

Joint Publication 4-03



Joint Bulk Petroleum and Water Doctrine



23 May 2003



PREFACE

1. Scope

This publication sets forth principles and establishes doctrine for bulk petroleum and water support of US military operations. This publication will aid combatant commanders in both planning and training for joint operations. It will also serve to focus training of personnel involved in bulk petroleum and water operations and provide the Services guidance for organizing, training, and equipping forces that provide bulk petroleum and water support.

2. Purpose

This publication has been prepared under the direction of the Chairman of the Joint Chiefs of Staff. It sets forth doctrine to govern the joint activities and performance of the Armed Forces of the United States in joint operations and provides the doctrinal basis for US military involvement in multinational and interagency operations. It provides military guidance for the exercise of authority by combatant commanders and other joint force commanders (JFCs) and prescribes doctrine for joint operations and training. It provides military guidance for use by the Armed Forces in preparing their appropriate plans. It is not the intent of this publication to restrict the authority of the JFC from organizing the force and executing the mission in a manner the JFC deems most appropriate to ensure unity of effort in the accomplishment of the overall mission.

3. Application

a. Doctrine and guidance established in this publication apply to the commanders of combatant commands, subunified commands, joint task forces, and subordinate components of these commands. These principles and guidance also may apply when significant forces of one Service are attached to forces of another Service or when significant forces of one Service support forces of another Service.

b. The guidance in this publication is authoritative; as such, this doctrine will be followed except when, in the judgment of the commander, exceptional circumstances dictate otherwise. If conflicts arise between the contents of this publication and the contents of Service publications, this publication will take precedence for the activities of joint forces unless the Chairman of the Joint Chiefs of Staff, normally in coordination with the other members of the Joint Chiefs of Staff, has provided more current and specific guidance. Commanders of forces operating as part of a multinational (alliance or coalition) military command should follow multinational doctrine

and procedures ratified by the United States. For doctrine and procedures not ratified by the United States, commanders should evaluate and follow the multinational command's doctrine and procedures, where applicable and consistent with US law, regulations, and doctrine.

For the Chairman of the Joint Chiefs of Staff:

A handwritten signature in black ink, appearing to read "George W. Casey, Jr.", written in a cursive style.

GEORGE W. CASEY, JR.
Lieutenant General, USA
Director, Joint Staff

SUMMARY OF CHANGES

REVISION OF JOINT PUBLICATION 4-03

This publication revises Joint Publication 4-03, dated 25 July 1995. The following summarizes the changes resulting from this revision.

- **Expands the scope of the publication to establish principles and doctrine for water, as well as bulk petroleum support of US military operations**
- **Expands the principles of bulk petroleum logistics to include the use of contractor support to meet peacetime and wartime requirements**
- **Includes, as principles of bulk petroleum logistics, a discussion of the lead nation and role special nation concepts as they apply to the support of a multinational force**
- **Adds the responsibilities for a subarea petroleum office, established by the joint petroleum office, to fulfill petroleum logistics requirements in support of the joint force commander (JFC)**
- **Delineates combatant commander responsibilities with respect to the single fuel concept**
- **Expands the chapter on petroleum stockage management to include guidance on quality control and environmental concerns**
- **Adds a complete, chapter-length discussion, with support requirements appended, on the principles of bulk water purification, storage, and distribution**

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EXECUTIVE SUMMARY COMMANDER'S OVERVIEW

- Discusses Bulk Petroleum and Water Support Concepts and Principles
 - Outlines Theater Support Concepts
 - Explains the Concept of Integrated Materiel Management
 - Describes Planning for Bulk Petroleum and Water Support
 - Discusses Host-Nation Support
 - Outlines Responsibilities at Each Level of Authority
 - Describes Petroleum Stockage Management
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Bulk Petroleum and Water Basic Concepts and Principles

Providing forces with the right fuel, in the right place, and at the right time, is the function of petroleum logistics.

Although **bulk petroleum** is a common item of support, it **presents a significant logistic challenge** in its movement, storage, and distribution that must be met for sustaining joint operations. **Bulk petroleum logistic tasks vary** depending on whether the theater is mature or immature and whether force employment is single-Service, joint, or multinational. However, basic bulk petroleum doctrinal concepts remain essentially unchanged. Any viable bulk petroleum support concept must incorporate the principles of **standardization, flexibility, and interoperability**.

Supplying forces with water in the right quantities, at the right place at the right time is the function of water support.

The basic concept of tactical bulk water support is to source or produce water as close to the user as possible. This requires proper planning of the water point selection for bulk water, if required, and purification, storage, and distribution of bulk water.

All commanders and their staffs must be concerned about maintaining water support to allow completion of the unit's mission. To provide the most effective use of water stocks and equipment, water planners must be familiar with Service, Defense agencies, and combatant commander water assets and responsibilities.

Effective management of bulk petroleum requires synchronizing petroleum war reserve and peacetime operating stocks as well as resupply variables so that supported combatant commanders are confident that fuel will be available when needed.

Bulk petroleum inventory consists of **petroleum war reserve stocks** and **peacetime operating stocks**. Both inventories are sized based on a concept of having enough fuel on hand until resupply can be assured. This approach **optimizes stock levels to maintain an acceptable degree of support and sustainability** across the range of military operations.

The combatant commander has the predominant fuels responsibility within a theater, and this responsibility is discharged by the Joint Petroleum Office (JPO). The JPO works in conjunction with its Service components, subarea petroleum offices, and the Defense Energy Support Center (DESC) to plan, coordinate, and oversee all phases of bulk petroleum support for US forces employed or planned for possible employment in the theater.

Theater Support Concepts

Theater bulk petroleum operations revolve around a push-pull supply system.

Land-based customers request fuel from the Army component's theater support command or another Service component or agency assigned as the lead Service for bulk fuel support. These organizations schedule movement of product forward from the corps support area based on a combination of available storage and anticipated customer demands. **Sea-based customers** essentially perform the same functions, but interface more directly with terminal operators at Defense Fuel Support Points. **The basic stockage concept in theater operations is to have sufficient storage to support the most demanding operation plans**, and keep the storage at or near maximum authorized levels, while using available transportation assets as efficiently as possible.

Fuel support systems can be tailored to meet the requirements of mature and immature theaters as well as military operations other than war.

In a mature theater, the established infrastructure supports the supply and distribution of bulk petroleum. Stocks are moved from secure military or commercial sources to forward areas and terminals as demand or plans require. Pipeline is the preferred method of inland fuel distribution. **In an immature theater**, many support assets are not available. Bulk petroleum may need to be received via joint logistics over-the-shore operations or by Aerial Bulk Fuel Delivery System. As theater requirements expand, distribution system assets may be installed depending on the volume of requirements, the expected duration of the employment, and the type of operation (e.g., foreign humanitarian assistance or peacekeeping). Mobility, rapid response, and tight control of both petroleum and water assets and inventories is required across the range of military operations. Liquid logistic

requirements will vary, and each situation will be unique. Petroleum and water requirements are Service responsibilities, each Service has the capability to store fuel and purify and store water. When Service water requirements exceed organic Service capabilities, the US Army is the Department of Defense (DOD) Executive Agent designated to support that Services' requirement.

Concept of Integrated Materiel Management

The concept of integrated materiel management underlies the principles in Joint Bulk Petroleum Doctrine.

The **Defense Logistics Agency (DLA)** is the integrated materiel manager for bulk petroleum. The **DESC** is DLA's designated agent to carry out these responsibilities. **DESC** is responsible for the coordinated procurement, storage, and non-tactical distribution of bulk petroleum products to the Services as well as ownership of fuel in bulk storage and facility maintenance and repair funding responsibilities for capitalized Military Services' installations.

To facilitate practical and responsible decisions that ensure expeditious delivery of fuel products to each Service, **DESC** established **DESC Regional Offices**. In general, **DESC Regional Offices** coordinate delivery orders with industry, resolve logistic problems, supply emergency products, perform quality surveillance and management, coordinate and fund maintenance and repair projects, and assist the **JPO** in petroleum logistics planning.

Planning for Bulk Petroleum and Water Support

The supported combatant commander's Joint Petroleum Office is responsible for the overall planning of petroleum and water logistic support for joint operations within their area of responsibility.

The **JPO** handles the planning responsibility for petroleum matters; however, water planning matters are handled as prescribed by the combatant commander's logistics directorate (J-4). The planning conducted at this level plays a critical role in crisis action and deliberate planning. It yields a significant portion of the logistics annex, petroleum appendix, and water appendix of virtually all plans and orders. This level of planning focuses on specifying the concept of bulk petroleum and tactical water support, delegating responsibility, and identifying reports. The **JPO** establishes a **subarea petroleum office** when and where one is needed to support specific requirements. The order establishing a subarea petroleum office specifies the mission and additional instructions needed to execute the mission.

Plans should consider at least the following: the mission, fuel and water requirements, fuel quality surveillance, infrastructure, equipment,

support units, interoperability of fuel transfer systems, sustainability and survivability, theater-specific factors, and threat environment.

Host-Nation Support for Bulk Petroleum

Combatant commanders should make maximum use of host-nation and theater support contracted capabilities to meet peacetime and wartime requirements.

Host-nation support and theater support contracted capabilities are especially critical in contingencies when logistic support from US units or equipment may not be readily available or combat forces have outpaced integral logistic capability. The type and amount of fuel support provided should, if possible, be specified in **signed agreements** and **included in logistic plans** of all nations concerned. The amount of support, civil or military, a host nation can provide depends on its national laws, industrial capability, and willingness to give such support.

Responsibilities for Bulk Petroleum

Bulk petroleum management responsibilities are assigned to the Department of Defense, Chairman of the Joint Chiefs of Staff, combatant commands, Defense agencies, and Services.

Each level of authority has specific responsibilities to ensure bulk petroleum and water support is effectively and efficiently provided to US military forces across the range of military operations. The **Under Secretary of Defense for Acquisition, Technology, and Logistics** (USD(AT&L)) is responsible for establishing policies for management of bulk petroleum stocks and facilities and providing guidance to other DOD agencies, the Joint Staff, and Services. The **Deputy Under Secretary of Defense for Logistics and Materiel Readiness** will serve as the central administrator for energy management and has integrated materiel management oversight responsibility for fuel products. The **Under Secretary of Defense (Comptroller)**, in coordination with USD(AT&L), is responsible for establishing financial policies and guidance for management of bulk petroleum products. The **Chairman of the Joint Chiefs of Staff** is primarily focused on wartime support and coordinates with the Department of Defense, Services, and the combatant commands to resolve petroleum issues. The **Joint Staff J-4** is the primary agent of the Chairman of the Joint Chiefs of Staff for all bulk petroleum matters. The bulk petroleum mission of the **Commander, US Transportation Command**, is to develop long-range plans for petroleum support of the intertheater mission and contingency operations worldwide. The **combatant commanders** are responsible to ensure fuel support is provided to combat forces to accomplish those missions assigned by the President and Secretary of Defense. The **Director, DLA**, is responsible for meeting the petroleum support requirements of the combatant commands and Services. These functional responsibilities have been delegated to the **Director**,

DESC, and include procurement, ownership, quality surveillance, accountability, budgeting, and non-tactical distribution of bulk petroleum stocks to the point-of-sale. Each Service has its own niche in providing unique petroleum support and is responsible for providing support, as specified by competent authorities, to other Services. Once fuel is delivered to a Service, that Service is then responsible for its further distribution and management.

The overall intent of stockage management is to maintain optimal inventories of specific products at each location to safely support operational requirements.

Petroleum Stockage Management

DOD bulk petroleum inventories consist of **petroleum war reserve stocks** and **peacetime operating stocks**. These two categories of inventory guide the sizing of the stock levels to permit immediate and short-term operations across the range of military operations. Their purpose is to sustain such operations until resupply can occur. A worldwide **inventory management plan** (IMP) is developed and issued annually by DESC in coordination with Services and combatant commands. The IMP identifies the required inventory levels and the amount of fuel by location that is stocked to cover those requirements.

There are two key joint petroleum reports that are submitted annually or more frequently at the direction of the Chairman of the Joint Chiefs of Staff. These reports, called the **Bulk Petroleum Contingency Report and the Bulk Petroleum Capabilities Report (POLCAP)**, are submitted by the combatant commanders' JPOs. The information is forwarded by the DOD components to the DESC for compilation.

CONCLUSION

This publication sets forth principles and establishes doctrine for bulk petroleum and water support of US military operations. This publication will aid combatant commanders in both planning and training for joint operations. It will also serve to focus training of personnel involved in bulk petroleum and water operations and provide the Services guidance for organizing, training, and equipping forces that provide bulk petroleum and water support.

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CHAPTER I

PRINCIPLES OF BULK PETROLEUM LOGISTICS

"No doubt you have had forwarded to you the late regulation of our generous Congress relative to the delivery and distribution of fuel and straw to the garrisons . . . The allowance falling so far short of what is really necessary, I am at a loss to determine what steps to pursue. Do let me know what plan you adapt as I am confident the proportion of fuel is so small that the soldiers cannot subsist on it."

Capt Meriwether Lewis, Corps of Discovery, 1800

1. General

a. Although bulk petroleum is a common item of support, it presents a significant logistic challenge in its movement, storage, and distribution that must be met for sustaining joint operations. **Providing forces with the right fuel, in the right place, and at the right time, is the essence of petroleum logistics.** It involves determining peacetime and wartime requirements, contracting and allocating product, arranging for bulk storage, moving products forward to and within the theater, ensuring quality control, issuing and accounting for the fuel, and maintaining distribution equipment and facilities.

b. **Joint bulk petroleum doctrine provides the framework for fuels support across the range of military operations.** Together with petroleum policy, the doctrine guides development of procedures for various types of fuel operations. Petroleum doctrine is a subset of logistic doctrine and, therefore, possesses all the innate principles associated with logistically supporting joint operations. However, **petroleum doctrine focuses on a single demanding commodity with Service commonality, commercial application, and worldwide usage.** It is this focused perspective that supports the application of specific bulk petroleum concepts.

2. Basic Concepts of Joint Bulk Petroleum Operations

Bulk petroleum logistics is an established joint operation with the **Military Services developing complementary tactical distribution systems and the Defense Logistics Agency (DLA) providing products to the combatant commands and Services.** Bulk petroleum logistic tasks vary depending on whether the theater is mature or immature and whether force employment is single-Service, joint, or multinational. However, basic bulk petroleum doctrinal concepts, as listed below, remain essentially unchanged.

3. Principles

Bulk petroleum is common to both commercial and military operations. It requires special handling and storage and has a demand significantly larger than other supply classes. For these reasons, **any viable support concept must incorporate the principles of standardization, flexibility, and interoperability** (see Figure I-1).

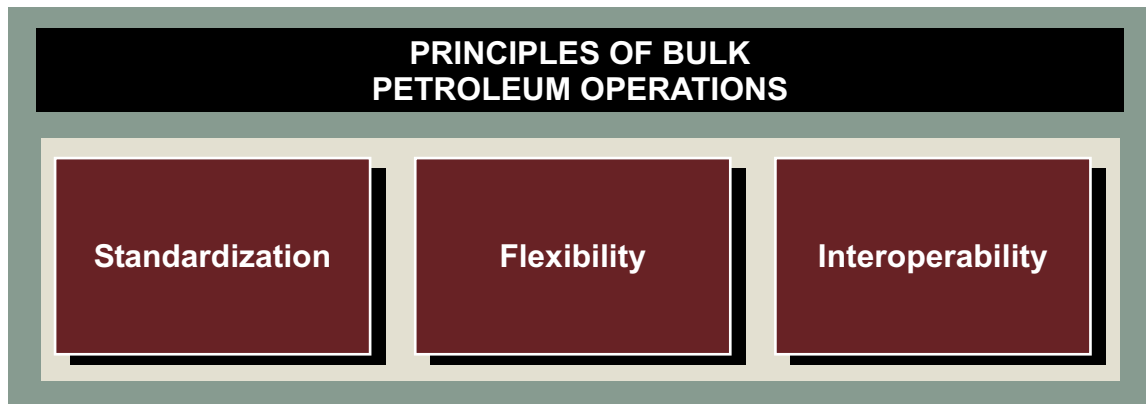


Figure I-1. Principles of Bulk Petroleum Operations

a. **Standardization.** The Department of Defense (DOD) components should **minimize the number of bulk petroleum products that must be stocked and distributed, plan to use fuels readily available worldwide, and minimize the military-unique characteristics of DOD fuels.** The determination of required fuel is dependent upon the types of equipment deployed and must also take into account the maturity of the theater’s petroleum production and distribution infrastructure.

b. **Flexibility.** **Military weapon systems and equipment must be capable of using alternate fuels.** Land-based aircraft and equipment deployed to a theater must be capable of sustaining acceptable performance using a kerosene-based product such as a JP8 type fuel. Correspondingly, sea-based aircraft and equipment must perform acceptably on JP5 type fuel. Conventionally powered ships, whenever possible, should use a distillate fuel such as F76 for propulsion.

c. **Interoperability.** **Military fuel handling equipment and connectors must be interoperable** among Services and, where possible, with allies and coalition partners. This interoperability allows timely weapon system support in joint operations without duplication of effort and material. This concept is also very important in multinational operations, where one nation may be designated as the role specialist nation (RSN) for petroleum logistics. Consequently, to foster interoperability, **DOD fuel handling equipment should be of common or compatible design, material, and size** whenever practical.

4. Stockage

Bulk petroleum inventory consists of petroleum war reserve stocks (PWRS) and peacetime operating stocks (POS). Both inventories are sized based on a concept of having enough fuel on hand until resupply can be assured. **This approach optimizes stock levels to maintain an acceptable degree of support and sustainability** across the range of military operations. Inventory levels are independently determined for each location or, where practical, for a defined area. Chapter III, “Petroleum Stockage Management,” will provide additional information on how fuel requirements are determined.

5. Major Participants

a. **The combatant commander has the predominant fuels responsibility within a theater, and this responsibility is discharged by the Joint Petroleum Office (JPO).** The JPO works in conjunction with its Service components, subarea petroleum offices (SAPOs) and the Defense Energy Support Center (DESC) to plan, coordinate, and oversee all phases of bulk petroleum support for US forces employed or planned for possible employment in the theater. JPOs typically have a mix of Service representatives. Operational requirements may dictate the establishment of SAPOs in support of subordinate joint force commanders (JFCs). However, consideration should be given to the joint operations area (JOA) and expected mission support, force composition, and sustainment requirements when selecting SAPOs.

b. **DESC is the integrated manager for bulk petroleum and associated storage facilities.** As such, DESC is responsible for the acquisition of bulk petroleum products and providing product support to the geographic combatant commands and Military Services as outlined in Chapter II, “Petroleum Responsibilities.”

c. **Each Service provides for product handling at its operational locations.** The Services coordinate all fuel issues with the appropriate JPO, SAPO, and DESC during single-Service, joint, and multinational operations, to include exercises and deployments, to ensure efficiency and avoid duplication of effort. In some cases, when Services have sufficient refueling assets, they may be tasked to provide distribution of bulk petroleum as outlined in Chapter II, “Petroleum Responsibilities.”

6. Theater Support Concepts

a. **General. Theater bulk petroleum operations revolve around a push-pull supply system.** **Land-based customers** request fuel from the Army component’s theater support command (TSC) or another Service component organization or agency assigned as the lead Service for bulk fuel support. The TSC normally includes a quartermaster group (petroleum and water) and a theater materiel management center. The theater materiel management center is tasked to manage and account for theater bulk fuel. The quartermaster group (petroleum and water) is tasked to coordinate tactical distribution storage and quality surveillance of bulk fuel in the theater. These organizations schedule movement of product forward into the corps support area based on a combination of available storage and anticipated customer demands. Note: in smaller scale operations, Army lead Service Class III support may come from tactical-level units such as a corps support command rather than a TSC. **Sea-based customers** essentially perform the same functions, but interface more directly with terminal operators at Defense Fuel Support Points (DFSPs). **The basic stockage concept in theater operations is to have sufficient storage to support the most demanding operation plan (OPLAN), and keep the storage at or near maximum authorized levels, while using available transportation assets as efficiently as possible. During peacetime operations, this stockage concept may be modified by actual day-to-day needs, economic resupply concepts, threat conditions, and storage objectives. When demand exceeds availability, the JPO devises an allocation system to support the campaign plan or OPLAN that is approved by the combatant commander.**

b. **Mature Theater.** In a mature theater, the established infrastructure supports the supply and distribution of bulk petroleum. Stocks are moved from secure military or commercial sources to forward areas and terminals as demand or plans require. The movement and redistribution of assets are accomplished through a joint effort involving the combatant commands, Service components, and DESC. DESC interfaces with components of the United States Transportation Command (USTRANSCOM) for product movement outside the JOA as necessary. **Actual procedures to accomplish the delivery of products to the end user depend on the sources of product and the conditions in the JOA.** The mature theater normally has available some host-nation assets and/or theater support contracts (i.e., fuel sources, terminal facilities, pipelines, railways, and trucks) that should be used to the maximum extent possible to help offset US requirements. Because the capabilities of allies or coalition partners are **theater unique**, the JPO or SAPO is responsible for assessing these potential capabilities and integrating them into appropriate plans and operations. Figure I-2 is an example of a bulk petroleum distribution system in a mature theater.

(1) **Pipeline Distribution.** Pipeline is the preferred method of inland fuel distribution. A fully developed theater fuel distribution system may include ship discharge ports (with moorings and piping manifolds), seaside and inland fuel storage tanks, pump stations, and pipelines. Large-scale operations may justify the construction of coupled pipelines using the Army's inland petroleum distribution system (IPDS) to move bulk petroleum

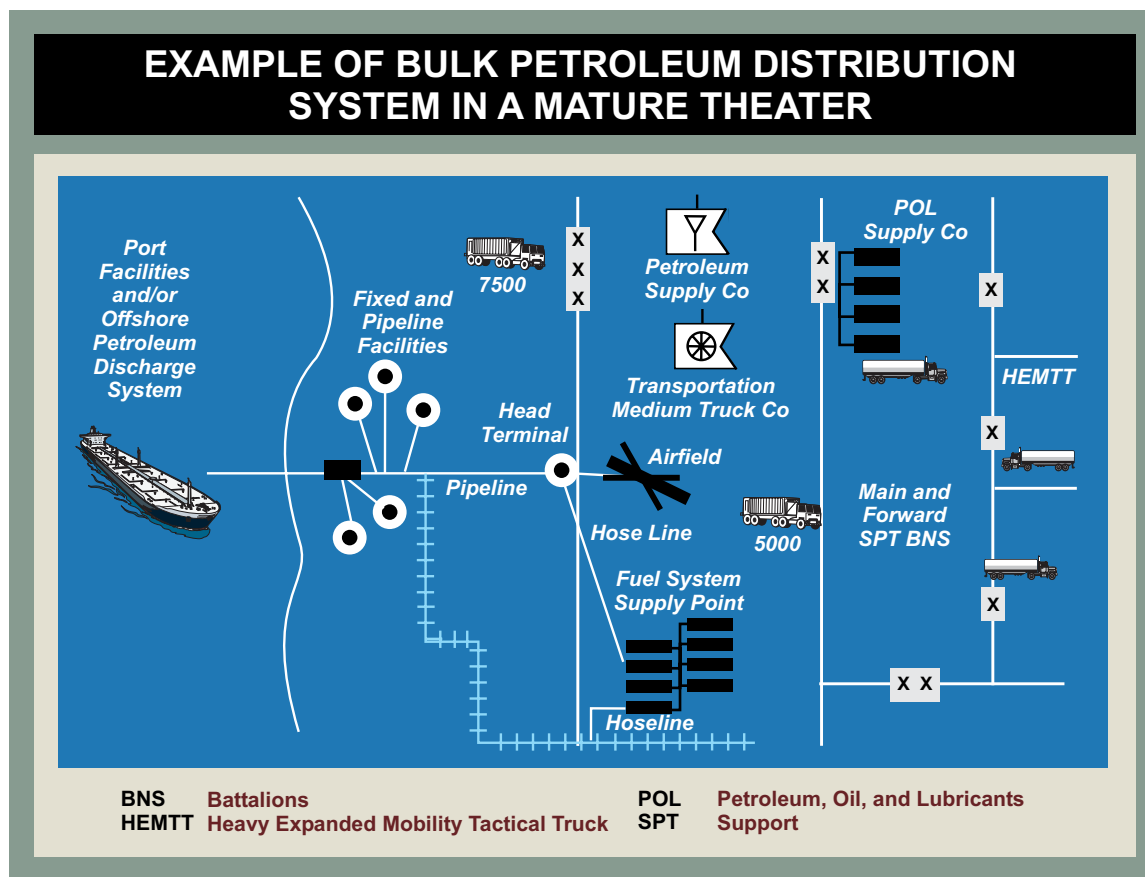


Figure I-2. Example of Bulk Petroleum Distribution System in a Mature Theater

forward from rear area storage locations. These lines may supplement existing Service or host nation (HN) infrastructure pipelines. Airbases, intermediate support bases, and operational locations deemed appropriate may also be serviced by pipeline systems when tactically feasible. Hose lines may be used to service smaller or temporary, large-volume sites. The pipeline system extends as far forward as possible, usually into the designated corps rear area, with hose line extensions into corps storage sites.

(2) **Other Distribution.** The pipeline system may be supplemented by other means of bulk delivery, such as barges, rail tank cars, aircraft, bulk truck transports, and commercial distribution equipment provided by the host or occupied nation. **These distribution systems are used to move products from the rear or intermediate areas to the multi-Service direct support echelons.** Bulk truck transports commonly move fuel from terminals or corps area storage to the Service component direct support unit (i.e., non-divisional supply units for the Army, bulk fuel companies for the Marine Corps, base fuels flights for the Air Force, and construction force units for the Navy). Some local distribution is also made by tank trucks that are organic to these direct support units.

(3) **Petroleum Group.** The petroleum group is the principal Army organization responsible for bulk fuel and water distribution at the operational level. It commands primarily petroleum pipeline and terminal operating battalions/companies and medium truck petroleum battalions/companies. These units operate and maintain petroleum distribution facilities to support the theater petroleum mission. The group also includes petroleum supply battalions to provide general support petroleum supply. These battalions receive, store, and transfer bulk petroleum to direct support supply units. (The group also includes water units.)

c. **Immature Theater.** In an immature theater, in-place and operational tankage, on-hand product, road networks, rail lines, and easily traversed lines of communications (LOCs) normally are not available. **Bulk petroleum may need to be received via joint logistics over-the-shore (JLOTS) operations.** Such operations use the offshore petroleum discharge system (OPDS) or amphibious assault bulk fuel system (AABFS), operated by Navy Seabees, to deliver fuel to tactical storage facilities located immediately ashore. The OPDS delivers fuel to the IPDS normally operated by an Army pipeline and terminal operating unit. The AABFS delivers fuel to tactical storage facilities normally operated by a Marine Corps bulk fuel company or an Army petroleum supply unit. Figure I-3 is an example of an initial petroleum distribution system in an immature theater.

(1) **General.** In the early stages, the theater infrastructure may only consist of that infrastructure found in a Marine air-ground task force, or Army division support area. The communications zone, including tactical airbases, may never be formed depending on the duration and geographic expansion of the operation. As in the mature theater, direct support units may provide fuel on an area basis to some or all multinational forces comprising a joint or multinational force.

(2) **Remote or Noncontiguous Location.** When LOCs are not secure, when support of isolated areas of operations demand such, or when operating in noncontiguous areas, **Service component aircraft carrying fuel trucks, collapsible tanks, 500-gallon collapsible drums,**

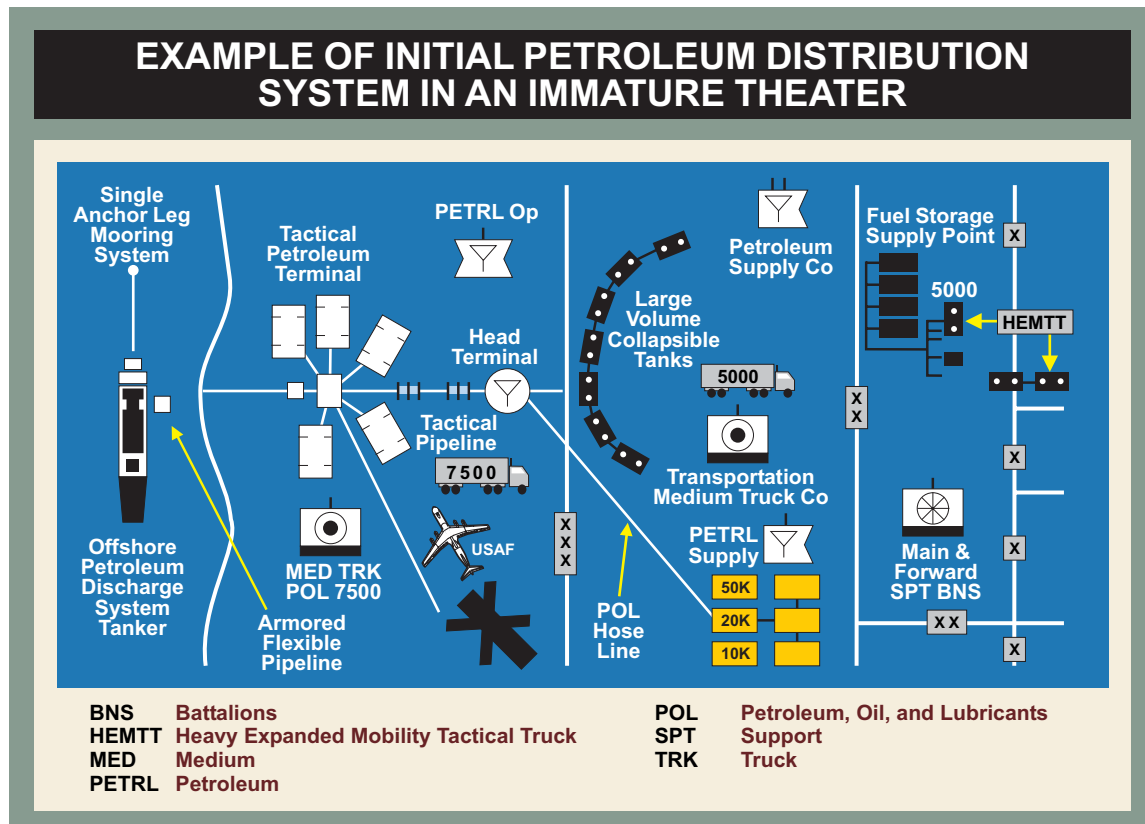


Figure I-3. Example of Initial Petroleum Distribution System in an Immature Theater

or 55-gallon drums may be required to distribute fuel. The aerial bulk fuel delivery system (ABFDS) enables cargo aircraft to transport from 3,000 to 30,000 gallons of fuel to the tactical storage and issue systems. **Delivery amounts vary based on aircraft type, configuration, and runway capability.** The tactical fuel distribution systems typically are air transportable and consist of collapsible tanks, hoses, filters, and pumps. In addition, Air Force tanker aircraft can deliver fuel to airbase tactical systems, again depending on runway capability and the threat. **Transporting fuel by air greatly limits the airlift available for other requirements** and is only used when other delivery means cannot meet operational needs.

(3) **Pipeline Distribution.** As in the mature theater, bulk petroleum is most efficiently moved from base terminals and rear storage locations to the combat zone by pipelines. Coupled pipelines, as a part of IPDS, are used when and if the situation warrants its use. A tactical tank farm consisting of collapsible tanks is constructed at airbases or other locations and connected to the main hose line or pipeline. The airbases or other locations then employ tactical servicing systems that have hoses, pumps, and filters to issue the product to the end user. These tactical issuing locations must also have the capability to test the fuel to ensure quality is maintained.

(4) **Expanding Distribution.** As theater requirements expand, IPDS tactical pipelines, tanks, and fixed pumping assemblies may be installed depending on the volume of requirements, the expected duration of the employment, and the type of operation (e.g., foreign humanitarian assistance or peacekeeping). Other delivery means, operated either by military or commercial

sources, such as tank trucks, barges, and aircraft may be incorporated into the overall distribution system depending on road, river, or airport infrastructure.

W.W. II: SOLVING FUEL PROBLEMS

Mobile warfare placed a premium on the adequate supply of petroleum products to mechanized armies in the field. This was a trend that began in World War I and developed into the “blitzkrieg” tactics of World War II. The mobility of armies was always a fundamental factor in military strategy and tactics, but modern equipment provided greater fluidity of action than was ever possible in any previous military campaign. Tanks, trucks, jeeps, and tractors, however, required a steady flow of gasoline. The degree of an army’s success in the field was in direct proportion to the adequacy of its petroleum supply. In February 1943, when the 8th Army had just arrived in Tripoli in pursuit of the retreating Germans, Maj. Gen. Edmund B. Gregory, the Quartermaster General, visited General Sir Bernard L. Montgomery. He learned that petroleum supply had been the main problem of the British throughout the North African campaign. Lt. Gen. Neil M. Ritchie, who had been driven back almost to the gates of Cairo, had been defeated because he had disregarded the advice of his supply man, who had warned him that there was not enough transportation to bring up an adequate supply of gasoline to serve the tanks. The latter, their supply of gasoline exhausted, became easy prey for the Germans. In modern war, a country deprived of its oil supply is doomed to defeat.

The Quartermaster Corps (QMC) realized at the outset of the war that furnishing oil to the troops would be a major function, but it did not fully appreciate the extent and nature of the problem until preparations for the North African campaign were under way. Then, by mid-1942, the War Department found that it was involved in a new and tremendous business. Petroleum constituted approximately two-thirds of the total tonnage of shipments from the United States to the North African Theater. For the first time in history, it was necessary for the QMC to arrange for the supply of gasoline, diesel fuels, and kerosene in the hundreds of thousands of 55-gallon drums and 5-gallon cans required by the theater commander to keep supply lines moving over hundreds of miles and to support operations for which there were no storage tanks, gasoline pumps, or local warehouses available. The problem of containers and equipment for handling petroleum products became vital. At the beginning of the North African campaign, the British had used so-called “flimsies,” that is, ordinary 5-gallon tin gasoline containers. As the name implied, “flimsies” could not take the rough handling to which they were subjected, and consequently at least half of the British supply had been wasted. It was not until after the capture of a substantial number of 55-gallon drums and Jerry cans from the Germans that their gasoline problem was somewhat simplified. The procurement of suitable containers was a problem that also had to be solved by the Office of the Quartermaster General (OQMG).

Demands for petroleum products and containers increased enormously as the war progressed, and the coordination and centralization of their procurement, storage, and distribution became imperative in the face of transportation difficulties and shortages of critical items. The War Department had little or no petroleum organization before the war. The Army had depended upon the distribution facilities of the petroleum industry to satisfy its needs in the zone of interior. Maneuvers had created increased demands at different times, but the Army had always found it possible to meet requirements by means of Treasury Procurement contracts and some special arrangements by field commanders, with very little coordination from Washington.

The entrance of the United States into the war brought huge requisitions which could not be filled by such means. Kaleidoscopic changes were initiated in an effort to evolve an adequate organization for handling petroleum supply. The need for centralization was apparent, and the first step in that direction was the creation of the Petroleum Branch in the Procurement Division, OQMG. Col. H.E. Rounds, the Chief of the Branch, had the task of building an organization from scratch. So well did he succeed, that ultimately, on 1 June 1943, it evolved into the Fuels and Lubricants Division, an organization which completed the integration of the supply of petroleum products for the Army. The Division was given not only staff responsibilities, particularly in relation to long-range planning, but also operating responsibilities covering the procurement, supply, issue, and storage of petroleum products, containers, and equipment for handling petroleum products. Despite the difficulties inherent in creating an adequate petroleum organization during the war, the QMC accomplished the task of procuring petroleum supplies, delivering them to the right place at the right time, and insuring that, with some few exceptions, they were of the right specifications needed for extreme variations of climate and widely different items of equipment. This was a remarkable achievement.

SOURCE: Risch, Erna , QMC Historical Studies #9: Fuels for Global Conflict, Historical Section, Office of the Quartermaster General, 1952

d. **Military Operations Other Than War (MOOTW).** The focus shift from global to highly diverse regional conflicts demands responsive petroleum support. MOOTW require mobility, rapid response, and tight control over fuel assets and inventories. These fuel requirements will vary and each situation will be unique. Elements that comprise the fuel support spectrum between the mature and immature theaters can be tailored and applied to MOOTW. Once the focus shifts, the involvement from outside organizations can encompass many levels. The US Coast Guard, nongovernmental organizations, international organizations, and US agencies such as the Drug Enforcement Agency and the Federal Emergency Management Agency are typical organizations that could get involved during MOOTW. The missions, functions, and responsibilities of the DESC, the Services, and the supported combatant commander will require flexibility on the part of the planners to ensure adequate fuel support is not compromised or delayed. **Fundamentals for MOOTW fuel support** are shown in Figure I-4.



Figure I-4. Military Operations Other Than War Fuel Support Fundamentals

7. Integrated Materiel Management

a. **General.** The concept of integrated materiel management (IMM) underlies the principles in Joint Bulk Petroleum Doctrine. IMM is a logistic concept utilized when a single agency of the Department of Defense has total management responsibility for supplying a specific product or group of related items to the Armed Forces of the United States. Because IMM both supports and influences this doctrine’s usage and interpretation, an understanding of its conception and extent is important.

b. **Overview.** In 1972, the Office of the Secretary of Defense (OSD) designated **DLA** to execute IMM for bulk petroleum. DLA assigned DESC as its agent to carry out these responsibilities. In 1973, **DESC** became responsible for the coordinated procurement, storage, and non-tactical distribution of bulk petroleum products to the Services’ installation boundaries. In 1981, **DESC was given responsibility to fund military construction** for certain bulk storage facilities, and in 1985, to fund maintenance and repair for these storage facilities. Finally, DESC responsibilities greatly expanded in 1992 to include **ownership of fuel in bulk storage and facility maintenance and repair funding responsibilities for capitalized Military Service installations** to achieve more vertical integration of product management down to the point of sale to the customer.

c. **DESC Regional Offices.** To facilitate practical and responsible decisions that ensured expeditious delivery of fuel products to each Service, DESC established DESC Regional Offices.

These offices maintain close contact with customers to ensure their particular needs are considered when planning fuel support. In general, DESC Regional Offices coordinate delivery orders with industry, resolve logistic problems, supply emergency products, perform quality surveillance and management, coordinate and fund maintenance and repair projects, and assist the JPO in petroleum logistics planning. These offices are located in the continental United States, the US Pacific Command, the US European Command, and the US Central Command. DESC-Americas, DESC-Pacific, DESC-Europe, and DESC-Middle East support the respective combatant commanders.

8. Planning for Bulk Petroleum Support

a. Overall Theater Planning

(1) **General. The supported combatant commander's JPO is responsible for the overall planning of petroleum logistic support** for joint operations within the area of responsibility. This planning occurs at the strategic level and usually is embodied in the **petroleum appendix to the logistics annex of the OPLAN or operation plan in concept format (CONPLAN)**. The petroleum appendix covers theater-wide fuel requirements, resupply, and distribution. The format for fuels planning is prescribed in the Chairman of the Joint Chiefs of Staff Manual (CJCSM) 3122.03A, *Joint Operation Planning and Execution System Vol II: (Planning Formats and Guidance)*. The DESC Regional Offices and Service components support the JPO in developing a practical, sustainable petroleum support concept and plan.

(2) Inland Petroleum Distribution Plan (IPDP)

(a) The IPDP provides a single source document for understanding how the guidance provided in the OPLAN or operation order (OPORD) will be executed. It provides the details necessary for Service component commanders to understand how to interface with units, agencies, and firms providing petroleum support. The petroleum portions of the OPLAN or OPORD provide an executive summary while the IPDP contains the details supporting the summary.

(b) Just as the JPO is responsible for theater petroleum planning, **the SAPO, if established, is responsible for petroleum, oil, and lubricants (POL) planning and execution matters within its JOA**. This level of planning focuses on support for each Service component. **Its products are the IPDP and base support plans.** The IPDP complements the intratheater and intertheater planning efforts of the JPO and forms the tactical basis of the petroleum portion of the command's OPLANs and CONPLANs. The IPDP is published either as an annex to the petroleum appendix of the OPLAN or as a stand-alone document.

(3) The following questions will aid in the development of the POL Appendix to the Logistics Annex:

(a) Should a SAPO for resupplying POL be established?

(b) What is the concept of operations for petroleum support?

- (c) What host-nation support (HNS) is available?
- (d) What are the components' responsibility for petroleum support? Have components provided estimates of POL requirements?
- (e) Have arrangements been made to contract for host-nation or theater support contractor resources with the supported combatant commander JPO or DESC?
- (f) Have POL storage methods and sites been selected? Have security arrangements for the sites been established?
- (g) Have arrangements been made for transportation of POL within the assigned theater?

(4) Appendix A, "Planning Guidance for Appendix 1 to Annex D Petroleum, Oil, and Lubricants Supply," provides additional information for the development of Appendix 1, "Petroleum, Oil, and Lubricants Supply," to Annex D, "Logistics," of OPLANs, CONPLANs, and functional plans (FUNCPLANs).

b. **Planning Considerations.** The petroleum supply system must be designed for the operations and climate of the specific theater. **Plans should consider at least the following points** (see Figure I-5).

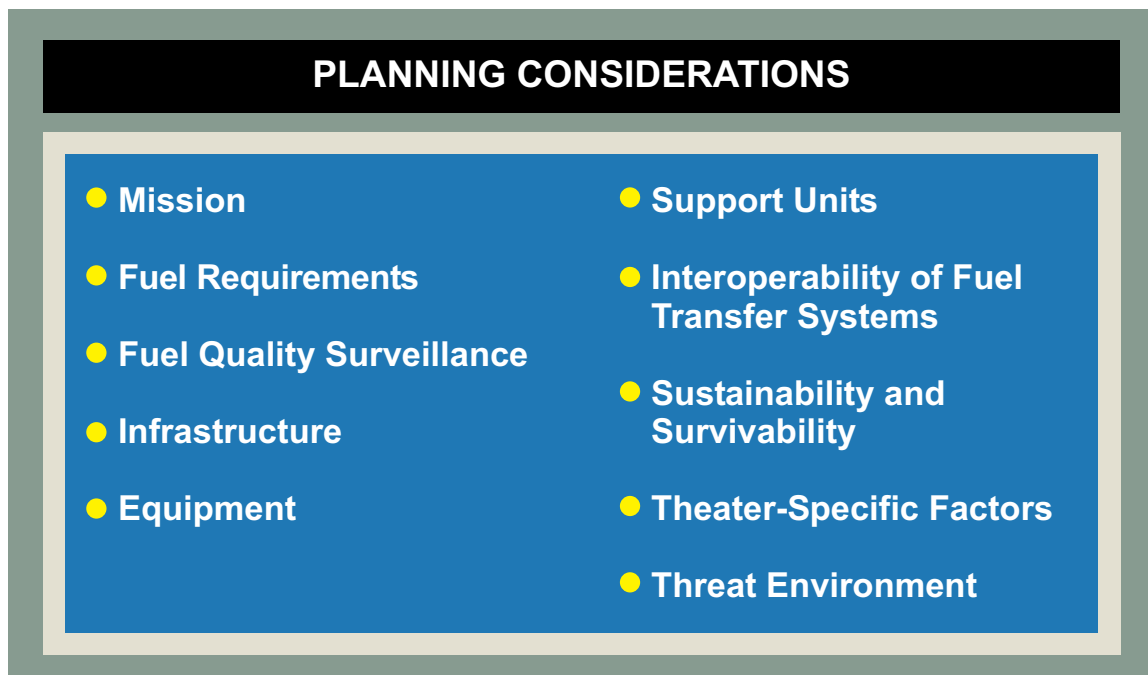


Figure I-5. Planning Considerations

(1) **Mission.** The mission and the planned size and composition of the joint forces to be supported should be guiding parameters for planning efforts. Theater contingency scenarios, worldwide materiel distribution policies, and other guidance should be considered in determining specific theater requirements.

(2) **Fuel Requirements.** Fuel requirements to support the deployment and employment of forces are determined by the Services. Service components of the combatant commanders (or other organizations within each Service) use such factors as troop strength; numbers and types of aircraft, vehicles, or ships; deployment times; and intensity and duration of engagement to determine time-phased petroleum requirements. Plans should include these Service-generated requirements, all pre-positioned stocks, and sources for resupply. Accurate fuel requirement forecasting is critical to supporting the warfighter's mission. Service headquarters (HQ) must ensure POL requirement planners receive the necessary training and resources to accomplish this task. **The inventory management plan (IMP), developed annually by DESC in coordination with the Services and combatant commands, details worldwide bulk petroleum war reserve requirements (PWRR) and storage availability by location.** The PWRR are sized based on resupply sourcing assumptions included in the days of supply (DOS) factors. DOS factors are developed by the Joint Staff and approved by OSD.

(3) **Fuel Quality Surveillance.** The daily validation of the quality of all sources of contingency stock from the theater to tactical level is a vital readiness mission. The DESC and Service components must plan and ensure that trained bulk petroleum quality surveillance representatives (QSRs) and equipment are available to ensure that contingency petroleum stocks meet military specifications.

(4) **Infrastructure.** The capability of installations and facilities in the operational area to provide fuel, storage, distribution, and laboratories must be considered. Size, capability, and maintenance status of offshore unloading facilities, terminals, distribution points, and bases are important to the logistic feasibility of the fuel plan. Addressing this data can help determine the need for and method of employment of tactical terminals, pipelines, hose lines, and other fuels handling equipment.

(5) **Equipment.** To ensure that petroleum handling and distribution equipment is available for support of operations (e.g., IPDS, AABFS equipment onboard maritime pre-positioning ships and equipment onboard OPDS tankers), **fuel deployment packages and operational project stocks should be identified and considered for use.** In addition, each Service's operating units for the specific petroleum handling systems should be linked to those systems and identified for movement in the plan.

(6) **Support Units.** **Identifying the type and arrival dates of units not tied to any specific equipment system and needed for various support roles is critical to any operational success.** Timely arrival of engineer units (or logistics civilian augmentation program contractors) for construction of petroleum facilities and underwater construction teams for OPDS setup are just some of the diverse types of support units that must be identified.

(7) **Interoperability of Fuel Transfer Systems.** Interoperability should be considered and resolved in the planning process for at least the following interfaces:

(a) Tanker or oiler to Navy receiving ship, US Coast Guard receiving ship, seaport load and off-load facilities, and JLOTS systems.

(b) Airbase fuel storage and dispensing systems to receive fuel from commercial or military sources and issue fuel to Service component and multinational aircraft.

(c) Shore distribution systems to tactical fuel systems and equipment; e.g., IPDS, Tactical Airfield Fuel Dispensing System, and fuel tanker vehicles.

(8) **Sustainability and Survivability.** Both of these concepts should be factored into the plan to ensure petroleum logistic feasibility. Assumptions made should be critically reviewed. Where appropriate, security requirements beyond general user security must be identified.

(9) **Theater-Specific Factors.** Consideration must be given to theater-specific factors such as available commercial and HN supply sources and transportation assets. Many of these sources of petroleum supply will have political, technical, and economic factors that limit their availability. **These commercial and host-nation limiting factors must be taken into account** when developing the plan to support the deployment, employment, sustainment, and redeployment of forces. Some factors that commanders and planners must take into account include:

(a) Force protection for contractor personnel, fuel equipment, and stocks.

(b) Contractor limitations with regard to support.

(c) Contractor required logistic support.

(10) **Threat Environment.** While theater specific factors may require force protection actions for contractor personnel, petroleum equipment, and stocks; quality assurance actions should also be considered. Ensuring adequate security may include specific and appropriate countermeasures against tampering, adulteration, substitution, contamination, and other actions that could make the fuel unusable or potentially damaging to the end user.

9. Host Nation and Contracted Support

a. **General.** Combatant commanders should make maximum use of host-nation and theater support contracted capabilities to meet peacetime and wartime requirements. These are especially critical in contingencies when logistic support from US units or equipment may not be readily available or combat forces have outpaced integral logistics capability. **The type and amount of fuel support provided should, if possible, be specified in signed agreements and included in logistic plans of all nations concerned.** The amount of support, civil or

military, a HN can provide depends on its national laws, industrial capability, and willingness to give such support. Although sometimes difficult to obtain, HNS agreements should be aggressively pursued.

b. Agreements. Several different agreements, such as the North Atlantic Treaty Organization (NATO) standardized agreements, Defense Cooperation Agreements, bilateral agreements, implementing arrangements, foreign-assistance acts, foreign military sales programs, and reimbursement for multinational support, may serve combatant commanders' and Service components' needs, depending on the degree and type of support required and the specific HN.

(1) Negotiations can occur with the HN under the auspices of an **acquisition and cross-servicing agreement (ACSA)** or a **stand-alone international agreement**. An ACSA is usually negotiated by the combatant command and is authorized under the acquisition and cross-servicing authorities, title 10, United States Code, sections 2341-2350. A stand-alone international agreement is usually negotiated by DESC or a Service through the appropriate American Embassy as authorized in DOD Directive (DODD) 5530.3, *International Agreements*. For additional information on agreements, see DODD 5530.3, *International Agreements*.

(a) **Replacement-in-kind and fuel exchange agreements** are negotiated with foreign governments to provide fuel support in the international arena and to improve relations between the US and foreign militaries. In these agreements, products are supplied on a reciprocal basis, either with an exchange of fuel or cash payment, between the military organizations of both countries. These agreements are operational tools that enhance sustainability and readiness, because countries routinely train and support each other.

(b) **Assistance in Kind (AIK).** AIK operations, dealing directly with the governments of these eligible countries, provide materiel and services for a logistic exchange of materiel and services of equal value. These items are accountable as future reimbursements to the country that initially provides them on a gratis basis. Costs for these items have a current value that is captured as future reimbursements. The joint task force (JTF) comptroller will develop and implement procedures, in coordination with logistic elements, to track the value of support provided to ensure an equal exchange of valued materiel and services throughout the operation. Particular care must be taken in accounting for these authorized exchanges due to the political sensitivity inherent in multinational operations. Ideally, these in kind reimbursements should derive no monetary gain and should provide mutual benefit and equity between the participating countries.

(2) Contracts and Agreements

(a) **Blanket purchase agreement (BPA).** A BPA should be considered for filling anticipated repetitive needs for supplies or services for a stated time period. Individual BPAs shall not exceed \$100,000 US dollars, with the exception of commercial item purchases, which may not exceed \$5,000,000 US dollars.

(b) **Into-Plane Contracts.** Circumstances frequently require refueling military aircraft at commercial airports where military facilities/personnel are not available. To minimize commercial costs and ensure quality products will be available, an “into-plane” contract may be established. Once the requirements are defined by the supported combatant commander, the contracts are negotiated by DESC. An “into-plane” contract guarantees a quality product but does not guarantee a specific quantity of product. Any Service combatant commander or Federal Agency may request DESC to establish an “into-plane” contract. Non-contract fuel purchases may be made at civilian airports using the Aviation Into-Plane Reimbursement card where DESC has not established an “into-plane” contract.

(c) **Bunker Contracts.** These contracts are similar to “into-plane” contracts and are used for frequent refueling of ships at commercial ports where DESC has no DFSP. The requirements for bunker contracts are sent to DESC for contract administration.

(3) **HNs provide a number of environmental services** and expect certain behaviors on the part of the JTF.

See Paragraph 8, “Environmental Concerns,” of Chapter III, “Petroleum Stockage Management,” regarding application of agreements and standards.

(4) **The utilization of wartime host-nation support (WHNS) POL infrastructure and transportation assets in a mature theater is a critical part of the IPDP.** The JPO/SAPO must ensure that Service components are aware of potential WHNS infrastructure and that requests are forwarded and updated for OPLANs and requirements for contingencies are submitted in a timely manner. Each operational area and contingency will have unique procedures and policies for submission and approval of WHNS requests. It is the JPO/SAPO responsibility to interface with combatant commander WHNS agencies and ensure that all Service component requests are submitted and acted upon in a timely manner. **During the deliberate or crisis action planning process, the first essential element of friendly information the JPO/SAPO and Service component fuel planners must acquire is WHNS POL infrastructure and distribution capabilities that potentially could be dedicated to support US forces.** By leveraging the dedicated and trusted WHNS POL infrastructure and distribution capabilities, the JPO/SAPO can dedicate the finite organic tactical POL assets for those areas of the operational area that require tactical-level support. Fuel requirements for HNS can be provided to DESC International Agreements Office for negotiation of an agreement with a foreign government to cover terms, conditions, and prices.

(5) Fuel or storage support is also provided by commercial sources within foreign countries to US military forces. These types of contractual arrangements are routinely negotiated by DESC to provide fuel support at international air or sea ports to meet military requirements.

10. Lead Nation Logistic Support

Under the lead nation (LN) concept, one nation agrees to assume responsibility for coordinating and/or providing a range of logistic support services to either all or part of a multinational force (MNF).

Such services may include transportation, medical support, medical evacuation, rear area security, port of departure operations, engineering, and movement control. Often, LN assignments are based upon geographic considerations. For example, a communications zone or operational area may be divided into sectors with LN responsibilities assigned to the major force in that area. Thus, more than one LN may service an operation based upon the division of geographic areas. Commanders designated by their nations to assume LN responsibilities must coordinate logistic support for forces within their geographically assigned limits. National contingents receiving LN support must maintain appropriate liaison with the LN.

11. Role Specialist Nation Operations

a. Under RSN arrangements, one nation assumes responsibility for providing a particular class of supply or service for all or part of a MNF, usually at a determined rate of reimbursement. This option should be strongly considered when a participating nation possesses unique logistic strengths. The major difference between RSN and LN is that the RSN arrangements usually are single-item/single-service oriented, while the LNs are concerned with providing or coordinating multiple services within designated geographic regions.

b. **The RSN concept:**

(1) **Limits competition among deployed national forces for scarce resources** in an operational area and allows for economies of scale by allowing a LN to provide key logistic support to all or part of a MNF.

(2) **Allows for control of unique materiel logistic assets in operations where regional or host-nation supplies are limited.** With RSN, one centralized organization is responsible for buying the commodity, moving it where and when it is needed, and providing any support to maintain the commodity, while maintaining operational area responsibility and accountability. RSN allows the commander to set priorities.

(3) **Provides support to nations having limited deployable logistic infrastructure.** Countries with limited deployable assets/personnel can focus on operations rather than negotiating logistic support.

(4) **Provides an economic advantage to the MNF.** One customer instead of many provides leverage for influencing prices and discourages overpricing of fuels.

(5) **Encompasses providing procurement and contractor delivery of bulk fuels** as far forward as the contractor will support or may require participating nations to pick up from a supply point using organic assets.

c. **The RSN Process.** The decision to assume RSN may be based on economics, politics, force capabilities, or other considerations. Before the United States can accept the RSN mission for any commodity or service, it must have Secretary of Defense/Chairman of the Joint Chiefs of Staff approval. The process for RSN is case dependent and will vary depending on the nations

involved, operational area, and mission. The following general concept assumes that the United States has accepted the RSN mission:

(1) In multinational operations, the alliance or coalition HQ will request a nation to assume RSN for a commodity and the United States commits to assume the RSN lead for that commodity.

(2) Upon Secretary of Defense/Chairman of the Joint Chiefs of Staff approval, the JPO and the DESC initiate detailed RSN planning. A RSN funding, pricing, and reimbursement mechanism will be established. A coordination and planning meeting with all involved nations will be conducted. The purpose of the meeting is to establish a coordination center, reporting requirements/procedures, roles/missions, and resolve standardization and interoperability issues between allies, coalition partners, and other participating nations. Firm national requirements also should be agreed to at this meeting. The RSN mission may encompass not only procurement, but also delivery, storage, and quality control of the commodity.

(3) The JPO may establish a SAPO to manage and oversee RSN petroleum operations.

(4) DESC may establish DESC regional offices, as required, to manage day-to-day RSN operations. DESC will establish contracts for bulk fuel and delivery.

d. The following general concepts assume that another alliance or coalition member will assume the RSN role and the United States will participate:

(1) In multinational operations, the alliance or coalition HQ will request a nation to assume RSN for a commodity and another nation commits to assume the RSN lead for that commodity. A RSN funding, pricing, and reimbursement mechanism will be established.

(2) A coordination and planning meeting with all involved nations is called to establish a coordination center, reporting requirements and procedures, roles and missions, and resolve standardization and interoperability issues. Firm national requirements also should be agreed to at this meeting. The JPO may establish a SAPO to monitor the US fuel supply.

e. All operations involving RSN will be unique, as RSN support concepts continue to develop. RSN responsibilities, techniques, and procedures evolve as US or multinational doctrine emerges. Due to the unique nature of RSN, the JPO will provide additional detailed guidance on a case-by-case basis after coordination with the Joint Staff, DESC, and applicable executive agency/components.

See Joint Publication (JP) 4-08, Joint Doctrine for Logistic Support of Multinational Operations, for more detail.

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CHAPTER II

PETROLEUM RESPONSIBILITIES

“The first essential condition for an army to be able to stand the strain of battle is an adequate stock of weapons, petrol and ammunition . . . neither guns nor ammunition are of much use in mobile warfare unless there are vehicles with sufficient petrol to haul them around.”

Field Marshall Erwin Rommel (1891-1944)

1. General

To provide a basis for understanding the doctrine in Chapter I, “Principles of Bulk Petroleum Logistics,” bulk petroleum management responsibilities currently assigned to the Department of Defense, Chairman of the Joint Chiefs of Staff, combatant commands, Defense agencies, and Services are discussed in this chapter. **Each level of authority has specific responsibilities to ensure bulk petroleum support is effectively and efficiently** provided to US military forces across the range of military operations. These responsibilities are briefly discussed below and further outlined in detail in DOD Manual (DODM) 4140.25-M, *DOD Management of Bulk Petroleum Products, Natural Gas and Coal*.

2. Office of the Secretary of Defense

The **Under Secretary of Defense for Acquisition, Technology, and Logistics** (USD(AT&L)) is responsible for establishing policies for management of bulk petroleum stocks and facilities and providing guidance to other DOD agencies, the Joint Staff, and Services. The **Deputy Under Secretary of Defense for Logistics and Materiel Readiness** will serve as the central administrator for energy management and have IMM oversight responsibility for fuel products. The **Under Secretary of Defense (Comptroller)**, in coordination with USD(AT&L), is responsible for establishing financial policies and guidance for management of bulk petroleum products.

3. Chairman of the Joint Chiefs of Staff

The **Chairman of the Joint Chiefs of Staff** is primarily focused on wartime support and coordinates with the Department of Defense, Services, and the combatant commands to resolve petroleum issues. The **Director for Logistics, Joint Staff, (J-4)** is the primary agent of the Chairman of the Joint Chiefs of Staff for all bulk petroleum matters. Key responsibilities of the J-4 that influence joint petroleum principles and affect operations are listed below:

- a. Act as the focal point for joint bulk petroleum doctrine.
- b. Make recommendations to the Department of Defense on wartime fuel sourcing and pre-positioning DOS.

c. Prescribe combatant command procedures for reporting bulk petroleum. CJCSM 3150.14A, *Joint Reporting Structure (JRS), Logistics*, details these procedures.

d. Provide fuel inputs to the Joint Strategic Capabilities Plan and review fuels planning in prescribed OPLANs.

4. Commander, US Transportation Command

The mission of the Commander, USTRANSCOM is to provide air, land, and sea transportation and common-user port management for the Department of Defense in peace and war. This includes intertheater transportation for bulk petroleum cargos. Other bulk petroleum responsibilities include developing long-range plans, in coordination with combatant command JPOs, for petroleum support of the intertheater mission and contingency operations worldwide, monitoring all en route military construction projects, and overseeing and validating fuel data reporting and requirements by Air Mobility Command (AMC) and Military Sealift Command (MSC) to the combatant commanders. The JPO, USTRANSCOM represents Commander, USTRANSCOM on all petroleum and water-related issues involving USTRANSCOM and components.

a. Prepares plans, policies, and procedures for executing petroleum operations as they relate to supporting the USTRANSCOM strategic mission.

b. Develops long-range sustainment plans for petroleum support of USTRANSCOM's intertheater mission and contingency operations worldwide.

c. Represents the command as a member of the Joint Petroleum Working Group.

d. Reviews long-range plans for positioning of petroleum assets.

e. Serves as a voting member on the DLA's Installation Planning and Review Board, providing command recommendations on budgetary expenditure for out-year military construction projects.

f. Oversees and validates all fuel data reporting by AMC and MSC.

g. Assists warfighting commanders on establishing their fuel-related priorities.

h. Participates in both the Pacific En Route Infrastructure Steering Committee and European En Route Infrastructure Steering Committee, analyzing fuel-related issues.

5. Combatant Commanders

The combatant commanders are responsible to ensure fuel support is provided to combat forces to accomplish those missions assigned by the President and Secretary of Defense. The combatant commander establishes a JPO as required and, if needed, a SAPO to discharge

petroleum logistic responsibilities. The JPO is the key fuel logistician in the planning process across the full range of military operations. It is the JPO's responsibility to ensure all participants, to include the Services, allies, coalition partners, and supporting commands, coordinate their requirements and maximize their available fuel support capability to ensure theater-wide effective support. The combatant commander's WHNS and transportation agencies process and coordinate requests from the Service components for WHNS support, infrastructure, and POL transportation assets. **The close coordination between the combatant commanders' JPO/SAPO, WHNS, and transportation agencies is critical to ensure the timely execution of theater POL sustainment and management.** Key responsibilities of the combatant commander's JPO that influence joint petroleum principles and affect operations are shown in Figure II-1.

6. Subarea Petroleum Office

a. A SAPO is a sub-office of a JPO and is established by the JPO to fulfill petroleum logistic responsibilities in a section of the theater for which the JPO is responsible. There may be more than one SAPO in the theater and these SAPOs are normally required to:

(1) Conform to the administrative and technical procedures established by the combatant commander and DODM 4140.25M, *DOD Management of Bulk Petroleum Products, Natural Gas, and Coal*.

(2) Be under the operational control of the JTF commander.

b. Key duties and responsibilities of the SAPO are to:

(1) Serve as the resident petroleum logistic expert.

(2) Manage development and operation of the organic bulk petroleum infrastructure.

(3) Based upon JFC guidance, allocate fuel in constrained supply situations.

(4) Coordinate the quality surveillance program.

(5) Coordinate additional products and bulk fuel resupply into the theater or JOA through the DESC.

(6) Coordinate overland fuel movements.

(7) Review and consolidate fuel requirements.

(8) Identify and submit requirements to the HN for petroleum logistic support.

(9) Serve as a conduit to the JPO for bulk petroleum information.

KEY PETROLEUM RESPONSIBILITIES OF THE COMBATANT COMMANDERS WITH JOINT PETROLEUM OFFICES

- Plan and Coordinate the Receipt, Storage, and Distribution of Petroleum Products in Theater in Coordination with the Defense Logistics Agency (DLA) and Service Component Commanders
- Coordinate, Validate, and Prioritize Petroleum Military Construction
- Provide Petroleum Logistic Planning and Policy Guidance to Component Commanders
- Negotiate, in Coordination with DLA, Formal Host-Nation Support and Coordinate the Development and Release of Alliance or Coalition Petroleum Planning Information
- May Assume Temporary Operational Control of Defense Energy Support Center Elements Overseas in a Major Emergency in Accordance with a Coordinated Memorandum of Understanding
- Make Maximum Use of Available Stocks in Adjacent Theaters to Support Regional Contingencies
- Direct Tactical Movement of Fuels by Means Available to Any Service Component in a Theater
- Plan and Coordinate the Use of Captured or Abandoned Enemy Bulk Fuel Assets
- Coordinate and Negotiate Multinational Petroleum Support
- Coordinate the Unique Capabilities of Each Service with the Joint Planners
- Ensure Fuel Requirements, Operations, and Constraints are Addressed in the Fuels Annex of Operation Plans
- Establish Lead Service or Agency Responsibilities for Common Class III Support as Appropriate for Each Separate Joint Operation
- Release or Reallocate Theater War Reserves in an Emergency
- Validate Service Component Bulk Fuel Requirements In Wartime or During Contingency Operations
- Decide, in Coordination with DLA, Between Military and Contract Fuel Support
- Integrate Threat Assessments and Force Protection Measures into Petroleum Planning and Operations

Figure II-1. Key Petroleum Responsibilities of the Combatant Commanders with Joint Petroleum Offices

(10) Submit the bulk petroleum capabilities report (POLCAP), bulk petroleum contingency report (REPOL), feeder reports; and other documents to the JPO, as required.

(11) Execute theater bulk petroleum policy, in the absence of the JPO.

(12) Coordinate with Defense Energy Support Center Regions/Offices, JPO, organic elements, and others, as necessary, to ensure seamless petroleum support from the wholesale supplier to the end user.

7. Defense Logistics Agency and Defense Energy Support Center

The Director, DLA, is responsible for meeting the petroleum support requirements of the combatant commands and Services. These functional responsibilities have been delegated to the Director, DESC, and include procurement, ownership, quality surveillance, accountability, budgeting, and non-tactical distribution of bulk petroleum stocks to the point-of-sale. The roles between the JPO/SAPO, Service components, and DESC have become more integrated due to the capitalization of DOD fuels and the expanded role of DESC's support to the warfighter. **Key functions of the DESC that influence joint petroleum principles and affect operations are as follows:**

a. Procure fuel to meet US military requirements in both peacetime and war, making every effort to purchase military specification fuels.

b. Plan, program, budget, and fund **facility maintenance and repair and construction** of new fuel facilities.

c. Design and execute **maintenance, repair, construction, and eligible environmental remediation projects** in coordination with the Services and combatant commands.

d. Plan, program, budget, and fund for **contract storage and associated services, to include refueling vehicles/equipment or aircraft servicing contracts, if appropriate**, for bulk petroleum support.

e. Negotiate and conclude **international agreements** in conjunction with the combatant commanders to provide bulk petroleum support overseas.

f. Develop **contingency support plans** in concert with the supported commander to acquire the necessary petroleum products, storage, and services.

g. Provide **technical support** to the applicable military custodian responsible for development and management of petroleum product specifications.

h. Allocate resources in support of **PWRS**, compute POS requirements, and develop an **IMP** that identifies inventory levels, storage, and covered requirements.

- i. Develop the **annual quantity of bulk PWRS** in coordination with the Services and combatant commanders.
- j. Continuously **evaluate the petroleum market** and advise OSD, the Joint Staff, and the Services of resupply issues critical to peacetime and wartime operations and planning, such as adjusting DOS or recommending augmented safety levels for products and locations where the commercial market base cannot react to surges in demand.
- k. Acquire the **necessary petroleum product, storage, and/or services**, to include non-tactical refueling vehicles/equipment and/or refueling contracts, to support military requirements.
- l. Assure delivery of Class III bulk fuels as close as possible to the point of intended use or to where it can reasonably be expected to be delivered by the contractor. Address force protection issues to the supported combatant commander.
- m. DESC will be prepared to take over management of WHNS POL facilities that the combatant commanders JPO/SAPO has acquired for support of US forces in a mature theater.
- n. DESC will contract for inland petroleum distribution when the Army is not allowed to by the HN.

8. Services

To perform the petroleum support mission, each Service is responsible for the items shown in Figure II-2.

9. Service-Specific Responsibilities

With increasing contractor support, Services must realize their responsibilities for tactical petroleum functions. In many cases DESC can have fuel delivered to the point of end use. But in some cases, such as extremely austere environments, delivery this far forward may not be possible. It is very unlikely that contractors will be able to provide JP8 or JP5 to an operational area during the earliest stages of an inland-based operation. Therefore, it is imperative that Services participating in land-based operations (primarily Air Force and Army) have the capability to inject needed additives into commercial jet fuels until DESC can arrange delivery of JP8, JP5, or contract support for additive injection. Inspection, sampling, testing, and documentation is required by each Service and agency to assure quality of fuel products received, stored, issued, and used. The applicable Service military specification custodians are responsible for development and maintenance of petroleum product specifications in support of aviation and ground fuels and lubricants.

For additional information on quality assurance and quality surveillance, see DODM 4140.25-M, DOD Management of Bulk Petroleum Products, Natural Gas and Coal, and Military Standard (MIL-STD) 3004, Quality Surveillance for Fuels, Lubricants, and Related Products.

PETROLEUM RESPONSIBILITIES OF THE SERVICES

- Operate Petroleum Facilities Under Service Ownership
- Implement Fuel Standardization Policies
- Assist Defense Logistic Agency (DLA) in Selection and Assignment Priority of Fuel Military Construction Projects and Provide Base-Level Technical Support for DLA Funded Maintenance, Repair and Construction at its Fuel Facilities
- Manage Service-Unique or Theater-Assigned Bulk Petroleum Transportation Assets
- Compute Wartime Petroleum Demands Based Upon Combatant Commander Operation Plans, Wartime Fuel Consumption Rates, War Reserve Requirements by Location, and Establish Daily Wartime Demand Profile
- Organize, Train, Equip Fuel Support Forces
- Services Requiring Fuel Additives Should Have or be Able to Obtain the Necessary Training and Equipment to put Additives into Bulk Fuel in Austere Environments
- Validate Service Bulk Fuel Requirements

Figure II-2. Petroleum Responsibilities of the Services

a. **Army.** The Army normally provides **management of overland petroleum support, including inland waterways, to US land-based forces of all DOD components.** To ensure wartime support, the Army shall fund and maintain tactical storage and distribution systems to supplement fixed facilities. The Army shall also provide the necessary force structure to install, operate, and protect tactical petroleum storage and distribution systems, including pipelines. In an immature theater, this also includes providing a system that transports bulk petroleum inland from the high-water mark of the designated ocean beach.

b. **Air Force.** The Air Force shall **provide distribution of bulk petroleum products by air** within a theater where immediate support is needed at remote locations. The Air Force plans to satisfy this requirement with the ABFDS for general bulk delivery and the ABFDS with alternate capability equipment for delivery to aviation assets. It shall maintain the capability to provide tactical support to Air Force units at improved and austere locations.

c. **Navy.** The Navy shall **provide seaward and over-the-shore bulk petroleum products** to the high-water mark for US sea- and land-based forces of all DOD components. It shall maintain the capability to provide bulk petroleum support to naval forces afloat and ashore (to include Coast Guard forces assigned to DOD).

d. **Marine Corps.** The Marine Corps shall **maintain a capability to provide bulk petroleum support to Marine Corps units.**

e. **Coast Guard.** The Coast Guard shall **coordinate petroleum requirements with the Navy.**

10. Single Fuel Concept

a. Minimizing the number of bulk petroleum products that must be stocked and distributed reduces the tactical petroleum infrastructure requirement in-theater. Also, limiting military-unique fuels by requiring the use of kerosene-based products for land-based forces increases operational flexibility because these fuels closely resemble commercial-grade jet fuels, which are available worldwide.

b. Combatant commanders shall develop plans to minimize the types of fuels required in joint operations. The Military Services shall also qualify new systems to use readily available commercial-type fuels. Primary fuel support for land-based air and ground forces in all theaters shall be accomplished using a single kerosene-based fuel, in order of precedence: JP8, commercial jet fuel (with additive package), or commercial jet fuel (without additives), as approved by the combatant commander. Aircraft requiring specialized fuels or additives will need to be handled on a case-by-case basis, as approved by the combatant commander. Fuel support for ground forces may also be accomplished using commercially available diesel fuel when supplying jet fuel is not practicable or cost effective. Primary fuel support for sea-based aircraft shall be high flash point kerosene-based fuel, designated JP5. In theaters where the predominant fuel requirement is in support of the Navy, JP5 may be substituted for JP8 as approved by the combatant commanders. Conventional powered ships shall use a distillate-type fuel, designated F76 for propulsion. Military Sealift ships may use commercial marine fuels for propulsion. The type of fuel designated for the battlefield will be specified by the combatant commander depending on fuel availability and equipment to be used within the theater. To the maximum extent practical, no new combat support or combat service support equipment or vehicles requiring gasoline-type fuels will be acquired or developed unless the support concept is to supply fuel as a packaged product.

CHAPTER III

PETROLEUM STOCKAGE MANAGEMENT

"[Fuel, replacements, spare parts, etc.] . . . must be asked for in time by the front line, and the need for them must be anticipated in the rear."

General George S. Patton

1. General

DOD bulk petroleum inventories consist of PWRS and POS. These two categories of inventory guide the sizing of the stock levels of fuel to permit immediate and short-term operations across the range of military operations. Their purpose is to sustain such operations until resupply can occur. The overall intent is to maintain optimal inventories of specific products at each location to safely support operational requirements.

2. War Reserve Requirements and Stocks

a. **PWRR.** To ensure an adequate supply of petroleum products in the initial phases of a contingency, the combatant commands and the Services develop requirements to properly size petroleum war reserve stocks. **The PWRR is based on the need to support specific joint operations until normal LOCs are established.** The Joint Staff, in coordination with DESC, develops guidelines, approved by OSD, on DOS and appropriate assumptions on secure sources of resupply. These guidelines are provided to the Services and combatant commanders and serve as the basis for determining requirements. Using these guidelines, the Services develop and apply structured, auditable methods of computing PWRR for each OPLAN.

(1) **Computing PWRR for campaign plan or OPLAN, FUNCPLAN, or OPORD.** PWRR is the combatant commander's war reserve fuel required to support a campaign or operation as outlined in the combatant commander's campaign plan or OPLAN, FUNCPLAN, or OPORD. This is determined by applying operational tempo and fuel consumption rates to all the deployed weapon systems in the campaign or operation.

(2) **Integrated Consumable Item Support (ICIS) mode.** ICIS develops PWRR by using the combatant commander's time-phased force and deployment data (TPFDD) to extract all the major fuel burning weapon systems for all Services and applying Service consumption data. ICIS provides detailed time-phased requirements by campaign plan or OPLAN, FUNCPLAN, or OPORD; and by component, Service and location. ICIS also provides a sealift tanker delivery slate, in the form of non-unit TPFDD records, for fuels distribution. The ICIS Force Deployment Module also allows direct entry of forces into the module for crisis action and exercise planning when a TPFDD is not available.

b. **PWRS.** **The PWRS is the on-hand product designated to satisfy the PWRR.** This stockage is in addition to the POS for each location. Combatant commanders are authorized to release or reallocate PWRS in emergency situations.

c. **Stockage Locations.** The location, level of protection, and security of PWRS are prescribed by the combatant commanders with recommendations from the responsible Service component. To the extent practicable, and consistent with acceptable risk, **stocks are positioned at or near the point of intended use.** When possible, stocks are dispersed and held in conventional hardened facilities in high-threat areas. **DLA plans for war reserve storage are coordinated with the combatant commanders and fully consistent with HNS programs** such as the NATO's infrastructure programs, the Combined Defense Improvement Project in Korea, and the Japanese Facilities Improvement Project.

3. Peacetime Operating Stocks

Fuel POS are the amount of product required to sustain peacetime operations in support of military demands. The fuel POS levels are computed annually by DESC for all DFSPs and factors depicted in Figure III-1.

4. Inventory Management Plan

A worldwide IMP is developed and issued annually by DESC in coordination with the Services and combatant commands. **The IMP identifies the required inventory levels,** both POS and PWRR, and the amount of fuel by location that is stocked to cover those requirements. Because of storage limitations, products can be stocked by one combatant commander to cover another combatant commander's OPLAN with concurrence of the supported combatant commander's JPO. Although not desirable, this is allowed when products can be delivered within the required OPLAN timeframe and before normal commercial resupply is planned.

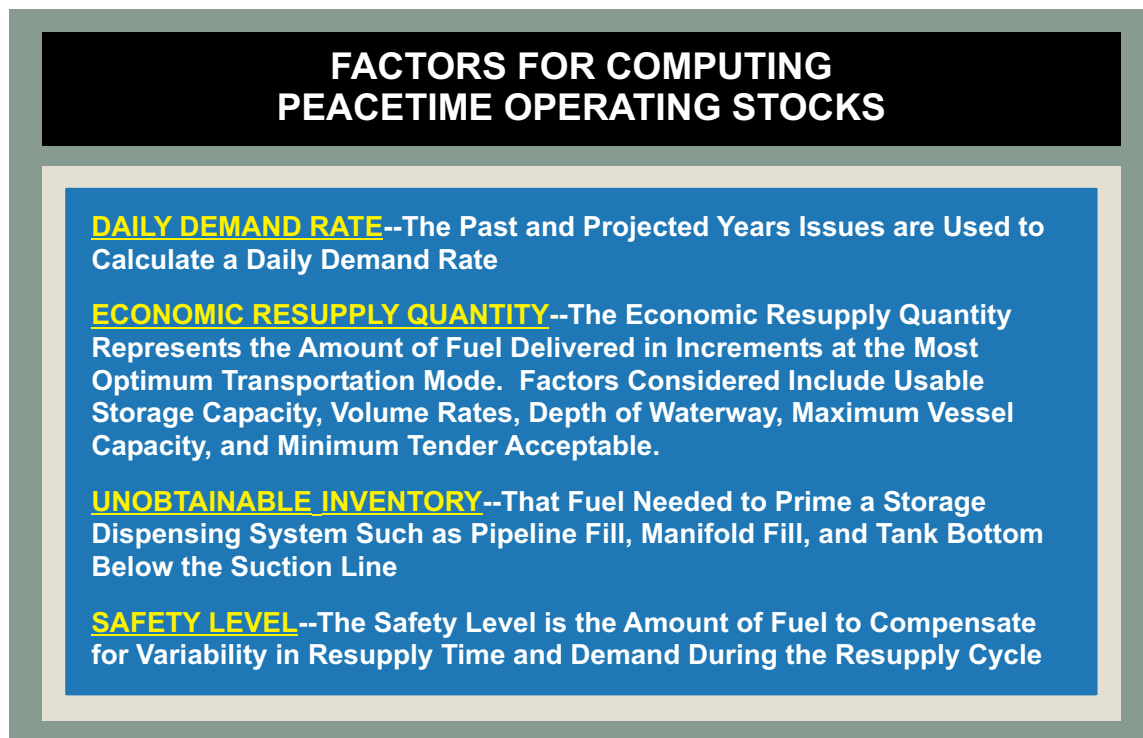


Figure III-1. Factors for Computing Peacetime Operating Stocks

5. Emergency Allocation of Petroleum

There are various levels of responsibility that govern the allocation of fuel during a national emergency. These responsibilities are dependent on the theater and worldwide commercial environment.

a. **Theater.** Based upon the combatant commander's guidance, the JPO will direct the allocation of petroleum products as needed. This includes using PWRS to meet peacetime operations. Actions taken will be coordinated with DESC and the Services. DESC is responsible for providing the combatant commander with the needed information on the overall fuel situation and efforts under way to overcome deficiencies.

b. **Worldwide.** If the Services or the combatant commanders are not satisfied with the allocation of products by DESC during constrained fuel availability, they **may request the activation of the Joint Materiel Priorities and Allocation Board (JMPAB)**. The JMPAB will act for the Chairman of the Joint Chiefs of Staff in all petroleum allocation matters. **Establishment of the JMPAB to allocate fuel is made only under extreme situations** where there are worldwide fuel shortages that will result in ultimate supply failure or in unacceptable degradation of wartime sustainability. Specific information that the Service or combatant commanders must provide to the JMPAB includes current inventory, resupply forecast, and impact on both peacetime and wartime operations.

6. Chairman of the Joint Chiefs of Staff Petroleum Reporting Requirements

There are two key joint petroleum reports that are submitted at the direction of the Chairman of the Joint Chiefs of Staff. These two reports, called the **REPOL** and **POLCAP**, are submitted by the JPOs. Information on frequency and how to complete these reports is outlined in CJCSM 3150.14A, *Joint Reporting Structure (JRS), Logistics*.

a. The **REPOL** provides the Joint Staff, Services, and DESC with summary information on bulk petroleum inventories, damage to and damage assessment for bulk petroleum distribution systems, and other strategic information pertaining to bulk petroleum support posture. During contingencies, a REPOL can be submitted as frequently as daily. The JPO/SAPO consolidates the information to develop the combatant commander's REPOL for submission to the Chairman of the Joint Chiefs of Staff and supporting combatant commands. The REPOL is widely used by the Service components, DESC, JPO, and SAPO to manage theater resupply and distribution requirements and critical actions affecting theater petroleum distribution.

b. The **POLCAP** provides the Joint Staff, Services, and DESC with an assessment of bulk petroleum support capabilities for contingency requirements in a specific theater.

c. The JPO/SAPO develops a theater-unique version of the POLCAP and REPOL for their respective Service components and supporting DESC office to use when reporting essential theater bulk petroleum information. The JPO/SAPO publishes their desired POLCAP and REPOL reporting instructions per their respective combatant commander's logistic reporting directives.

7. Quality Control

a. The importance of quality control of fuel cannot be over emphasized. Quality control of fuel incorporates the quality assurance (QA) and quality surveillance (QS) of receiving, storage, and distribution of the fuel and related products. A vigilant quality control program implemented by properly trained personnel is necessary to protect the original product quality.

b. **QA** ensures the refinery or other sources have fulfilled their contract obligations pertaining to quantity and quality of products and includes all actions required to ensure the government is receiving the proper quantity and quality of specified bulk petroleum products. Petroleum QA is fulfilled when the product has been accepted by the government and becomes government-owned.

c. **QS** is an aggregate of measures to be applied to determine and maintain the quality of government-owned petroleum and related products so such products are suitable for intended use.

d. QS of bulk products must begin upon receipt and continue as long as the product is in the physical possession of the holding activity. Sediment and water are the most common types of contaminants found in storage and dispensing systems. Their presence can cause serious problems in fuel systems, particularly in the operation of aircraft. Positive action must be taken to prevent and eliminate their occurrence.

e. **Responsibilities for QS:**

(1) **JPO** is responsible in overseas areas for ensuring an adequate QS program is maintained within the combatant command. The JPO will report the lack of laboratory facilities that precludes application of the provisions for QS to the applicable Service(s) and the DESC. JPOs shall maintain oversight of matters, records, and reports pertinent to the quality of fuel.

(2) **Military Services** having physical possession of the product are responsible for establishing and maintaining an adequate QS program.

(3) **DESC** will furnish direction and guidance in technical matters to the JPO and the QSRs worldwide. Any matters involving product quality will be coordinated with the technical offices of the Services prior to issuance. In addition, DESC will initiate coordinated action to resolve any conflict of instructions and procedures between MIL-STD 3004, *Quality Surveillance for Fuels, Lubricants, and Related Products*, and those issued by or under the authority of the Services. DESC shall establish and maintain a QS program for DLA-owned products.

f. **Personnel handling fuels and lubricants must be thoroughly trained and fully qualified to perform their assigned duties.** Because of the complexity and hazards of handling fuels and lubricants, all personnel must be cognizant of the product characteristics and fully knowledgeable of all applicable safety and operating procedures.

8. Environmental Concerns

a. All continental United States military activities are required to conform to the regulations of the US environmental laws and guidelines as set forth by the US Government and DODDs. Additionally, these activities must comply with all applicable state and local laws, rules, and ordinances, unless a waiver has been obtained.

b. Outside the continental United States, environmental protocol considers the environmental standards according to the following guidelines:

(1) Use HN environmental laws, status-of-forces agreements (SOFAs) or other agreements.

(2) Negotiated Final Governing Standards may replace HN environmental laws and/or SOFAs.

(3) Apply the Overseas Environmental Baseline Guidance Document (OEBGD) when HN environmental laws do not exist, are not applicable, or provide less protection to human health and the natural environment than OEBGD.

For additional information on environmental concerns, see DOD 4715.5-G, Overseas Environmental Baseline Guidance Document, dated March 2000 and DESC Environmental Guide Fuel Terminals.

FUEL DISTRIBUTION: THE “PATTON SOLUTION”

General George S. Patton probably never met a supply officer he liked. He avoided his Third Army’s chief of logistics until the very last week of the war, never conferring with him during the nine fuel-problem-plagued months when Patton’s armor roared across Europe and kept running short of gasoline. Patton abhorred the mundane details of supply. He demanded as much fuel as possible and cared not where it came from or how. Fighting was his job. Others were left to cope with logistical matters, although Patton sometimes devised extraordinary means to keep his armor rolling.

The Third Army established a deserved reputation for unusual and even unorthodox acquisition of supplies, as one observer reports:

“Roving foraging parties impersonated members of other units, trains and convoys were diverted or high-jacked, transportation companies were robbed of fuel they needed for the return journey, and spotter planes were sent hundreds of miles to the rear in order to discover fuel supplies.”

In September, Patton’s forces, despite their tendency for acquiring fuel at any cost, finally ran out of gasoline after a historic dash eastward across France. So did other Allied armies converging on Germany from the west.

Fuel and transportation facilities were still limited, and the Allied advance ground to a halt. The stalled front stretched in an arc from Antwerp to the Moselle valley near the French-Swiss border. Fuel had to move up to 300 miles from the Normandy ports. Antwerp had just been taken and would not be ready as a full-capacity terminal until late November. With the benefit of hindsight, it seems apparent that the fuel crisis might have been averted and the war ended several months earlier had the Allies stuck to their original plan of capturing the excellent ports on the southern coast of Brittany on the Bay of Biscay. Not only were off-loading facilities available for the biggest tankers, but the railroads afforded direct transport to Paris and on into Germany. Instead of securing the logistical bases on Quiberon Bay and the ports of Lorient and Saint-Nazaire, US strength was concentrated on a direct path from Normandy along the Channel coast and toward Paris.

Patton and the Third Army arguably had the best shot at spearheading the drive into Germany. The Wehrmacht fought valiantly in all sectors, but it was reeling from lack of supplies and attrition. German troops facing Patton were among the weakest on the western front, and the Wehrmacht's inability to move units into pressure points would have made it difficult for the Germans to ever stop the colorful general. Once the Third Army broke out of the Normandy bridge head, Patton was certain he could cross the Rhine by October if adequately supplied.

To read the daily reports of the Third Army is to appreciate the urgency of Patton's fuel situation in September 1944 when his gasoline rations had been cut and a large number of his supply trucks had been diverted to other units. Entries included pleas for emergency shipments as his fuel stocks dwindled to a half-day supply. When his tanks and other armor finally ran dry, the Third Army was across the Moselle, and the Rhine was within reach. From then on until the end of October, Patton's forces averaged less than a two-day supply of gasoline. The army's infantry divisions were rationed to 5,000 gallons a day. Armored divisions received 25,000 gallons initially, but the allocation was halved in October. Even these reduced rations were possible only because four-engine bombers from England were diverted from regular missions to ferry filled jerry cans to Patton. Other units also received airlifted fuel, but the total never exceeded 60,000 gallons a day for the entire theater.

Patton was partly right in believing the share-alike shortages were not equally applied. The First Army, for one, received greater allocations than the Third. Its fuel reserves backed up to a two-day reserve. Possibly, Patton's tank crews may have been less conservation minded than those in the First Army, and heavier consumption would have resulted in slower stockpiling. The records on this are not clear, though there is little doubt all Allied forces were frustratingly slowed because no one had enough fuel.

Reviews of what caused the basic fuel shortage of the Allies agree there was a combination of factors. Allied armies moved faster and farther than anticipated. Facilities for offloading tankers and for storing fuel in accessible areas were lacking or insufficient. Finally, there were problems of distribution, and they were greater in proportion to the distance between the Channel coast and the front. There was always enough fuel somewhere, but not always enough in the right place.

SOURCE: Goralski, Robert and Freeburg, Russell W., *Oil and War*, William Morrow and Company, 1987

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CHAPTER IV

PRINCIPLES OF BULK WATER PURIFICATION, STORAGE, AND DISTRIBUTION

“When the well is dry, we know the worth of water.”

Benjamin Franklin, *Poor Richard’s Almanac*, 1746

1. General

a. **Water is one of the largest and most important life-sustainment commodities.** As water requirements rise above individual or small unit needs, it becomes necessary to handle them in “bulk” form. Bulk handling calls for special equipment, product-handling safeguards, and standing operating procedures. Interestingly, bulk water is still foraged for on the modern battlefield.

b. **Commanders and their staffs at all levels must be concerned about maintaining water support to allow completion of the unit’s mission. To provide the most effective use of water stocks and equipment, water planners must be familiar with Service, DOD agency, and combatant commander water assets and responsibilities.** To ensure adequate support, commanders and their staffs should address planning for tactical water support in all plans and orders.

c. Water is supplied as either a packaged or bulk product. A packaged product is manufactured and procured, stored, transported, and supplied in a container. Water in larger quantities is a bulk commodity. Planners must consider alternative supply methods for bulk water. Packaged methods require extensive shipping, require materials handling equipment to move, and provide a reduced throughput capability when compared to “bulk” operations. There are many drawbacks to using packaged products, and its use should be situation-dependent. Planners should weigh the advantages and disadvantages of packaged and bulk water carefully to ensure the best method is chosen to support the contingency.

2. Concept of Tactical Bulk Water Operations

The basic concept of tactical bulk water support is to purify water as close to the user as possible. This requires proper planning of the water point selection for bulk water, if required, and purification, storage, and distribution of bulk water.

a. **Bulk Water Support Responsibility.** Effective water support is essential to mission accomplishment. **Bulk water support normally is a Service responsibility.** However, during joint operations, if delegated authority by the geographic combatant commander, the subordinate JFC may assign water support responsibilities on an area basis using the “lead-Service concept,” i.e., the dominant user and/or the most capable Service in an area may be tasked to provide water support to all Services operating in that area. The actual procedures used to provide bulk water support to the Services will depend on conditions in the operational area.

b. **Distribution.** In most situations, water distribution is the “weak link” of the water support system. Moving water from the production and storage sites to the user can be equipment and manpower intensive. Joint forces must make efficient use of all available assets in conducting water distribution operations. Transporting water from the storage site to the using units can involve utilizing various means from bottled water/water cans to 5000-gallon semi-trailer mounted fabric tanks (SMFTs).

3. Planning Guidance

a. **Water planners at all levels must include water supply procedures and guidance in exercise and OPLANs.** Planners also need to ensure that the force has adequate resources for water purification, storage, and distribution.

b. **Water support planning is a continual process that begins with the identification of the force size and planned deployment rate.** Time-phased water requirements are then determined and units are selected and scheduled for deployment based on the requirements. Total water requirements are placed in the theater “Water Distribution Plan” developed by the combatant commander, with support from the Service component commander (see Figure IV-1).

Appendix B, “Planning Guidance for Appendix 2 to Annex D, Water Purification and Distribution,” provides additional information for the development of Appendix 2, “Water Supply,” to Annex D, “Logistics,” of OPLANs, CONPLANs, and FUNCPLANs.

4. Water Requirements

Planning for water support begins with determining water requirements. Water requirements will depend upon the environment, the tactical situation, and the size of the force.

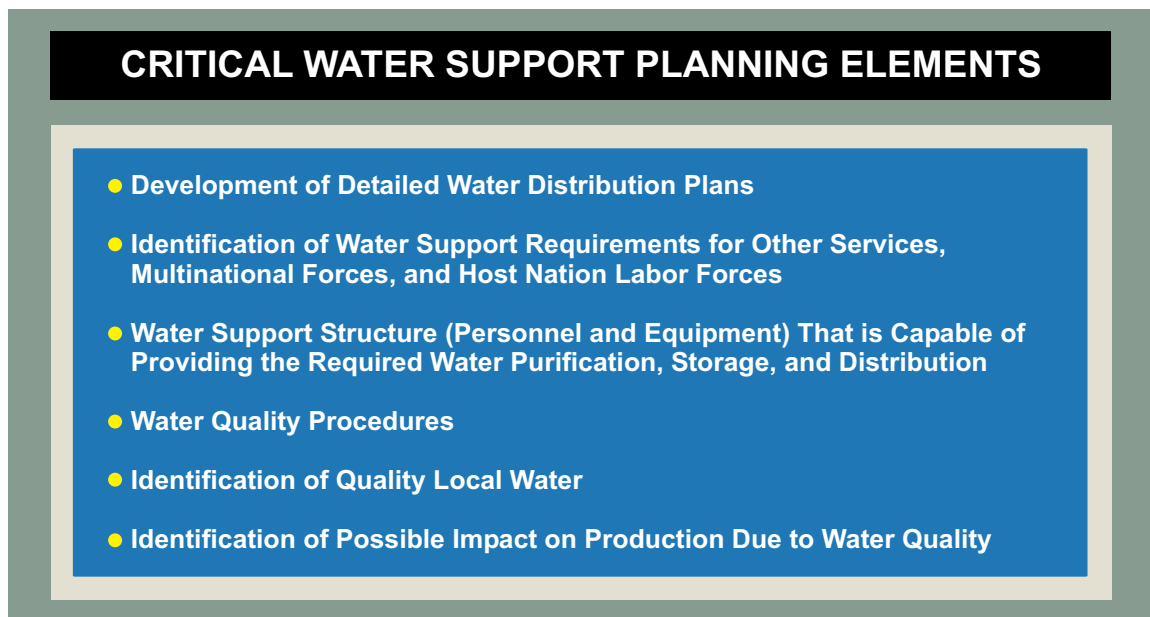


Figure IV-1. Critical Water Support Planning Elements

Water requirements may vary and may not be the same each day. Some requirements such as cooking may be indefinite while others may only be for a specific period of time.

5. Consumption Requirements

Water consumption requirements are based on the size of the force. Figure IV-2 lists the requirements and considerations.

a. **Region.** Water consumption also depends on the region. Water sources normally are abundant in temperate, arctic, and tropical regions. Although non-potable water is easily available, treatments may be required for certain or all uses. For this reason, include non-potable water in consumption estimates if treatment is necessary. In arid regions, water sources are sparse and water must be transported forward. To prevent having two separate water systems in arid regions, requirements for both potable and non-potable water will be met with potable water. As a result, total potable requirements will increase in the arid regions. In all regions, plan for ten percent of the water to be lost through evaporation or waste.

b. **Requirements Determination.** A number of computations must be made to determine supply, purification, and storage requirements for water.

(1) **Supply Requirement.** To compute the total daily water requirement of the force, multiply the actual strength by the proper consumption factor found in the Services' water consumption planning guides. The total, expressed as gallons per day, includes ten percent for evaporation and waste loss.



Figure IV-2. Water Consumption Requirements

(2) **Purification Requirement.** The amount of purification equipment to support the daily requirement has to be determined. To do this, divide the total daily requirement by the daily production capability of one purification unit. Additionally, the type of water purification equipment selected will vary depending on the chemical makeup of the raw water. Under normal conditions, water purification equipment is operated twenty hours per day. However, many other factors affect water production.

(3) **Water Vulnerability Assessment.** Vulnerability of the water system to terrorist, nuclear, biological, and chemical (NBC), and conventional attacks must be considered. Normally, a water vulnerability assessment of potential and existing water sources and distribution systems is conducted to evaluate the level of risk. Ensuring adequate security may include specific and appropriate countermeasures against tampering, adulteration, substitution, contamination, and other actions that could make the water unusable or potentially damaging to the end user.

(4) **Storage Requirement.** Temperate, tropical, and arctic regions usually do not require large amounts of water to be stored. Raw water sources may be adequate to meet non-potable requirements, and the potable requirements can be met by the water purification unit's organic storage tanks. In arid regions, large quantities of potable water must be stored. The storage requirement is based on resupply times, daily requirements, and the DOS requirements established by the commander. In Arctic regions, the storage of water may be complicated by freezing temperatures.

c. **Essential Consumption.** When enough potable water cannot be produced to meet all the requirements, all but essential consumption must be reduced. **Essential water requirements include drinking, personal hygiene, field feeding, medical treatment, heat casualty treatment, personal contamination control and patient decontamination in NBC environments and, in arid regions, vehicle and aircraft maintenance.** Consumption rates under these conditions are classified as "minimum," enough for a force to survive up to one week. Requirements exceeding one week are classified as "sustaining." In this classification, nonessential consumption includes centralized hygiene, laundry and construction. To optimize water treatment equipment, unit commanders may decide to use non-potable water for showering, laundry, and personal/patient decontamination after performing a risk assessment in cooperation with preventive medicine personnel. Preventive medicine personnel should screen for the presence of health hazards, such as skin-absorbed chemicals and pathogenic microorganisms. Non-potable water may require rudimentary treatment to be safe for these activities. Preventive medicine personnel should document troops' exposure to untreated water containing hazardous substances/organisms.

6. Water Support Operations

a. **Phase I, Water Purification.** Once an adequate water source has been identified and located, water purification is the first phase of tactical water support operations. During the purification phase, water is drawn from a source and purified to potable standards. Potable water is certified safe for human consumption. Water typically is purified with a reverse osmosis water purification unit. Standards are verified by medical service personnel responsible for water surveillance. The amphibious assault bulk water system is used to support Marine Corps amphibious

assaults and maritime pre-positioning force (MPF) operations. It consists of 10,000 feet of buoyant 4-inch hose deployed on a maritime pre-positioning ship in MPF operations, which delivers potable water to the high water mark and water storage locations. **Production capacity can range from 75 gallons per hour to as high as 3000 gallons per hour per purification unit or system.** See Figure IV-3 for water production capabilities of selected purification systems.

b. **Phase II, Water Storage.** Water storage is the second phase of water support operations. Storage is normally done at or very close to the purification sites. The goal of water storage is to keep a sufficient quantity on hand to prevent a water shortage if several purification units go down at one time. All storage of water will be in certified and approved containers. Normally, it will be done using 3,000, 20,000, and 50,000-gallon collapsible tanks. Water distribution begins from the storage site.

c. **Phase III, Water Distribution.** Water distribution often is the critical link in water support operations. It is important that units organize so they will have sufficient organic water distribution equipment to provide supply point distribution. Units must have enough water distribution capacity to supply minimum requirements for water while making only one trip to the water point per day. During the early phases of deployments and in emergency situations, packaged water will be the primary means of resupply in forward areas. Once established, forces will use organic

WATER PURIFICATION CAPABILITIES		
UNIT	SALT	FRESH
LWP	75 GPH	125 GPH
600 GPH ROWPU	450 GPH	600 GPH
1500 GPH TWPS	1200 GPH	1500 GPH
3000 GPH ROWPU	2000 GPH	3000 GPH
LMT 3000	N/A	3000 GPH

GPH: Gallons Per Hour
 LMT 3000: USMC Medium Fresh Water Purification Unit
 LWP: Lightweight Water Purifier
 ROWPU: Reverse Osmosis Water Purification Unit
 TWPS: Tactical Water Purification System

The GPH next to each piece of equipment is the maximum production for that equipment, in an ideal situation

Figure IV-3. Water Purification Capabilities

water distribution assets, such as tactical water distribution systems, SMFT, forward area water point supply systems, or water trailers.

d. **Other Considerations.** Planners should maximize the use of HN sources if possible. **Water planners should assume no HN potable water is available in arid regions.** Minimal water sources and poor water quality may limit any operations that depend on HNS to meet the criteria set forth in Naval Medical Command P-5010-5, Preventive Medicine Manual (Navy) or TB MED 577, Occupational and Environmental Health Sanitary Control and Surveillance of Field Water Supplies (Army) for water quality standards. The potential exists for chemical, biological, and radiological threats to the force via hostile attacks on joint water distribution systems. The system may also be a target for conventional attack. Therefore, it is prudent for the unit to use a residual disinfectant and conduct a vulnerability assessment as soon as practical after arrival in theater. **In the early stages of deployment, HN processed or bottled water may be used if it has been certified as potable by preventive medicine personnel.** However, in both mature and immature theaters, JFCs and planners must be aware of the following:

(1) **Article 54 of Protocol I to the Geneva Conventions.** This article prohibits attacking, destroying, or rendering useless drinking water installations and supplies and irrigation works. In no event shall actions against these objects be taken that may be expected to leave the civilian population with such inadequate food or water as to cause its starvation or force its movement.

(2) **Labor Force Personnel.** The HN and theater contractor provided water support must provide for the needs of its labor forces unless otherwise provided in HNS agreements. In the absence of an agreement, US forces may have to assume some responsibility for the care of labor forces.

(3) **Refugees.** Article 55 of Protocol I to the Geneva Conventions states that the host country, as the territorial sovereign, is responsible for refugees on its territory. In the event its resources are strained by an influx of refugees, the host country may request assistance from US forces. US forces may have responsibility to provide refugee care where they have control of enemy territory.

(4) **Enemy Prisoners of War.** Article 26 of the Geneva Convention (III) relative to the Treatment of Prisoners of War requires the United States to provide humane treatment to prisoners in its custody. This includes providing adequate water and food.

APPENDIX A
PLANNING GUIDANCE FOR APPENDIX 1 TO ANNEX D
PETROLEUM, OIL, AND LUBRICANTS SUPPLY

1. Purpose

To provide guidance and formatting for use in the preparation of the POL supply appendix of OPLANs, CONPLANs, and FUNCPLANs.

2. General

The POL supply appendix to the logistic annex should include sufficient information to identify the consumption planning factors, fuel levels, storage, distribution, and time phasing of POL capabilities required to support the plan. In cases where finite POL requirements have not yet been determined, time-phased estimates of POL requirements and capabilities should be provided. Identify petroleum products and distribution capability on hand or readily available that can be used to satisfy requirements for the war reserve stockage and resupply period. Access to, and sourcing from, HN bulk petroleum stocks and distribution resources should be identified when viable.

**APPENDIX 1 to ANNEX D
(Petroleum, Oil, and Lubricants Supply Appendix)**

CLASSIFICATION
HEADQUARTERS, XXXX-XX COMMAND
ADDRESS
DATE

**APPENDIX 1 TO ANNEX D TO CDRXXXX OPLAN XXXX
PETROLEUM, OIL, AND LUBRICANTS SUPPLY**

References: List documents specifically referred to in this plan element.

1. General

a. **Users.** Designate the users to be supported, including multinational forces and civilian requirements, where applicable. Identify the agreements whereby support for the non-US military users would be undertaken.

b. **Assumptions.** List assumptions applicable to this appendix (e.g., scope of reliance on theater support contracts and HNS).

2. Concept of Operations

a. Describe the concept of petroleum operations.

b. Synchronize the concept of support with the concept of petroleum operations.

c. Designate the priority of supply and effort by phase.

d. Designate lead Service or agency as applicable.

e. Specify the end state of each phase and link them to the conditions necessary to start the next phase.

f. Consider vulnerability of the petroleum system to terrorist, NBC, and conventional attacks.

g. Phases of the concept of petroleum operations should mirror the phase of the concept of support. Include the following.

(1) Type fuel and additives. In particular, designate or reiterate the single fuel for the operation and specify how non-single fuels will be handled.

(2) Intertheater and intratheater distribution concepts.

- (3) OPDS requirements.
- (4) IPDS requirements.
- (5) Consol-capable tanker requirements.
- (6) QA and QS.
- (7) HNS agreements or augmentation.
- (8) Determine theater support contract requirements.
- (9) Engineer construction support required.
- (10) Tactical petroleum equipment required.
- (11) Other, as appropriate.

3. Responsibilities

Assign specific responsibilities of organizations involved in providing bulk fuel support (e.g., JPO, component commands, SAPOs, DESC, DLA, and combatant commands).

4. Limiting Factors

Describe limitations that could adversely affect petroleum supply operations, such as inadequate air and ocean terminal capacity, lack of storage facilities, poorly positioned storage, inadequate intratheater and intertheater distribution, inadequate in-theater stocks, lack of alternate facilities, inadequate engineer construction support, and similar logistic constraints.

5. Estimate of POL Support Requirements

Refer to Tab A, if applicable. Describe methods used to compute the requirements if Service planning factors are not applicable or if unique factors are considered.

TAB A to APPENDIX 1 to ANNEX D
(Format, Estimate of POL Support Requirements Tab)

CLASSIFICATION
 HEADQUARTERS, XXXX-XX COMMAND
 ADDRESS
 DATE

TAB A TO APPENDIX 1 TO ANNEX D TO CDRXXX OPLAN XXXX

ESTIMATE OF PETROLEUM, OIL, AND LUBRICANTS SUPPORT REQUIREMENTS								
Estimated Consumption (M Barrels)*								
Product**	Service	C+C9	C+C10-19	C+C20-29	C+C30-39	C+C40-49	C+C50-59	C+C60-89
JP8	USA							
	USN MSC							
	USAF CRAF							
	USMC							
	TOTAL							
*1 M Barrel = 1,000 barrels ** One product per table 10-day increments for the first 60 days. Stop at C+89 (90 days). NATO 7-day increment format for first 45 days can be used vice 10-day format.								
CLASSIFIED BY: _____ REASON: _____ DECLASSIFY ON: _____								

Figure A-1. Estimate of Petroleum, Oil, and Lubricants Support Requirements

APPENDIX B
PLANNING GUIDANCE FOR APPENDIX 2 TO ANNEX D
WATER PURIFICATION AND DISTRIBUTION

1. Purpose

To provide guidance and formatting for use in the preparation of the water purification and distribution appendix of OPLANs, CONPLANs, and FUNCPLANs.

2. General

The water purification and distribution appendix to the logistic annex should include sufficient information to identify the consumption planning factors, storage, distribution, and time-phasing of water capabilities required to support the plan. In cases where finite water requirements have not yet been determined, time-phased estimates of water requirements and capabilities should be provided. Identify water purification and distribution capability on hand or readily available that can be used to satisfy requirements for the wartime tasking. Access to, and sourcing from, HN water and distribution resources should be identified when viable.

APPENDIX 2 to ANNEX D
(Format, Water Purification, and Distribution Appendix)

CLASSIFICATION
HEADQUARTERS, XXXX-XX COMMAND
ADDRESS
DATE

APPENDIX 2 TO ANNEX D TO CDRXXX OPLAN XXXX
WATER SUPPLY

References: List documents specifically referred to in this plan element.

1. General

a. **Users.** Designate the users to be supported, including multinational forces and civilian requirements, where applicable. Identify the agreements whereby support for the non-US military users would be undertaken.

b. **Assumptions.** List assumptions applicable to this appendix (e.g., scope of reliance on theater support contracts and HNS).

2. Concept of Operations

a. Describe the concept of water operations.

b. Synchronize the concept of support with the concept of water supply operations.

c. Designate the priority of supply and effort by phase.

d. Designate lead Service or agency as applicable.

e. Specify the end state of each phase and link them to the conditions necessary to start the next phase.

f. Consider vulnerability of the water system to terrorist, NBC, and conventional attacks.

g. Phases of the concept of water supply operations should mirror the phase of the concept of support. Include the following:

(1) Intertheater and intratheater distribution concepts.

(2) Purification equipment requirements.

(3) Distribution system requirements.

- (4) Quality assurance and surveillance.
- (5) HNS agreements or augmentation.
- (6) Engineer construction support required.
- (7) Tactical water equipment required.
- (8) Other, as appropriate.

3. Responsibilities

Assign specific responsibilities of organizations involved in providing water support (e.g., component commands and combatant commands).

4. Limiting Factors

Describe limitations that could adversely affect water supply operations, such as inadequate water source, lack of storage facilities, poorly positioned storage, inadequate intratheater and intertheater distribution, lack of equipment, lack of transportation assets, and similar logistic constraints.

5. Estimate of Water Support Requirements

Refer to Tab A, if applicable. Describe methods used to compute the requirements if Service planning factors are not applicable or if unique factors are considered.

TAB A to APPENDIX 2 to ANNEX D
(Format, Estimate of Water Support Requirements Tab)

CLASSIFICATION
HEADQUARTERS, XXXX-XX COMMAND
ADDRESS
DATE

TAB A TO APPENDIX 2 TO ANNEX D TO CDRXXX OPLAN XXXX

ESTIMATE OF WATER SUPPORT REQUIREMENTS								
Estimated Consumption (In Gallons)								
Product	Service	C+C9	C+C10-19	C+C20-29	C+C30-39	C+C40-49	C+C50-59	C+C60-89
Water	USA							
	USN MSC							
	USAF CRAF							
	USMC							
	TOTAL							
<i>10-day increments for the first 60 days. Stop at C+89 (90 days). NATO 7-day increment format for first 45 days can be used vice 10-day format.</i>								
CLASSIFIED BY: _____ REASON: _____ DECLASSIFY ON: _____								

Figure B-1. Estimate of Water Support Requirements

APPENDIX C

REFERENCES

The development of JP 4-03 is based upon the following primary references:

1. DOD 4715.5-G, *Overseas Environmental Baseline Guidance Document*.
2. DODD 3110.6, *War Reserve Materiel Policy*.
3. DODD 4140.25, *DOD Management Policy for Energy Commodities and Related Service*.
4. DODD 4705.1, *Management of Land-Based Water Resources in Support of Contingency Operations*.
5. DODD 5530.3, *International Agreements*.
6. DODM 4140.25-M, *DOD Management of Bulk Petroleum Products, Natural Gas and Coal*.
7. Defense Energy Support Center-Environmental Guide Fuel Terminal.
8. JP 1-02, *Department of Defense Dictionary of Military and Associated Terms*.
9. JP 4-0, *Doctrine for Logistic Support of Joint Operations*.
10. JP 4-01.6, *Joint Tactics, Techniques, and Procedures for Joint Logistics Over-the-Shore (JLOTS)*.
11. JP 4-07, *Joint Tactics, Techniques, and Procedures for Common-User Logistics During Joint Operations*.
12. JP 4-08, *Joint Doctrine for Logistic Support of Multinational Operations*.
13. Chairman of the Joint Chiefs of Staff Instruction 3110.01, *Joint Strategic Capabilities Plan FY98*.
14. CJCSM 3122.03A, *Joint Operation Planning and Execution System Vol II: (Planning Formats and Guidance)*.
15. CJCSM 3150.14A, *Joint Reporting Structure (JRS), Logistics*.

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APPENDIX D
ADMINISTRATIVE INSTRUCTIONS

1. User Comments

Users in the field are highly encouraged to submit comments on this publication to: Commander, United States Joint Forces Command, Joint Warfighting Center Code JW100, 116 Lake View Parkway, Suffolk, VA 23435-2697. These comments should address content (accuracy, usefulness, consistency, and organization), writing, and appearance.

2. Authorship

The lead agent and Joint Staff doctrine sponsor for this publication is the Director for Logistics (J-4).

3. Supersession

This publication supersedes JP 4-03, 25 July 1995, *Joint Bulk Petroleum Doctrine*.

4. Change Recommendations

a. Recommendations for urgent changes to this publication should be submitted:

TO: JOINT STAFF WASHINGTON DC//J4/J7-JDETD//
INFO: CDRUSJFCOM NORFOLK VA//JW100

Routine changes should be submitted to the Director for Operational Plans and Joint Force Development (J-7), JDETD, 7000 Joint Staff Pentagon, Washington, DC 20318-7000, with info copies to the USJFCOM JWFC.

b. When a Joint Staff directorate submits a proposal to the Chairman of the Joint Chiefs of Staff that would change source document information reflected in this publication, that directorate will include a proposed change to this publication as an enclosure to its proposal. The Military Services and other organizations are requested to notify the Director, J-7, Joint Staff, when changes to source documents reflected in this publication are initiated.

c. Record of Changes:

CHANGE NUMBER	COPY NUMBER	DATE OF CHANGE	DATE ENTERED	POSTED BY	REMARKS

5. Distribution

a. Additional copies of this publication can be obtained through Service publication centers listed below (initial contact) or the USJFCOM JWFC in the event that the joint publication is not available from the Service.

b. Only approved joint publications and joint test publications are releasable outside the combatant commands, Services, and Joint Staff. Release of any classified joint publication to foreign governments or foreign nationals must be requested through the local embassy (Defense Attaché Office) to DIA Foreign Liaison Office, PO-FL, Room 1E811, 7400 Defense Pentagon, Washington, DC 20301-7400.

c. Additional copies should be obtained from the Military Service assigned administrative support responsibility by DOD Directive 5100.3, 15 November 1999, *Support of the Headquarters of Unified, Specified, and Subordinate Joint Commands*.

Army:	US Army AG Publication Center SL 1655 Woodson Road Attn: Joint Publications St. Louis, MO 63114-6181
Air Force:	Air Force Publications Distribution Center 2800 Eastern Boulevard Baltimore, MD 21220-2896
Navy:	CO, Naval Inventory Control Point 700 Robbins Avenue Bldg 1, Customer Service Philadelphia, PA 19111-5099
Marine Corps:	Commander (Attn: Publications) 814 Radford Blvd, Suite 20321 Albany, GA 31704-0321
Coast Guard:	Commandant Coast Guard (G-OPD), US Coast Guard 2100 2nd Street, SW Washington, DC 20593-0001 Commander USJFCOM JWFC Code JW2102 Doctrine Division (Publication Distribution) 116 Lake View Parkway Suffolk, VA 23435-2697

d. Local reproduction is authorized and access to unclassified publications is unrestricted. However, access to and reproduction authorization for classified joint publications must be in accordance with DOD Regulation 5200.1-R, *Information Security Program*.

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GLOSSARY

PART I — ABBREVIATIONS AND ACRONYMS

AABFS	amphibious assault bulk fuel system
ABFDS	aerial bulk fuel delivery system
ACSA	acquisition and cross-servicing agreement
AIK	assistance in kind
AMC	Air Mobility Command
BPA	blanket purchase agreement
CJCSM	Chairman of the Joint Chiefs of Staff manual
CONPLAN	operation plan in concept format
DESC	Defense Energy Support Center
DFSP	Defense Fuel Support Point
DLA	Defense Logistics Agency
DOD	Department of Defense
DODD	Department of Defense directive
DODM	Department of Defense manual
DOS	days of supply
FUNCPLAN	functional plan
HN	host nation
HNS	host-nation support
HQ	headquarters
ICIS	integrated consumable item support
IMM	integrated materiel management
IMP	inventory management plan
IPDP	inland petroleum distribution plan
IPDS	inland petroleum distribution system (Army)
J-4	logistics directorate of a joint staff
JFC	joint force commander
JLOTS	joint logistics over-the-shore
JMPAB	Joint Materiel Priorities and Allocation Board
JOA	joint operations area
JP	joint publication
JPO	Joint Petroleum Office
JTF	joint task force
LN	lead nation
LOC	line of communications

MIL-STD	military standard
MNF	multinational force
MOOTW	military operations other than war
MPF	maritime pre-positioning force
MSC	Military Sealift Command
NATO	North Atlantic Treaty Organization
NBC	nuclear, biological, and chemical
OEBGD	Overseas Environmental Baseline Guidance Document
OPDS	offshore petroleum discharge system (Navy)
OPLAN	operation plan
OPORD	operation order
OSD	Office of the Secretary of Defense
POL	petroleum, oil, and lubricants
POLCAP	bulk petroleum capabilities report
POS	peacetime operating stocks
PWRR	petroleum war reserve requirements
PWRS	petroleum war reserve stocks
QA	quality assurance
QS	quality surveillance
QSR	quality surveillance representative
REPOL	bulk petroleum contingency report
RSN	role specialist nation
SAPO	subarea petroleum office
SMFT	semi-trailer mounted fabric tank
SOFA	status-of-forces agreement
TPFDD	time-phased force and deployment data
TSC	theater support command
USD(AT&L)	Under Secretary of Defense for Acquisition, Technology, and Logistics
USTRANSCOM	United States Transportation Command
WHNS	wartime host-nation support

PART II — TERMS AND DEFINITIONS

bulk petroleum product. A liquid petroleum product transported by various means and stored in tanks or containers having an individual fill capacity greater than 250 liters. (JP 1-02)

bulk storage. 1. Storage in a warehouse of supplies and equipment in large quantities, usually in original containers, as distinguished from bin storage. 2. Storage of liquids, such as petroleum products in tanks, as distinguished from drum or packaged storage. (JP 1-02)

inland petroleum distribution system. A multi-product system consisting of both commercially available and military standard petroleum equipment that can be assembled by military personnel and, when assembled into an integrated petroleum distribution system, provides the military with the capability required to support an operational force with bulk fuels. The inland petroleum distribution system is comprised of three primary subsystems: tactical petroleum terminal, pipeline segments, and pump stations. Engineer units install the pipeline and construct the pump stations; Quartermaster units install the theater petroleum terminal and operate the total system when it is completed. Also called IPDS. (This term and its definition modify the existing term and its definition and are approved for inclusion in the next edition of JP 1-02.)

Integrated Consumable Item Support. A decision support system that takes time-phased force and deployment data (i.e., Department of Defense deployment plans) and calculates the ability of the Defense Logistics Agency, the warehousing unit of the Department of Defense, to support those plans. Integrated Consumable Item Support can calculate for the planned deployment supply/demand curves for over two million individual items stocked by the Defense Logistics Agency in support of deployment. Integrated Consumable Item Support allows planners to identify critical-end items and anticipated shortfalls in the Defense Logistics Agency inventories. Integrated Consumable Item Support provides materiel readiness information for Defense Logistics Agency-managed items to Defense Logistics Agency management, to all Services, and to the Joint Staff, to be used as a piece of the larger wartime logistic picture, which ultimately is used to assess total readiness and sustainability for deliberately planned contingencies. The goals and objectives of Integrated Consumable Item Support are to know the “war stoppers,” know the weapons systems affected, and know when the Defense Logistics Agency will run out of stock. Also called ICIS. (Approved for inclusion in the next edition of JP 1-02.)

integrated materiel management. The exercise of total Department of Defense-level management responsibility for a federal supply group or class, commodity, or item for a single agency. It normally includes computation of requirements, funding, budgeting, storing, issuing, cataloging, standardizing, and procuring functions. Also called IMM. (JP 1-02)

lead nation. One nation assumes the responsibility for procuring and providing a broad spectrum of logistic support for all or a part of the multinational force and/or headquarters. Compensation and/or reimbursement will then be subject to agreements between the parties involved. The lead nation may also assume the responsibility to coordinate logistics of the other nations within its functional and regional area of responsibility. (JP 1-02)

offshore bulk fuel system. The system used for transferring fuel from points offshore to reception facilities on the beach. It consists of two subsystems: amphibious assault bulk fuel system and the offshore petroleum discharge system. (JP 1-02)

offshore petroleum discharge system. Provides a semipermanent, all-weather facility for bulk transfer of petroleum, oil, and lubricants (POL) directly from an offshore tanker to a beach termination unit (BTU) located immediately inland from the high watermark. POL then is either transported inland or stored in the beach support area. Major offshore petroleum discharge systems (OPDS) components are: the OPDS tanker with booster pumps and spread mooring winches; a recoverable single anchor leg mooring (SALM) to accommodate tankers of up to 70,000 deadweight tons; ship to SALM hose lines; up to 4 miles of 6-inch (internal diameter) conduit for pumping to the beach; and two BTUs to interface with the shoreside systems. OPDS can support a two line system for multiproduct discharge, but ship standoff distance is reduced from 4 to 2 miles. Amphibious construction battalions install the OPDS with underwater construction team assistance. OPDS are embarked on selected Ready Reserve Force tankers modified to support the system. Also called OPDS. (This term and its definition modify the existing term and its definition and are approved for inclusion in the next edition of JP 1-02.)

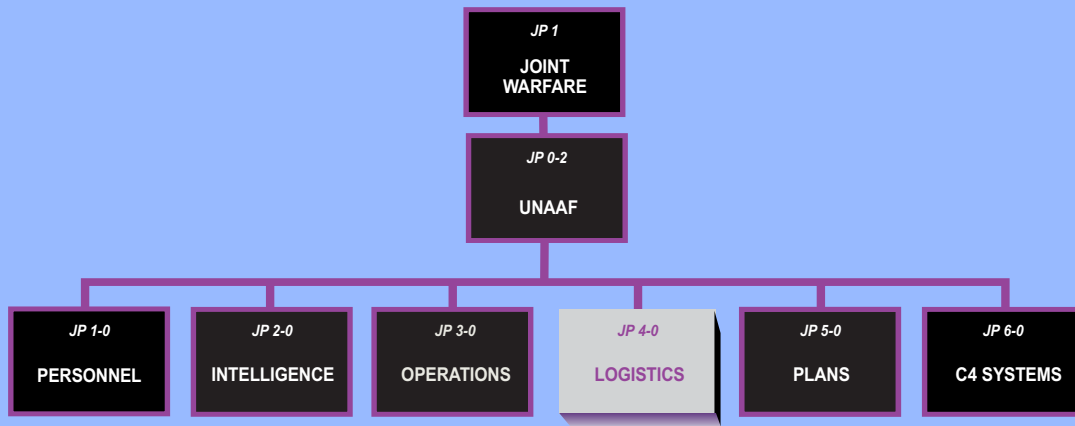
packaged petroleum product. A petroleum product (generally a lubricant, oil, grease, or specialty item) normally packaged by a manufacturer and procured, stored, transported, and issued in containers having a fill capacity of 55 United States gallons (or 45 Imperial gallons, or 205 liters) or less. (JP 1-02)

peacetime operating stocks. Logistics resources on hand or on order necessary to support day-to-day operational requirements, and which, in part, can also be used to offset sustaining requirements. Also called POS. (This term and its definition modify the existing term “primary operating stocks” and its definition and are approved for inclusion in the next edition of JP 1-02.)

petroleum, oil, and lubricants. A broad term that includes all petroleum and associated products used by the Armed Forces. Also called POL. (This term and its definition modify the existing term and its definition and are approved for inclusion in the next edition of JP 1-02.)

role specialist nation. A nation that has agreed to assume responsibility for providing a particular class of supply or service for all or part of the multinational force. Also called RSN. (JP 1-02)

JOINT DOCTRINE PUBLICATIONS HIERARCHY



All joint doctrine and tactics, techniques, and procedures are organized into a comprehensive hierarchy as shown in the chart above. **Joint Publication (JP) 4-03** is in the **Logistics** series of joint doctrine publications. The diagram below illustrates an overview of the development process:

