionally this may be delegated to Service personnel.

ANNEX 2A – INFRASTRUCTURE DEVELOPMENT PLANNING

	Planning Phase	Mounting Phase	Conducting Phase	Concluding Phase
Joint Force IDP	(To be covered in detail in associated JTTP) 			
Inputs:	(All inputs start in Planning Phase and continue throughout)			
	<ul style="list-style-type: none"> • Jt Comd's Intentions • Sustainability Statements • Operational requirements • Civil-Military Co-operation (CIMIC) needs • In-theatre resources • Engineer intelligence • Technical standards • SHEF standards • Engineering capability of deploying force • Control procedures 			
	Operational			Peacetime 
Outputs:				
	<ul style="list-style-type: none"> • Theatre IDP • Sea, Land, Air Component IDPs (where appropriate) • Deployed Operating Base IDPs (where appropriate) • Infrastructure Database of all infrastructure assets that are the responsibility of the Joint Force 			
Particular Subject Areas	<ul style="list-style-type: none"> • Rough orders of cost • Funding • UORs and externally sourced equipment • Options and standards • HNS • Use of contractors • Environment of deployment area – impact on other requirements (eg. accommodation) • Water and fuel requirements • Ammunition storage requirements 	<ul style="list-style-type: none"> • Financial and contractual delegations • CIMIC requirements • Rental policy • Refugee and humanitarian support 	<ul style="list-style-type: none"> • Ownership, maintenance, usage of assets • Planned improvements in standards • Planned moves • Planned new builds • Reconstitution policy • Refurbishment policy • Transition to peace control measures • EAV submission • Preparation and maintenance of Infrastructure Database 	<ul style="list-style-type: none"> • Return or disposal of assets • Sale or gifting of assets • Estate rationalisation • OGD interests • Civil contractors' interests • Recording and evaluation

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CHAPTER 3 – THE MOUNTING PHASE

301. With plans in place and the resources to support them available, the mounting phase can begin. This chapter sets out the planning and management responsibilities and tasks for this phase, and considers Command and Control (C2) issues. The pace and fluidity of planning will need to be matched by speed of reaction.

SECTION I – DEPLOYMENT

302. **Logistic Factors.** The strategic projection of rapid reaction forces depends upon logistic and infrastructure enabling units setting up the structures and services needed for the arrival of the main force. Infra staff, engineer and logistic units will, therefore, often deploy ahead of the main force. Once they have arrived, the distribution of main force personnel and materiel forward from the Air/Sea Ports of Disembarkation (A/SPODs) is dependent upon having in place and maintaining the necessary routes, staging areas and airfields.

303. **The Desired Deployment Plan.** The Force must be mounted and deployed in a manner consistent with the operational plan. The single-Service Force Element Tables (FET) inform the Desired Order of Arrival Staff Table (DOAST). The result is the Desired Deployment Plan issued by the Joint Task Force Headquarters (JTFHQ), of which Infrastructure manpower requirements are a part.

a. **Theatre Activation Party.** This party contains the necessary breadth of specialisations to start the disembarkation of troops and their movement forward. Infrastructure staffs are a normal part of this party.

b. **Land Component Rear Area Support Organisation.** The Force Rear Area Support Organisation, when established, will undertake many tasks of an infrastructure nature, including establishing, administering and maintaining transit camps using, perhaps, Expeditionary Campaign Infrastructure (ECI) and other externally sourced materiel. These tasks will have been included in the Infrastructure Development Plan (IDP).

304. **Externally-Sourced Materiel.** Materiel delivered from outside the Joint Operations Area (JOA), such as ECI, may need to be included in the DOAST. Contractors may deliver other materiel direct to the theatre. Regardless of the source, provision needs to be made to co-ordinate the arrival of the materiel into the A/SPOD and for its onward movement up the Line(s) of Communication (LOC).

SECTION II – RESPONSIBILITIES AND TASKS – PERMANENT JOINT HEADQUARTERS

305. J4 Infra responsibilities within Permanent Joint Headquarters (PJHQ) from the Mounting Phase onwards include:

- a. The strategic oversight of planning for infrastructure assets, including the operational endorsement of major projects.
- b. Ensuring, with appropriate advice, that the requirement for new construction is properly considered when Military Construction Force (MCF) Orders of Battle (ORBATs) are under review, and that the financial impact of MCF force level proposals are taken fully into account.
- c. Expediting the grant to the theatre of those financial allocations and delegations associated with infrastructure tasks.
- d. Co-ordinating and dealing with Defence Estates (DE), the Defence Procurement Agency (DPA), the Defence Logistics Organisation (DLO) and other agencies.

SECTION III – RESPONSIBILITIES AND TASKS JOINT TASK FORCE HEADQUARTERS DEPLOYED

306. **Joint Task Force Headquarters J4 Infrastructure.** The main burden of the management of infrastructure on operations lies with the JTFHQ which has delegated to it, by PJHQ, the in-theatre control of logistic/infrastructure support for national operations. The JTFHQ usually delegates the function in the Land Component to the Joint Force Logistics Component (JFLogC) HQ. A3 staff in the Joint Force Air Component (JFAC) HQ exercise the function in the Air Component. A schematic of the control arrangements for infrastructure on operations is at Annex A and an illustrative division of functions between the J4 Infra staff, specialist engineers and the MCF is at Annex B.

307. **Key Factors.** In bringing infrastructure management functions together in one HQ, it is useful to apply a set of key factors, which also conform to peacetime procedures:

- a. **Separation of Duties:**
 - (1) Maintenance of a clear separation between the long-term planning function and that of the daily execution of tasks to ensure both are given the appropriate staff effort.

(2) Maintenance, for probity reasons, of a clear division between those stating the requirement, those placing orders and those with authority to clear bills for payment.

- b. **Accountability.** The audit of infrastructure management activities, commensurate with operational pressures at the time, again for probity reasons.
- c. **Integrated Manning.** Achieve integrated military/civilian manning as soon as possible in order to release scarce military resources for redeployment.

308. **Responsibilities and Tasks.** J4 Infra responsibilities within JTF/JFAC/Joint Force Land Component (JFLC)/JFLogC HQs are primarily those of planning and arranging funding for those tasks identified as meeting operational requirements. J4 Infra staff should avoid being drawn into the day-by-day management of Works tasks. Particular tasks, which will be expanded upon in Joint Tactics, Techniques and Procedures (JTTP), include:

- a. Ensuring that the theatre IDP matches the operational requirement, including agreed Civil Affairs needs, in the light of new knowledge and revised plans.
- b. Assisting the Joint Force Engineer Commander in developing engineer intelligence and knowledge of local infrastructure and resources.
- c. Sourcing local specialist advice on complex technical systems and facilities required by the Force.
- d. Exploiting local resources by letting works and maintenance contracts.
- e. Staffing requests for Engineer and Logistics Staff Corps (E&LSC) RE(V) and other external support for any UK commercial knowledge relevant to the theatre.

SECTION IV – RESPONSIBILITIES AND TASKS

JOINT TASK FORCE HEADQUARTERS NOT DEPLOYED

309. **Management of Joint Issues.** When a JTFHQ is not established or deployed to a joint operational theatre, PJHQ J4 Infra would draw together the Components' IDPs. The single-Service Components would then manage their own IDPs under the general control of PJHQ J4, drawing upon Supporting Commands (SpC) as required. It is possible for a single-Service Component to provide infrastructure support to other Service Components.

310. **Joint Force Land Component Infrastructure Management.** For infrastructure requirements within the JFLC's area of responsibility, infrastructure management follows closely the direction set out in paragraphs 306 and 307.

311. **Joint Force Air Component Infrastructure Management.** At the outset of a deployed air operation, the pace of operations dictates that infrastructure management is led by 12 (Air Sp) Engr Bde which is responsible for ensuring the early effectiveness of Deployed Operating Base (DOB) infrastructure. At an agreed point, the lead for infrastructure management on each DOB becomes the responsibility of a Tactical Property Manager (TacPROM), an RAF officer normally detached from a Main Operating Base (MOB), with infrastructure engineering responsibilities being retained by RE. If not on the initial deployment, a RAF TacPROM from either a MOB or Infra Ops should be deployed as soon as possible thereafter. Infrastructure requirements for a theatre may be drawn together at either a deployed JFAC HQ or HQ Commander British Forces (Air) with integral infrastructure staff or, if this HQ or infrastructure staff have not deployed, directly by PJHQ J4 Infra with advice and support from HQ STC.

312. **Joint Force Maritime Component Infrastructure Management.** It is rare that dedicated infrastructure is required for the Joint Force Maritime Component (JFMC). However, if an amphibious operation is to be conducted, with no major contribution from the other Services, there may be a requirement for the Amphibious Task Group to be augmented by infrastructure staff to support Works ashore.

SECTION V – COMMAND AND CONTROL PRINCIPLES

313. It is axiomatic that in complex and fast moving situations C2 mechanisms must be very clear, as simple as possible and related entirely to the functions being carried out. Recent deployments involving infrastructure planning and/or tasks have demonstrated that no single template can be applied to commanding and controlling units tasked with infrastructure work. The paragraphs below follow the Principles of Command¹, suggest their possible application in the infrastructure arena and are a useful method of brigading C2 considerations.

314. **Unity of Command.** A commander should be accountable to only one superior within a clear chain of command, where command at each level is focused on one commander. Technical control must not eclipse or confuse the primacy of the command, and must be clearly specified and delegated.

315. **Co-operation.** The three elements contributing to this are a common aim, mutual goodwill and a clear division of responsibilities. This is formalised through the defined states of command.

¹ Army Field Manual Vol 1, Pt 8, Command and Staff Procedures (AC 71674).

316. **Balanced Structure.** The number of subordinates under command must be related to the complexity, tasks and geographical spread of the organisations involved.

317. **Common and Responsive Procedures.** Simple, efficient and flexible procedures are always to be sought in order to aid decision-making and the formulation of directives and orders.

318. **Dynamic Organisation.** Changing situations and operational requirements demand the adjustment of structures and procedures. Responsive and continuous monitoring and review of the organisation for command is, therefore, required.

SECTION VI – CRITICAL APPOINTMENTS

319. Key posts to enable effective infrastructure control and management are discussed below. These posts could be located in the JFLogC HQ, rather than in the JTFHQ.

320. **Permanent Joint Headquarters J4 Infrastructure.** PJHQ J4 is the UK-based focus for all infrastructure matters on operations, providing direction on infrastructure management, and military and civilian procedures to be adopted.

321. **Joint Task Force Headquarters J4 Infrastructure Staff – Senior Infrastructure Staff Officer.** The Senior Infrastructure Staff Officer (SISO) post is normally filled by a senior specialist engineer from Military Engineering Services (MES) or a RAF Infrastructure Organisation (RAFIO) officer. It brings together all infrastructure planning from the Sea, Land and Air (when appropriate) Components, and is the link with the planning of other involved nations. It advises the JTFC on these and associated matters, such as meeting Civil Affairs' infrastructure concerns. The post addresses a wide variety of sensitive matters, and those filling it must be capable of taking decisions on infrastructure engineering matters. Therefore, at the outset, a suitably qualified and experienced officer should fill this post.

322. **Joint Task Force Headquarters J4 Infrastructure Works/Property Management Staff.** Experience shows that appropriate staff with Works and Property Management (PROPMAN) experience must support the SISO.

323. **Joint Task Force Headquarters J4 Infrastructure Finance.** Close and immediate finance support is critical. This is particularly so in the early stages of a deployment when local resources are likely to be required. Civil servants or military personnel from accounting specialisations can fill these posts.

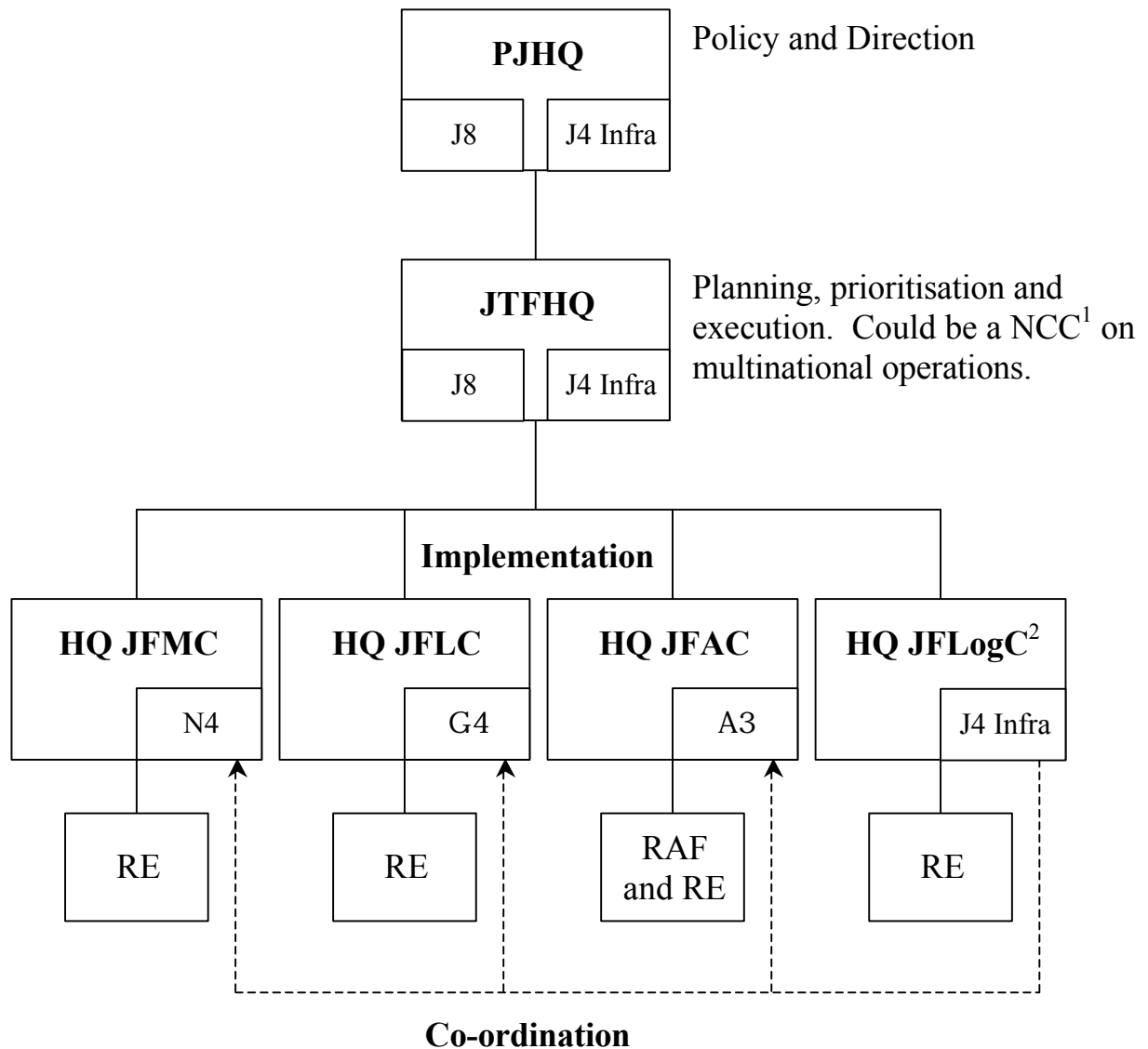
324. **Joint Task Force Headquarters J4 Infrastructure Lands.** A Defence Lands Agent (DLA) from DE, or a suitably experienced officer with the appropriate delegation, should be deployed as early as possible to advise and assist in the

acquisition of new sites, essential rights of way and easements for utility supplies. Where an owner can be found, the DLA will negotiate a fair and reasonable rent and establish an appropriate lease or licence agreement, which is readily enforceable. The DLA will be available thereafter to provide advice on the rights and responsibilities of the various parties to such agreements, and to conduct and/or assist in the negotiation of rent reviews/licence renewals and terminations.

325. **Infrastructure Works Services Contracts.** Close and immediate contracts support is critical at the early stages of a deployment. Works Contracts Officers posts should be filled by suitably qualified and experienced engineers, and are normally provided by Garrison Engineers from the deployed RE formation.

326. **Infrastructure Materiel Contracts.** Again, close and immediate contracts support is critical at the early stages of a deployment. Local Purchase Officer posts for engineer materiel should be filled by suitably qualified and experienced personnel with some understanding of the Works requirement.

ANNEX 3A – CONTROL OF INFRASTRUCTURE ON OPERATIONS



Notes:

1. National Contingent Command (NCC).
2. Could be a National Support Element (NSE) on multinational operations.

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ANNEX 3B – DIVISION OF FUNCTIONS

INFRASTRUCTURE STAFF, SPECIALIST ENGINEERS, MILITARY AND/OR CIVILIAN CONSTRUCTION FORCE

J4 INFRA STAFF

- Requirement definition
- Project sponsorship
- Siting boards
- Hand-over boards
- Plan, prioritise and coordinate execution of infrastructure tasks
- Maintenance of infrastructure database and associated records
- Investment appraisals
- Financial planning
- Financial approvals
- Control of expenditure

JOINT FORCE ENGINEER

- Control infrastructure tasks
- Command Military Construction Force
- Allocate military resources

SPECIALIST ENGINEERS

- Feasibility/option studies
- Property management
- Building asset inspection
- Maintenance planning
- Maintenance works
- Project management of civilian construction force (CCF) and combined MCF/CCF
- Running commercial contracts
- Essential services operation
- Safe systems of work
- Support to MCF/CCF by:
 - Detailed design (or accepting designs prepared by others)
 - Design checks
 - Quality assurance
 - Routine inspections

MILITARY/CIVILIAN CONSTRUCTION FORCE

- Project management
- Planning supervisor
- Materiel procurement
- Construction, operation and maintenance
- Works construction standards
- Site safety
- Snagging
- As-built drawings

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CHAPTER 4 – THE CONDUCTING PHASE

401. The Mounting Phase will have established the structures necessary to manage the Theatre Infrastructure Development Plan (IDP). The Conducting Phase can be seen as something of a ‘steady state’; but it is in fact a period of almost continuous change. ‘Get-you-in’ deployment measures are superseded by longer-term demands. Management structures and procedures described in Chapter 3 migrate from almost entirely military to a military/civilian mix, and the operational focus changes in anticipation of the Concluding Phase. The overall imperative changes from one of time (during the Mounting Phase) to one of money (to minimise whole-life costs throughout the expected duration of the operation). This chapter discusses the generic management functions during the Conducting Phase at both the Permanent Joint Headquarters (PJHQ) and Joint Task Force HQ (JTFHQ) levels. Detailed procedures and practices will be in future subordinate joint publications.

SECTION I – INFRASTRUCTURE CONTROL PROCEDURES

402. **Responsibilities.** As an operation develops and as a theatre matures, the responsibilities of PJHQ remain to plan, guide, approve, monitor, co-ordinate and fund. The J4 Infra staffs within JTFHQ (or the Joint Force Land, Air and Logistics Component - JFLC, JFAC and JFLogC - HQs, if activated) conduct the detailed planning and execution of the Theatre IDP. In-theatre management responsibilities change with time, and a guide to the migration of the key functions is at Annex A.

403. **Management Procedures.** Infrastructure management functions are similar to those in peace, and management procedures mirror those of peacetime so far as is reasonably practicable. Where departures from normal peacetime practice do occur, the IDP should chart the eventual migration back to full peacetime procedures.

404. **Task Authorisation and Control.** Management procedures include the authorisation and control of tasks. Approvals need to be given for the commitment of funds and other matters. The level at which approvals must be sought is determined by the budgetary and financial delegations in place at the time. A schematic of the requesting and approving process is at Annex B.

405. **A ‘Mature’ Theatre.** The term a ‘mature’ theatre implies that procedures are much the same as those in peace. It occurs when the tempo of operations has reduced to a level where the IDP can include an Estimated Annual Value (EAV) of the Works requirement. It may also be characterised by an even greater use of contractors and further integration of civil servants into the in-theatre J4 Infra organisation.

406. **Normalisation.** Normalisation of infrastructure procedures on operations lies within the Conducting Phase, but is dependent upon the nature and duration of an operation. During the first 6-9 months of an operation, Works will be of a more

expedient nature; at the end of the period, the operation is likely to either enter the Concluding Phase, or settle into an extended Conducting Phase. Beyond the first 6-9 months, more permanent infrastructure is established which is linked to the expected duration of the operations; structures could be designed to operate for 3-5 years or possibly longer.

SECTION II – PLANNING

407. **The Theatre Infrastructure Development Plan.** The Theatre IDP is a living document, as are its supporting IDPs owned and authored by each component of the JTF. By now, it will be very different to that developed during the Planning Phase as a greater understanding of the requirement is realised. It remains important that the Plan retains a long-term perspective to prevent resources and funds being wasted. The Plan should consider as soon as possible the challenges surrounding the withdrawal of the Force from the Theatre.

408. **The Infrastructure Database.** An important associated planning aid is an Infrastructure Database that maintains up-to-date records for each asset (eg reference number, location, works completed, associated costs and any other information of value to the planning process). It is the responsibility of the JTFHQ to direct where, how and by whom the Database is maintained.

409. **The Health & Safety, Environmental Protection and Fire Safety Plan.** The Health & Safety, Environmental Protection and Fire Safety Plan (SHEF) should have been drafted after the Operational Reconnaissance, and should state the SHEF measures to be adopted.

a. **Chief of Joint Operation's Policy.** The Chief of Joint Operation's (CJO's) SHEF Policy is published periodically. Safety is a command responsibility. UK Commands overseas are required:

(1) To apply UK standards where reasonably practicable and comply with relevant Host Nations' (HN) standards.

(2) To provide and maintain, so far as is reasonably practicable, a healthy, safe, protected and sustainable living and working environment.

b. **Delegation of Responsibilities.** While CJO can delegate the implementation of SHEF measures, he cannot delegate responsibility for SHEF as a whole. CJO's Policy is particularly important in defining objectives, in emphasising the aspect of 'reasonableness', and in noting that financial stringencies do not justify failure to correct or control hazards. The operational environment is not excluded. Consequently, scope exists for the Joint Task Force Commander (JTFC) to exercise a level of discretion and

conscious decision-making that should be taken up and documented. An appropriate balance of risks against time, money and difficulty must be struck.

c. **Documenting Decisions.** It is often not possible to implement immediately full SHEF procedures, which can only evolve during an iterative process, balancing operational and other risks. Only operational risks should defer the implementation of SHEF measures. The decision on the level of risk to be adopted is the operational Comd's responsibility, based upon the risk estimate. Decisions and reasons for them must be fully documented.

d. **Safe Systems at Work.** The implementation of appropriate SSW, following guidelines laid down in Defence Estates (DE) Safety Rules and Procedures (SRP) should be considered as part of the SHEF Plan. This should include the training and appointment of Authorising Engineers (AE) and Authorised Persons (AP).

SECTION III – PROJECT MANAGEMENT

410. **Sponsorship.** Units deployed on operations have neither the capability nor capacity to take on the sponsorship of major projects, and the Project Sponsor role is normally carried out by JFLogC/JFAC Infra staff. So far as operational circumstances permit, the peacetime procedures in JSP 435 – MOD Works Projects – are used. Major projects are defined in peace by agreed financial thresholds laid down by PJHQ.

411. **Sponsorship Responsibilities and Tasks.** The responsibilities of infrastructure project sponsors are specified in JSP 435 and include:

- a. Assessing, defining and planning requirements in output terms.
- b. Option studies, investment appraisals and funding approvals.
- c. Preparation of the Project Brief.
- d. Appointment and supervision of Project Managers, management of project milestones and payments, and monitor and audit of contracts.
- e. Interoperability matters.
- f. Acceptance of completed Works.

412. **Project Management.** Project Management during the Conducting Phase will include reconnaissance, design, supervision, auditing of contractor performance, and anything else required to complete the project in a timely, well engineered, safe and cost effective manner. For projects where the responsibility for Project Management has been placed with a contractor, there will remain a responsibility to monitor and

audit the totality of the project, which may also include such tasks as enabling and associated works outside the main contract.

SECTION IV – PROPERTY MANAGEMENT

413. **Property Management.** Property Management (PROPMAN) comprises all maintenance and minor projects that are needed to repair, maintain or improve infrastructure. The peacetime procedures set out in JSP 434 – PROPMAN – are used so far as operational circumstances permit.

414. **Property Management Responsibilities and Tasks.** Property Management responsibilities and tasks divide into 3 closely related elements:

- a. **Professional Advice.** Professional advice (which may be provided by RE, DE or a contractor) is needed to:
 - (1) Determine the most appropriate mechanism for the provision of maintenance and minor projects.
 - (2) Ensure that routine inspections and other functions are co-ordinated to achieve compliance with statutory regulations.
- b. **Decision Making.** The function of the Property Manager (PROM).
- c. **Maintenance and Minor Projects.** Methods of maintenance and procuring minor projects will depend upon the characteristics of the operation and theatre. RE, RAF or contractors may be used.

415. **Lands Management.** This function incorporates the acquisition of new sites, associated rights of way and easements, together with the loan, disposal and transfer of surplus assets. The Defence Lands Agent (DLA) provides essential support in carrying out these tasks in-theatre. Alternatively, if one is not available, written and photographic surveys and dilapidation reports on initial occupation and hand back should be completed by suitably qualified military personnel and the appropriate records maintained. A DLA should audit these at the earliest opportunity in order to ensure that UK liability for any damage is more readily defined and any claims minimised.

SECTION V – FINANCE

416. Normal procedures are used whenever possible, and these are set out in JSP 462 – Financial Management Policy Manual.

SECTION VI – PROBITY AND ACCOUNTABILITY

417. **Probity.** There are a number of factors that can make normal practices difficult to implement, particularly in the early stages of an operation. Examples are a reduced number of tenderers, cartels and the lack of a local legal system. Fine judgement will be required.

418. **Accountability.** CJO has directed that normal accounting practices will continue to be adopted on all operations. However, it can sometimes be very difficult to obtain timely authority or advice on difficult issues. In such cases and in an operational environment, action is always to be preferred to inaction in order to match the tempo of operations.

419. **The Test of ‘Reasonableness’.** Where issues of probity and/or accountability arise, and their authoritative resolution is not possible within the required timeframe, it is wise to assume that it may be necessary to account for decisions and actions taken. A clear audit trail should, therefore, always be established and maintained fully with the aim of establishing that the decisions and actions taken pass the test of being “reasonable” under the circumstances of the time and place.

SECTION VII – PROVISION OF MATERIEL

420. Different methods of procuring materiel can greatly influence how projects are carried out, at what speed and to what quality. A JTTP publication will cover this area of vital importance to the successful completion of infrastructure projects. The main sources of materiel for projects are:

- a. **In-Country Resources.** In-Country Resources (ICR) are provided mainly through the HN, and may be subject to Memoranda of Understanding (MOU) and other enabling documents. In the case of combined operations, ICR should be coordinated through the combined HQ to avoid national components competing for potentially scarce resources (see Paragraph 620).
- b. **Joint or Coalition Assets.** The availability of these assets is determined normally during the Planning Phase, and should be organised on a Lead Service or Nation basis.
- c. **The International Market Place.** Whilst availability may be good, there can be complications over language and law.
- d. **Items Sourced in UK.** Quality and quantity are normally assured, but timeliness can be a problem.

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ANNEX 4A – INFRASTRUCTURE RESPONSIBILITIES¹

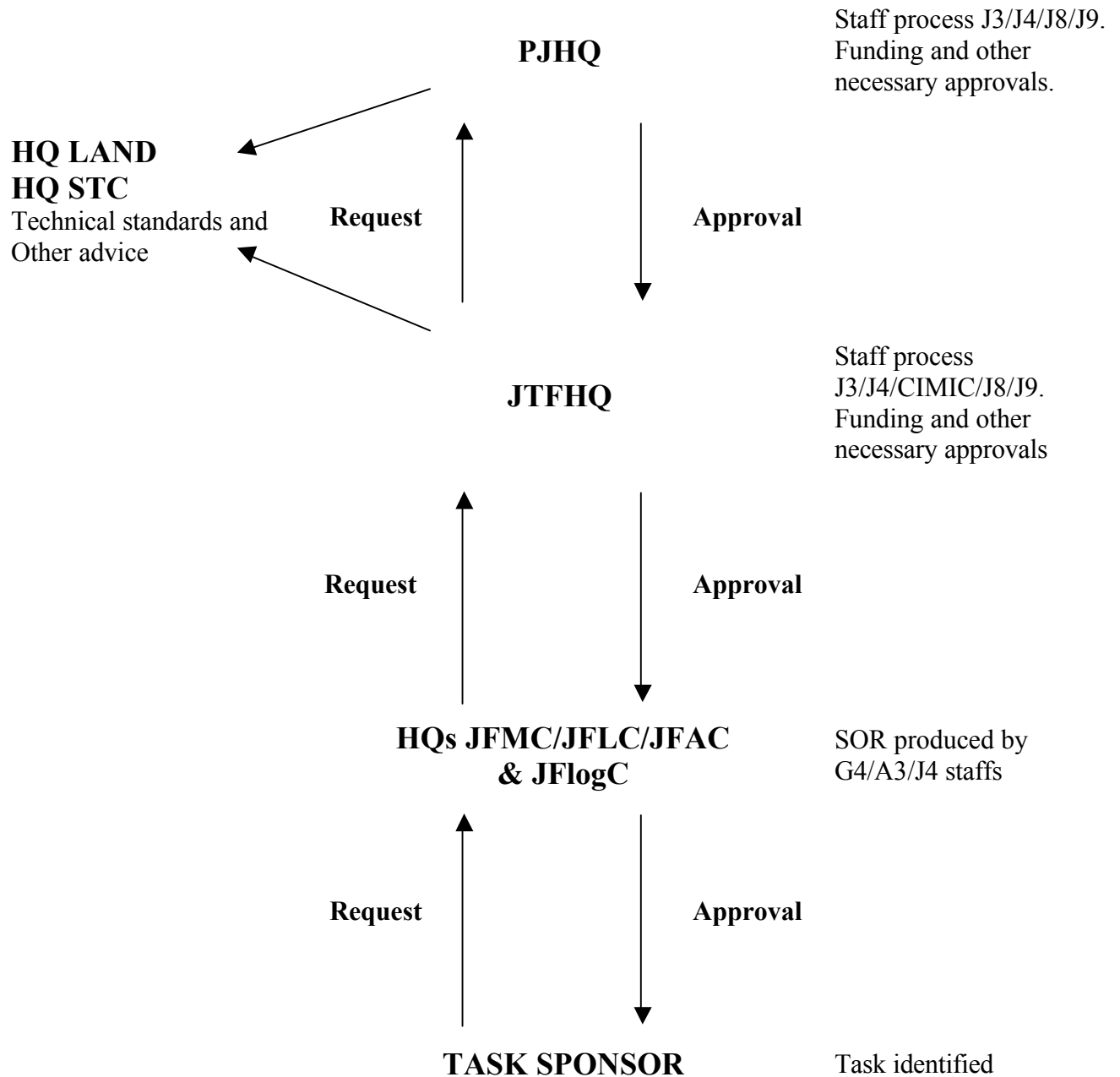
Ser	Item	New Theatre 1–9 mths	Mature Theatre 9 mths–5 yrs	Short-Term Garrison 5–10 yrs	Long-Term Garrison 10 yrs +
(a)	(b)	(c)	(d)	(e)	(f)
1	Funded by	PJHQ	PJHQ	PJHQ	PJHQ
2	MWA ²	Yes	Yes	Yes/No	No
3	IDP	J4 Infra	J4 Infra ³	J4 Infra ³	J4 Infra ³
4	Design Authority	RE ⁴	RE	RE/DE	DE/ Contractor
5	In-theatre command, design and consultancy	RE ⁴	RE ⁴ / Contractor	Contractor	Contractor
6	Project Management	RE ⁵	RE ⁵ /Contractor	RE/Contractor	DE/Contractor
7	Construction	RE	RE/Contractor	Contractor	Contractor
8	Contracts	RE	RE	DE/RE	DE
9	PROPMAN	RE/RAF	RE/RAF	Gar/Stn HQ	Gar/Stn HQ
10	O&M	RE	RE/Contractor	Contractor	Contractor
11	WSM ⁶	RE	RE/Contractor	Contractor	Contractor
12	EWC	RE	RE/DE	RE/DE/ Contractor	Contractor
13	AEs and APs	RE	RE/Contractor	RE/Contractor	RE/Contractor
14	Audit Safe Systems of Work ⁷	RE Wks Insp	RE Wks Insp	RE Wks Insp/ DE	DE

Notes:

1. This table is only a guide. Different arrangements may be necessary in certain circumstances.
2. Military Works Area activity directed by J4 PJHQ with support from Front-Line Commands.
3. Should incorporate Defence Estates representative(s) to provide additional expertise.
4. Normally Military Works Force for LAND-led theatres.
5. May involve Defence Procurement Agency and Defence Logistics Organisation, with appropriate delegations.
6. May include Authorising Engineer function.
7. DE safety rules and procedures to be applied, as far as reasonably practicable.

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ANNEX 4B – TASK AUTHORISATION AND CONTROL



The level at which approvals must be sought is determined by the budgetary and financial delegations in place at the time.

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CHAPTER 5 – THE CONCLUDING PHASE

501. Post-conflict activities tend to be focussed on normalisation, on the civil population and on repairing damage within the operational area. The scope of activities includes humanitarian relief, civil administration, demobilisation operations (including the return of prisoners of war (PW) and battlefield or environmental clearance. This Chapter sets out the responsibilities and tasks of the generic infrastructure management functional areas during the Concluding Phase.

SECTION I – INFRASTRUCTURE CONTROL PROCEDURES

502. **Permanent Joint Headquarters.** The Permanent Joint Headquarters (PJHQ) retains all its previous responsibilities for planning, guiding, approving, monitoring, co-ordinating and funding infrastructure requirements. Its co-ordinating role, in particular, is central to ensuring that decisions taken within the UK Base on the disposal or return of infrastructure assets are processed swiftly and with due regard to the many other factors that arise.

503. **Joint Task Force Headquarters and Joint Force Air and Logistics Component Headquarters.** J4 Infra staffs, through the Joint Task Force Headquarters (JTF HQ), continue to be an important link between drawdown units, Supporting Commands (SpC) and PJHQ.

504. **DrawDown Force.** By this phase, much of the construction, operation and maintenance of assets acquired by the deployed force could be the responsibility of civil contractors. It may, however, not be appropriate for security or other reasons for drawdown tasks to be done by them, and drawdown teams may need to be deployed. These should include those concerned with legal, infrastructure, lands and contractual matters. There may be a requirement for a significant Military Construction Force (MCF) to recover infrastructure or other assets.

505. **Infrastructure Planning – Permanent Theatres.** At the conclusion of an operation, a residual garrison may remain. In these circumstances, and on a date directed by the Chief of Joint Operations (CJO), infrastructure management responsibilities are transferred to PJHQ J8 (Estates), as has occurred in Cyprus and the Falkland Islands. Defence Estates (DE) then provide technical direction and appoint the technical authority.

SECTION II – PLANNING

506. **Theatre Infrastructure Development Plan.** This plan will have been concerned with Concluding Phase tasks for some time. It represents much thought and

consensus, and its detail must not lightly be cast aside under the more immediate pressures of drawdown activity. Factors that may be included in the Plan are:

- a. **Return or Disposal.** Establishing, in close liaison with the Defence Logistics Organisation (DLO) and others, the relative cost-effectiveness of returning assets to the UK Base, or selling or disposing of them in theatre.
- b. **Reconstitution.** Establishing, under the direction of the appropriate Capability Manager, those assets that need to be brought back to the standard to be ready for the next deployment. Reconstitution may be modified by improvements or additions made to the asset since it was deployed.
- c. **Sale or Gifting of Assets.** Establishing which new assets it may be more cost-effective to sell or gift to the local government. Advice and assistance from the Disposals Sales Agency (DSA) and/or MOD Financial Policy (Repayment) staffs may be appropriate.
- d. **Infrastructure Rationalisation.** Establishing, in close liaison with the Defence Lands Agent (DLA), a suitable programme for the hand-back of surplus sites and facilities as a means of limiting liability in terms of rental commitments, maintenance costs and utility charges.

507. **Outside Interests.** With a hand-over from UK military to UK civil support, there may be continuing Other Government Department (OGD) interest in developing local infrastructure and a wish by UK contractors to bid for the work that arises. It is a legitimate activity to facilitate such efforts, within the procedures in place at the time.

508. **Records and Evaluations.** The collection and collation of historic data is important not only to identify the correct lessons from the deployment, but also to serve as part of the audit trail in protecting MOD and UK national interests. This is another J4 Infra activity to be covered in the Theatre IDP, and should reflect guidance from PJHQ J8 and SpC.

SECTION III – PROJECT MANAGEMENT

509. **Continuity during Transition.** It remains important to ensure that technical advice and supervision is available to the remaining elements of the MCF and civilian contractors. Part of the drawdown may well be the hand-over of project sponsorship responsibilities to OGDs, UN or Host Nation (HN) agencies. A full understanding of the methodologies, procedures and standards on both sides is necessary to ensure a smooth transition.

SECTION IV – PROPERTY MANAGEMENT

510. **Hand-Over.** The proper out-processing (or hand-back) of land and property is important in ensuring that UK forces avoid paying rent for sites for longer than necessary and to avoid or minimise claims for damage. It also helps to maintain good relationships with landowners and local communities, and achieves economy by good accounting. Out-processing applies to all sites, however large or small, and whether leased or not, and with or without an identified owner. Detailed procedures are developed for each operation, but should always include:

- a. **Post-Occupation Report.** The outgoing lead unit must prepare a complete Post-Occupation Report that gives the full history of the UK occupation of the site and its current state. The history of the site in UK hands is obtained normally from the records described in paragraph 408. The state of the site should be assessed and set down for subsequent inclusion in the Post-Occupation Report by an experienced and qualified person from either RE, DE, or the Establishment Works Consultant (EWC).
- b. **Board of Officers.** The Board should relate the condition of the site to the pre-occupation survey, noting any improvements or damage caused by the UK's occupation.
- c. **Damage Claims.** On current operations, the Civil Secretary (Civ Sec) retains responsibility for conducting negotiations with landlords in respect of property damage claims, with appropriate advice from the DLA, when requested. However, the negotiation of dilapidation claims is a specialist area in which the professional knowledge and expertise of a DLA is required. In addition, responsibility for the negotiation of larger and/or more complex claims is likely to be transferred from the Civ Sec to DE on future operations. Civ Sec will retain responsibility for minor or isolated claims, subject to appropriate advice and guidance from DE.

SECTION V – FINANCE

511. **Finance Accounts and Audit.** Full guidance on finance accounts and audit matters is available through PJHQ J8 staff.

SECTION VI – CONTRACTS

512. **Civilian Contracts.** The withdrawal of a UK force could well change the conditions of many contracts. While all MOD contracts allow MOD to withdraw from them at short notice, it may well be in the UK's and HN's interests to consider other options in order to optimise the benefits of work already in place. Some options are:

- a. Termination of the contract at a natural break point.
- b. Extension of the contract to surmount, perhaps, a potentially awkward breakpoint during the drawdown process.
- c. Transfer of the contracts to other principals.
- d. Modification of the contract to reflect drawdown realities.

CHAPTER 6 – RELATED ISSUES

601. There are a variety of further issues that form the background to, and affect in detail, the management of infrastructure on operations.

SECTION I – PREPARATION FOR OPERATIONS

602. Peacetime is, of course, a period of preparation for operations. This section discusses those areas where experience has shown that emphasis on preparation would pay handsome dividends.

603. **Delegations – Financial and Contractual.** All normal delegations are passed down a strict chain where the delegating officer is bound to satisfy himself that those to whom he is delegating all or part of his powers have the appropriate training and experience. Where there are no personnel in theatre with the requisite qualifications, financial and contractual authority must necessarily be sought from those in the UK Base or elsewhere out of theatre, with the inevitable delays that result. It is, therefore, most important that those most likely to require delegations when deployed must in peace acquire the necessary documented training and experience that, when presented to the delegating authority, will enable that authority to delegate the powers appropriate to that individual and that deployment.

604. **Negotiating Experience.** Experience of commercial negotiations is a valuable adjunct to the qualifications required for the contractual delegations discussed above. Again, such experience needs to be properly documented and supported to be useful evidence. However, experience of UK-based negotiations may be of limited value when negotiations take place within a very different culture and under far from normal circumstances. Cultural awareness training could be one useful element of a negotiator's preparation for deployment.

605. **Pre-Deployment Courses.** In addition to their professional qualifications, infrastructure staff should attend relevant courses prior to deployment. These typically include courses on project sponsorship, investment appraisals, project management and contracts as well as AE and AP courses if appropriate.

606. **NATO/UN Familiarisation.** Most future deployments will be as part of a joint force in support of NATO, UN or coalition operations; working procedures for the management of infrastructure on such operations are now relatively well-established. Data sources are available on such procedures, and should be no more challenging than those of the corresponding financial, logistic or engineering activities.

SECTION II – CIVIL/MILITARY CO-OPERATION

607. **Definition.** Civil-Military Co-operation (CIMIC) is defined as ‘the resources and arrangements which support the relationship between NATO commanders and the national authorities, civil and military, and civil populations in an area where NATO military forces are or plan to be employed. Such arrangements include co-operation with non-governmental or international agencies, organisations and authorities’.¹

608. **Aim.** The aim of CIMIC is to establish and maintain the full co-operation of the civilian population and institutions within a Comd’s area of operations in order to create civil-military conditions which offer him the greatest possible moral, material and tactical advantages. Implicit in this aim is the denial of such advantages to an actual or potential adversary. The long-term purpose of CIMIC is to create and sustain the conditions which will support the achievement of a lasting solution to the crisis.

609. **Principles.** Principles which inform the planning of CIMIC tasks are:

Mission Primacy	Command Direction
Economy	Concentration
Cultural Awareness	Civil Benefit
Division of Responsibilities	Consent
Communication	Humanitarian Considerations
Transparency	Conditionality.

610. **Areas of Activity.** Some areas of activity on CIMIC operations are: services, infrastructure, labour, resources, the critical needs of local populations, and liaison with other agencies (including UNHCR, OXFAM, MSF, IOM, OSCE, ICRC, ICTY and DfID – see Glossary of Abbreviations).

611. **Current State of Development.** CIMIC is, within the UK forces, an activity in the process of being reintroduced as a formal and separate element of planning and tasking. UK CIMIC doctrine is being developed.

612. **Implications for Infrastructure Management on Operations.** Infrastructure and CIMIC planning and management are 2 long-term aspects of military operations which, in contrast, focus generally on short and medium-term issues. They have many similar concerns relating to the use of local resources, in the use, repair, operation and maintenance of existing facilities and in the construction of new infrastructure. Each

¹ AAP-6

may, therefore, be able to draw upon the other in maximising the impact of the requirements each identifies. It can, however, equally be that there is competition by each for scarce military and civilian resources. A well-developed and thought-through Infrastructure Development Plan (IDP) is a very useful aid in resolving such potential conflicts of interest.

SECTION III – HOST NATION SUPPORT

613. **Definition.** Host Nation Support (HNS) is the civil and military assistance rendered in peace, emergencies, crisis and war by a HN to the personnel or forces of an allied or friendly nation or organisation which are located on, operating in or transiting through the HN's territory. HNS can include almost every aspect of support required to sustain military operations. However, the type and extent of support that might be provided by a HN from its governmental and military resources can vary widely. At its most basic, it can cover the standard classes of supply (such as food and water, weapons, vehicles, petrol, oils and lubricants (POL), ammunition, accommodation and utilities), but can range to the use of equipment, services, training areas, ports and airfield facilities and other major items of the HN's infrastructure and resources. The basis of such assistance is commitments arising from the NATO Alliance, or from bilateral or multilateral agreements concluded between the HN, NATO organisations and the nation(s) having forces operating on the HN's territory.² CIMIC should not be confused with HNS.

614. **Management Authority.** Co-ordination of HNS should be pre-planned, wherever possible, and negotiated as a function of deliberate planning, or at an early stage of crisis action planning. In joint operations, the Joint Task Force Commander (JTFC) is likely to have PJHQ-delegated authority to implement³ and manage in-place HNS arrangements. These would address the provision of support, including the setting up of formal co-ordination structures and procedures, for ICR management, including the use of local contractors. In certain circumstances, the JTFC may also be authorised to negotiate new HNS arrangements (HNSA) with the host government's authorities within the Joint Operations Area (JOA). The JTFC would normally delegate detailed co-ordination of HNS to the Joint Force Logistics Component (JFLogC), with contract negotiation passing to JFLogC J4, J8 and J9 (CIMIC/Legal) staffs, as appropriate.

615. **Host Nation Support Arrangements.** Host Nation Support Arrangements (HNSA) is a generic term covering both the overarching inter-governmental co-operative documents of principle and the more detailed subordinate procedural documents (bilateral and multilateral HNSA) concerning the provision of HNS.

² AAP-6

³ Implementing HNS agreements within NATO is covered in Allied Logistic Publication (ALP) 12.

a. **Memorandum of Understanding.** The primary vehicle for facilitating the provision and receipt of support is a bilateral or multilateral HNSA. At the highest level, this would be an overarching document (normally a Memorandum of Understanding - MOU) that implies the intent or willingness of a HN government to support a Sending Nation's (SN) force, and sets out the principles upon which the provision of HNS is based. The MOU will normally include issues such as definitions, scope, applicability, HN and SN responsibilities, finance and claims. Jurisdiction may be covered in the MOU or in a separate Status of Forces Agreement (SOFA). The HNS MOU is normally concluded between the HN and SN, or between the HN and an international organisation such as NATO, the European Union (EU) or the UN. It is important that the status of UK based, overseas and local contractors supporting the deployed force is clearly defined in the MOU or SOFA.

b. **Technical or Implementing Arrangements.** Lower-level HNSA, such as Technical or Implementing Arrangements (TA or IA), can be developed under the auspices of an overarching MOU to deal with the detailed procedural and requirement aspects of HNS for the entire theatre of operations or for specific sites. These implement the principles of the MOU by outlining the UK Force's detailed support requirements and by describing how these resources will be provided and paid for. Where the HN is offering the use of infrastructure, it might be appropriate to attach a plan of the facility to the TA/IA, indicating those areas allocated to UK forces.

c. **Mutual Logistic Support Arrangement.** A Mutual Logistic Support Arrangement (MLSA) is an inter-governmental co-operative arrangement between the UK and its main allies that establishes the principles and provisions for the reciprocal transfer of logistic support, supplies and services. Although not an HNSA, this type of mechanism should always be considered in the planning process. MLSAs can take the form of either an overarching MOU covering the transfer of support for both operational and non-operational purposes on a world-wide basis, or MOUs for specific operations or exercises where no overarching document exists. MLSAs are particularly important in operations where an ally may have already extensive HNS or permanent facilities within the theatre of operations. Overarching MLSAs are implemented in the same way as HNSAs.

616. **Strengths.** The strengths of HNS are:

a. HNS is usually the most available resource, and HN governmental personnel have the best knowledge of its availability.

- b. HNS has considerable potential to reduce the overall military logistic effort and manpower required, and is usually the least costly method of support.
- c. HNS facilitates the development of mutual trust and confidence, meeting J3/CIMIC aims.
- d. The use of HNS usually creates a common provider which can assist in reducing potential competition between and within HNs and other nations.

617. **Weaknesses.** The weaknesses of HNS are:

- a. Delays due to the detailed justifications needed for HNS requirements, particularly during deliberate planning which may subordinate operational need to political/financial expediency.
- b. Changes in requirement need co-ordination through the HN.
- c. Language, social and cultural differences which may cause confusion and broader communication problems.
- d. Force protection is required, and the certainty and quality of supply can be problematic, where the HN uses contractors to provide HNS. Security and quality control must be provided within the force.

618. **Management Arrangements.** Management arrangements for developing HNS documents, including crisis planning, are in the Policy Paper on Future Management of HNS Planning and Implementation.⁴ Under this policy, PJHQ has delegated responsibility to implement existing overarching HNSA/MLSA or, where none exist, to develop new HNSA/MLSA for current operations. The Chief of Defence Staff (CDS) Directive issued for a particular operation will specify the scope of the delegation. The HNSA will be the key enablers that allow the JFLogC HQ, when deployed, or in its absence the JTFHQ (or Supporting Command (SpC) - deployed logistic staffs where only one Service is involved) to activate appropriate supply chains at the operational level and below. For joint operations, the JFLogC HQ will co-ordinate in-theatre HNS management on a national basis; where the UK involvement in an operation is limited such that this HQ is not deployed, the J1/J4 staffs of the JTFHQ will fulfil this role.

619. **Multinational Co-operation.** In a multinational environment, particularly for NATO and EU operations, the multinational force commander is likely to be involved in co-ordinating and prioritising HNS requirements and even in negotiating the provision of HNS with the HN on behalf of his force in order to achieve greater

⁴ D/HQDLO/516 dated 22 Apr 99.

flexibility, mobility and efficiency. In such circumstances, the UK may be asked to accede to a NATO/HN MOU in order to receive support for its forces and to develop a bilateral TA and/or joint IA with the HN. The following documents provide the direction and mechanisms for HNS in a multinational environment: (NATO) MC334/1 – NATO Policy & Principles for HNS; AJP-4.5 – Allied Joint Host Nation Support Doctrine and Procedures; and EU Concept for HNS; and, for non-NATO operations or exercises, JDP 1/01 – Multinational Logistic Planning.

620. **Avoidance of Multinational Competition.** In multinational operations, it is essential to ensure that nations do not compete for the same resources. Co-operation should prevail over competition and, for NATO-led operations, the Multinational Joint Logistic Centre (MJLC) – when deployed – will co-ordinate SN forces Strategic Reconnaissance visits on a combined and joint basis to ensure openness and visibility in the sharing of infrastructure and installation facilities. The Strategic Reconnaissance is important to establish the precise nature of the HN infrastructure and should be undertaken early on in the planning process to assess availability and assist in the securing of facilities. PJHQ is responsible for co-ordination of single-Service HNS requirements, and its J4 staff will lead in the Strategic Reconnaissance process accompanied, where appropriate, by JTFHQ J4 and SpC staffs.

621. **Crisis Planning.** During crisis planning, PJHQ aggregates single-Service requirements and TAs. PJHQ HNS staff lead in the Strategic Reconnaissance accompanied, where appropriate, by JTFHQ J4 and FLC staffs. The aim is to establish quickly intergovernmental and contractual HNS links and then pass arrangements into the hands of JTFHQ/JFLogC HQ; in turn, they co-ordinate and monitor HNS with the support of Civil Affairs staff, as necessary.

SECTION IV – CIVIL CONTRACTORS ON DEPLOYED OPERATIONS

622. **Contracting for Civil Capability.** The use of contractors on deployed operations (CONDO) is a logical extension of extant arrangements with industry within the UK Base, and the policy for their employment is currently under development. The aim of CONDO is to free military personnel for employment where their military skills are most needed. It is a potentially effective force multiplier, in recognising that industry could provide a wide range of logistic support in carefully specified and defined circumstances. However, the CONDO concept does not aim to replace core military capability in its entirety as this could result in unacceptable military risk. The main sources of commercial capability are: those deployed from UK, those integral to the HN, and those from third-party nations who may have a common boundary with the HN. In all cases, the relationships, inputs and outputs will be governed by a formal contract drawn up in accordance with UK regulations, or in accordance with NATO-generated regulations which may be those of a lead nation.

The following paragraphs address some of the major issues that will need to be resolved to ensure the cost-effective use of that capability.

623. **Appropriate Circumstances.** The CONDO Vision Statement notes that, in the medium-term (or sooner if legal obstacles can be overcome), pressure on deployable logistic support and assets of all 3 Services is reduced through enabling competent commercial partners to provide a proportion of that support such that it is:

- a. Assured for the commander.
- b. Profitable for the contractor.
- c. As safe and secure as possible for the work force.

All three tests must be satisfied to confirm the concept's appropriateness.

624. **Contractor Functions.** All commercial functions bought in must ensure reliable and committed support to the deployed force with no unacceptable degradation in its combat effectiveness. The level of confidence that is so required is best created in long-term relationships, perhaps under a partnering-type approach. As confidence grows on both sides, the boundaries and parameters of contractorisation will become better understood. The number of functions open to contractors will grow and could see contractors becoming involved in contingency planning. The key factors in the successful deployment of CONDO are long-term, well-founded mutual trust and understanding between the military and industry.

625. **Status of Contractors.** The status of contractors on operations needs to be codified to meet the 2 main requirements below which are currently under study.

- a. **Jurisdictional Protection.** Contractors' staff overseas require jurisdictional protection to avoid unnecessary and unwelcome exposure to the jurisdiction of the state in which operations are taking place.
- b. **Civil/Military Discipline.** Military personnel and contractors' staff may well be accommodated and employed for many months in the same location. Currently, each would be under very different codes of discipline which could adversely compromise both the relations between the parties and the integrity of physical security of the site.

The spectrum of legal difficulty can be illustrated thus:

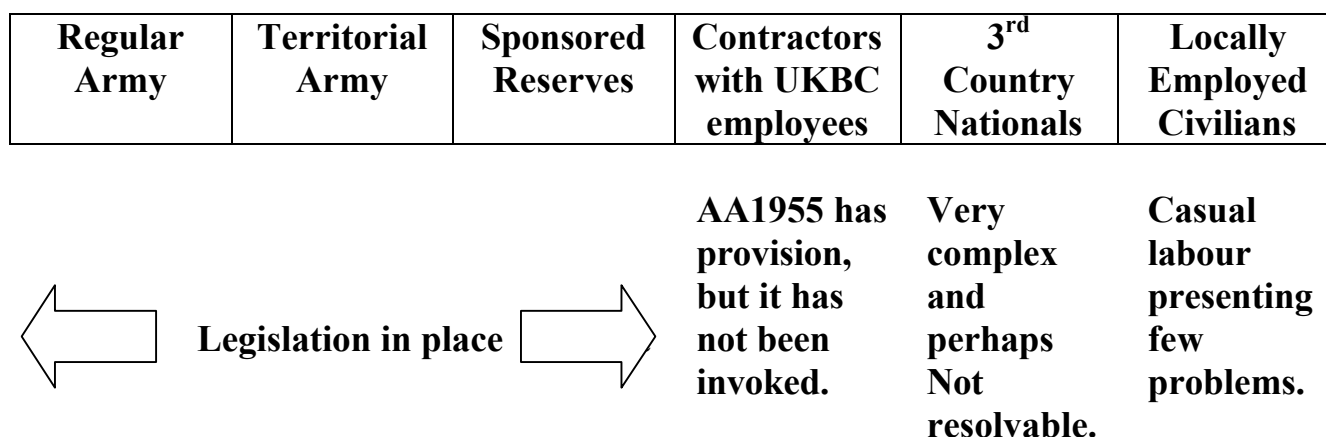


Figure 6.1 – Civil/Military Discipline

626. **Focuses for Advice.** Policy, legal and other matters are under consideration by the CONDO Project Board within the Defence Logistics Organisation (DLO) HQ. Practical issues such as areas and types of work which can be considered, contracting issues and supervisory matters are the province of the equipment capability staff, RE, Defence Estates (DE) and the Defence Procurement Agency (DPA).

SECTION V – MULTINATIONAL AND UN ASPECTS

627. The following paragraphs set out, for quick reference only, the major infrastructure factors to be considered when involvement in multinational and UN operations is likely; the authoritative working sources are given. Experience of these types of operations has demonstrated that:

- a. Planning can often be tortuous and lengthy. Political factors can obscure operational requirements.
- b. Great care is required to retain a clear view of what operational demands are being placed upon infrastructure assets and how such demands may be best satisfied. The best may well be politically expedient.
- c. Commitments by nations in Lead Nation or Role Specialist Nation roles can be delivered in a variety of ways, some unexpected.

628. **NATO Operations.** Allied joint logistic doctrine is set out in AJP-4 and includes the principles for co-operative arrangements within the Alliance. AJP-4 should be read in conjunction with JWP 4-00, Chapter 9 which addresses multinational and UN logistics from a UK perspective. There are many options for the management of logistics and associated infrastructure matters within a NATO operation; it is the responsibility of PJHQ J4 staff to negotiate and articulate them.

629. **Multinational Operations.** Logistic and infrastructure matters for multinational operations will probably be modelled closely upon NATO concepts. Because of the lack of formal and well-established practices and procedures, it will be particularly important to ensure that matters of standardisation, compatibility and cost-sharing are well-established from the outset. Once more, it is the responsibility of PJHQ J4 staff to negotiate and articulate them.

630. **UN Operations.** The extent of infrastructure support required from or by the UK as a Troop Contributing Nation (TCN) will be negotiated prior to deployment into a theatre, and will be reflected in an MOU. Each MOU is tailored to a particular operation and represents the basis of the reimbursement by or to the TCN. It follows that requirements for infrastructure assets and services need to be very clearly expressed and their costs precisely established by PJHQ J4.

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GLOSSARY OF TERMS AND DEFINITIONS

Authorised Person

A person appointed by the Authorising Engineer of appropriate discipline on behalf of the Commanding Officer/Head of Establishment to be responsible for the implementation and operation of Rules and Procedures appropriate to safe systems of work. (JWP 4-05)

Authorising Engineer

An Engineer whose appointment includes the responsibility for implementing and monitoring particular Rules and Procedures appropriate to safe systems of work. (JWP 4-05)

Authority – Contractual

The delegated power to commit the MOD to expenditure on projects that have both financial authority and have passed requirements scrutiny. (JWP 4-05)

Authority – Financial

The delegated power to commit funds to approved projects that have been subject to requirements scrutiny. (JWP 4-05)

Authority – Requirements Scrutiny

The delegated power to scrutinise projects to ensure that they meet the requirements in the endorsed Statement of Requirement. (JWP 4-05)

Budget Management

The management of allocated funds within a budgetary context. No authority over such funds is implied. (JWP 4-05)

Civil-Military Co-operation

The resources and arrangements which support the relationship between commanders and the national authorities, civil and military, and civil populations in an area where military forces are or plan to be employed. Such arrangements include co-operation with non-governmental or international agencies, organisations and authorities. (AAP-6)

Combined

Activities, operations and organisations in which elements of more than one nation participate. (AAP-6)

Combined Logistic Support

The pooling of specified resources by member nations for use by NATO nations as decided by a co-ordinating authority. (AAP-6)

Commonality

The state achieved when the same doctrine, procedures or equipment are used.
(AAP-6)

Compatibility

The capability of 2 or more items or components of equipment or material to exist or function in the same system or environment without mutual interference. (AAP-6)

Co-ordinating Authority

The authority granted to a commander or individual assigned responsibility for co-ordinating specific functions or activities involving forces of 2 or more countries or commands ... He has the authority to require consultation between the agencies involved or their representatives, but does not have the authority to compel agreement.
(AAP-6)

Estate

The military estate is the collective term covering facilities, infrastructure and non-tactical engineering works to assist the Armed Forces to live, move and function. It includes the requirement to provide land, utilities, services and structures as well as the maintenance or repair of existing facilities. (JWP 4-05)

Estimated Annual Value

The estimated annual value of Works for a given estate, less fees and VAT.
(JWP 4-05)

Estimate

A logical process of reasoning by which a commander considers all the circumstances affecting the military situation and arrives at a decision as to the course of action to be taken in order to accomplish the mission. (AAP-6)

Host Nation

A nation which receives the forces and/or supplies of Allied nations and/or NATO organisations to be located on, or to operate in, or to transit through its territory.
(AAP-6)

Host Nation Support

Civil and military assistance rendered in peace, crisis and war by a Host Nation to NATO and/or other forces and NATO organisations which are located on and operating on/from or in transit through the Host Nation's territory. The basis of such assistance is commitments arising from the NATO Alliance or from bilateral or multilateral agreements concluded between the Host Nation, NATO organisations and the nation(s) having forces operating on the Host Nation's territory. (AAP-6)

Infrastructure

A term generally applicable for all fixed and permanent installations, fabrications or facilities for the support and control of military forces. (AAP-6)

Infrastructure - Expeditionary Campaign

That infrastructure and equipment required to provide efficient and effective basic support functions to troops deployed on expeditionary operations in all types of climate, in static locations, for extended periods. (JWP 4-05)

Infrastructure - Operational

Infrastructure required for the general support of a deployed force within a Theatre of Operations. It is controlled by the JTFHQ who would usually delegate the detailed J4 staff work to the JFLogC HQ. Operational infrastructure has a planned life of between 30 days to 5 years. (JWP 4-05)

Infrastructure - Strategic

Infrastructure required to support the strategic base. (JWP 4-05)

Infrastructure - Tactical

Infrastructure required for the direct support of a manoeuvre formation. It is controlled by the appropriate RE HQ within a deployed formation and has a planned life of less than 30 days. (JWP 4-05)

Infrastructure Development Plan

A forward-looking plan covering all phases of an operation which charts the required and/or agreed infrastructure requirements, implementation methods and means for a campaign, theatre or location. (JWP 4-05)

Infrastructure Engineering

The application of engineering skills to the management, planning, design, construction, repair, operation and maintenance of infrastructure. (JWP 4-05)

Interchangeability

A condition which exists when 2 or more items possess such functional and physical characteristics as to be equivalent in performance and durability, and are capable of being exchanged one for the other without alteration of the items themselves, or of adjoining items, except for adjustment, and without selection for fit and performance. (AAP-6)

Interoperability

The ability of systems, units or forces to provide services to and accept services from other systems, units or forces and to use the services so exchanged to enable them to operate effectively together. (AAP-6)

Joint

Connotes activities, operations, organisations etc in which elements of more than one Service of the same nation participate (when all Services are not involved, the participating Services shall be identified - eg. Joint Army-Navy). (AAP-6)

Lead Nation

A nation accepting responsibility for procuring and providing a broad spectrum of supply and services for all or part of a multinational force package or for assuming lead role in a task-organised multinational organisation. (SHAPE MJLC Study)

Military Construction Force

The military unit(s) and headquarters tasked to carry out Works. (JWP 4-05)

Military Design Authority

The military officer, normally a Chartered Engineer or other professional specialist, who is responsible for ensuring the safe and efficient design of the Works. (JWP 4-05)

Military Works Area

A MWA is formed when conditions dictate that normal peacetime estate procedures be subordinated to the immediate operational plan. In a MWA a designated RE operational commander will be appointed with responsibility for all infrastructure engineering, although the works may be carried out by either RE units, directly employed labour under RE supervision, or by contractors. (JWP 4-05)

Multinational Integrated Logistic Support

Two or more nations agree to provide logistic assets to a multinational logistic force under the operational control of a NATO commander for the logistic support of the multinational force. (NATO)

Planning Supervisor

The appointment with overall responsibility to the client for co-ordinating the Health and Safety aspects of the design and planning phase of a project. (JWP 4-05)

Project Management

The management of the design, construction and commissioning of projects on behalf of the Project Sponsor. (JWP 4-05)

Project Sponsor

The individual responsible for co-ordinating a project, who is the representative of the customer, has specific delegated financial authority, and is personally accountable for the achievement of cost, time and quality objectives and value-for-money. (JWP 4-05)

Property Management

Minor new construction, alterations, refurbishment, operation or maintenance estimated to cost £300K or less (including fees and VAT). (JWP 4-05)

Property Manager

The military officer or civil servant appointed to carry out Property Management on behalf of the Commander or Head of Establishment, normally with a financial delegation from the Commander, Head of Establishment or his representative. (JWP 4-05)

Role Specialist Nation

A nation accepting responsibility for procuring and providing a particular Class of Supply or service for all or part of the multinational force. (NATO)

Rough Order of Cost

An initial estimate of design and planning, construction, administration and other costs which are likely to have to be met in order to complete the project(s) concerned. (JWP 4-05)

Sending Nation

A nation sending or participating in the sending of deploying national forces and/or national components of multinational forces. (NATO)

Senior Infrastructure Staff Officer

The SISO is a suitably qualified and experienced officer normally a senior specialist engineer from Military Engineer Services or an RAF Infrastructure Organisation Officer. He is responsible for coordinating all infrastructure planning from the Sea, Land and Air (when appropriate) Components, and is the link with the planning of other involved nations. He advises the JTFC on these and associated matters, such as meeting Civil Affairs' infrastructure concerns. (JWP 4-05)

Tactical Property Manager

An RAF officer deployed to be the Property Manager on a Deployed Operating Base. (JWP 4-05)

Technical Control

The control of engineering, finance and contract standards and procedures associated with the design, construction, repair, operation, maintenance and disposal of infrastructure. (JWP 4-05)

Works/Works Services

Building or engineering work which creates, alters or demolishes infrastructure on the Estate. The scope covers the maintenance of extant facilities. It is not applied to engineer work directly related to a tactical situation. (JWP 4-05)

GLOSSARY OF ABBREVIATIONS

AA	Army Act
ADC	Assistant Director Contracts
AE	Authorising Engineer
AJP	Allied Joint Publication
AP	Authorised Person
APOD (or SPOD)	Air (or Sea) Point of Disembarkation
Bde	Brigade
CCF	Civilian Construction Force
CDL	Chief of Defence Logistics
CDM	Construction (Design and Management) Regulations
CDS	Chief of the Defence Staff
CIMIC	Civil-Military Co-operation
Civ Sec	Civil Secretary
CJO	Chief of Joint Operations
Comd	Commander
CONDO	Contractors on Deployed Operations
CRE (A)	Commander Royal Engineers (Airfields)
CRE (Wks)	Commander Royal Engineers (Works)
CV	Curriculum Vitae
DCI	Defence Council Instruction
DE	Defence Estates
DfID	Department for International Development
DFS	Defence Fire Service
DLA	Defence Lands Agent
DLO	Defence Logistic Organisation
DOAST	Desired Order of Arrival Staff Table
DOB	Deployed Operating Base
DPA	Defence Procurement Agency
DSA	Defence Sales Agency
DTI	Department of Trade and Industry
E&LSC	Engineer and Logistic Staff Corps RE (V)
EAV	Estimated Annual Value
ECI	Expeditionary Campaign Infrastructure
EinC(A)	Engineer in Chief (Army)
Engr	Engineer
EU	European Union
EWG	Establishment Works Consultant

FET	Force Element Table
FLC	Front-Line Command
FMB	Forward Mounting Base
Hd Fin Sec	Head Financial Secretariat
HN	Host Nation
HNS	Host Nation Support
HNSA	Host Nation Support Arrangements
HQ	Headquarters
IA or TA	Implementing or Technical Arrangements
ICR	In-Country Resource(s)
ICRC	International Committee of the Red Cross
ICTY	International Criminal Tribunal for the Former Yugoslavia
IDP	Infrastructure Development Plan
Infra	Infrastructure
IOM	International Organization for Migration
JDCC	Joint Doctrine & Concepts Centre
JDP	Joint Doctrine Publication
JFAC	Joint Force Air Component
JFLC	Joint Force Land Component
JFLogC	Joint Force Logistic Component
JFMC	Joint Force Maritime Component
JOA	Joint Operations Area
Jt Comd	Joint Commander
JTF	Joint Task Force
JTFC	Joint Task Force Commander
JTFHQ	Joint Task Force Headquarters
JTTP	Joint Tactics, Techniques and Procedures
JS	Joint Service
JSP	Joint Service Publication
JWP	Joint Warfare Publication
LAND	Land Command
LOC	Line of Communication

MCF	Military Construction Force
MDA	Military Design Authority
MES	Military Engineer Services
MES (Wks)	Military Engineer Services (Works)
MJLC	Multinational Joint Logistic Centre
MLSA	Mutual Logistic Support Arrangement
MOB	Main Operating Base
MOD	Ministry of Defence
MOU	Memorandum of Understanding
MSF	Médecins Sans Frontières
MWA	Military Works Area
MWF	Military Works Force
NATO	North Atlantic Treaty Organisation
NCC	National Contingent Command
NGO	Non-Governmental Organisation
NSE	National Support Element
OGD	Other Government Department
O&M	Operation and Maintenance
ORBAT	Order of Battle
OSCE	Organization for Security and Co-operation in Europe
OXFAM	Oxford Committee for Famine Relief
PJHQ	Permanent Joint Headquarters
POL	Petroleum Oils and Lubricants
PROM	Property Manager
PROPMAN	Property Management
PW	Prisoners of War
RAF	Royal Air Force
RAFIO	RAF Infrastructure Organisation
RE	Royal Engineers
RFA	Royal Fleet Auxiliary
RLC	Royal Logistic Corps
RM	Royal Marines
RN	Royal Navy

SGD	Surgeon General's Department
SHEF	Health & Safety, Environmental Protection and Fire Safety
SISO	Senior Infrastructure Staff Officer
SN	Sending Nation
SOFA	Status of Forces Agreement
SOR	Statement of Requirement
Sp	Support
SpC	Supporting Command(s)
SPOD (or APOD)	Sea (or Air) Point of Disembarkation
SRP	Safety Rules and Procedures
SSW	Safe Systems of Work
STC	Strike Command
STRE	Specialist Team Royal Engineers
TA or IA	Technical or Implementing Arrangements
TacPROM	Tactical Property Manager
TCN	Troop Contributing Nation
TOO	Theatre of Operations
UIN	Unit Identification Number
UK	United Kingdom
UN	United Nations
UNHCR	United Nations High Commissioner for Refugees
UOR	Urgent Operational Requirement
WSM	Works Service Manager