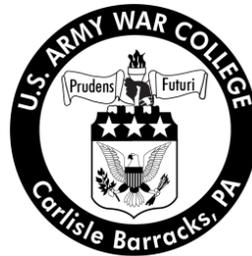


Can the Army Provide Bulk Petroleum Support to Joint Force 2020?

by

Colonel Alan D. Woodard
United States Army



United States Army War College
Class of 2013

DISTRIBUTION STATEMENT: A

Approved for Public Release
Distribution is Unlimited

This manuscript is submitted in partial fulfillment of the requirements of the Master of Strategic Studies Degree. The views expressed in this student academic research paper are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.

The U.S. Army War College is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools, 3624 Market Street, Philadelphia, PA 19104, (215) 662-5606. The Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation.

REPORT DOCUMENTATION PAGEForm Approved
OMB No. 0704-0188

The public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. **PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.**

1. REPORT DATE (DD-MM-YYYY) xx-03-2013		2. REPORT TYPE STRATEGY RESEARCH PROJECT		3. DATES COVERED (From - To)	
4. TITLE AND SUBTITLE Can the Army Provide Bulk Petroleum Support to Joint Force 2020?				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) Colonel Alan D. Woodard United States Army				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Colonel Brett D. Weigle Department of Distance Education				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army War College 122 Forbes Avenue Carlisle, PA 17013				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION / AVAILABILITY STATEMENT Distribution A: Approved for Public Release. Distribution is Unlimited.					
13. SUPPLEMENTARY NOTES Word Count: 5075					
14. ABSTRACT Over the last several years, the Army has reduced its total force structure of petroleum units and moved most Active petroleum units into the Reserves to offset manning for the Army to modernize Brigade Combat Teams. The Army plans to eliminate the Quartermaster Groups from both the Active and Reserve force, shifting their theater-level fuel oversight mission to the Sustainment Brigades, and move all Petroleum Battalions to the Reserve force. This reduction in force structure and heavy dependence on the Reserves has created capability gaps for the Army to accomplish its DOD-directed mission of providing bulk fuel support to the joint force. The U.S. Army Combined Arms Support Command has developed a course of action to close these capability gaps. However, the recommended changes fall short of enabling the Army to properly support Joint Force 2020 as envisioned in the 2012 Defense Strategic Guidance "Sustaining U.S. Global Leadership: Priorities for 21st Century Defense." This paper provides a more robust recommendation to close the capability gaps and position the Army to accomplish its mission of inland bulk fuel distribution for the joint force.					
15. SUBJECT TERMS Army Fuel Force Structure, Army Fuel Capability Gaps					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT UU	18. NUMBER OF PAGES 32	19a. NAME OF RESPONSIBLE PERSON
a. REPORT UU	b. ABSTRACT UU	c. THIS PAGE UU			19b. TELEPHONE NUMBER (Include area code)

USAWC STRATEGY RESEARCH PROJECT

Can the Army Provide Bulk Petroleum Support to Joint Force 2020?

by

Colonel Alan D. Woodard
United States Army

Colonel Brett D. Weigle
Department of Distance Education
Project Adviser

This manuscript is submitted in partial fulfillment of the requirements of the Master of Strategic Studies Degree. The U.S. Army War College is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools, 3624 Market Street, Philadelphia, PA 19104, (215) 662-5606. The Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation.

The views expressed in this student academic research paper are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.

U.S. Army War College
CARLISLE BARRACKS, PENNSYLVANIA 17013

Abstract

Title: Can the Army Provide Bulk Petroleum Support to Joint Force 2020?

Report Date: March 2013

Page Count: 32

Word Count: 5075

Key Terms: Army Fuel Force Structure, Army Fuel Capability Gaps

Classification: Unclassified

Over the last several years, the Army has reduced its total force structure of petroleum units and moved most Active petroleum units into the Reserves to offset manning for the Army to modernize Brigade Combat Teams. The Army plans to eliminate the Quartermaster Groups from both the Active and Reserve force, shifting their theater-level fuel oversight mission to the Sustainment Brigades, and move all Petroleum Battalions to the Reserve force. This reduction in force structure and heavy dependence on the Reserves has created capability gaps for the Army to accomplish its DOD-directed mission of providing bulk fuel support to the joint force. The U.S. Army Combined Arms Support Command has developed a course of action to close these capability gaps. However, the recommended changes fall short of enabling the Army to properly support Joint Force 2020 as envisioned in the 2012 Defense Strategic Guidance "Sustaining U.S. Global Leadership: Priorities for 21st Century Defense." This paper provides a more robust recommendation to close the capability gaps and position the Army to accomplish its mission of inland bulk fuel distribution for the joint force.

Can the Army Provide Bulk Petroleum Support to Joint Force 2020?

After ten years of war in Afghanistan and Iraq, the United States military must learn from its experiences and prepare for the future. GEN Martin Dempsey, Chairman of the Joint Chiefs of Staff, issued the *Capstone Concept for Joint Operations: Joint Force 2020* (CCJO) with the purpose of developing new concepts of operation to meet requirements laid out in the 2012 Defense Strategic Guidance, "Sustaining U.S. Global Leadership: Priorities for 21st Century Defense."¹ The focus of this paper will be the Army's ability to support the joint force by providing bulk petroleum support, both currently and into the future, with its current and proposed force structure changes. Key is the requirement of the military to meet the challenges of the future security environment to protect U.S. national interests. Doing so requires quick planning and conduct of military operations and the ability to operate effectively anywhere in the world on short notice.²

Over the last few years, the Army has reduced the total force structure of its petroleum units as a bill payer for other force modernization efforts and moved much of the remaining fuel capability into the Army Reserves. Writing in *Army Sustainment*, MG Larry Wyche, commander of the U.S. Army Combined Arms Support Command and Sustainment Center of Excellence, acknowledged the creation of serious gaps in the Army's petroleum support force structure. "As a result of reduced resources and end strength reductions, logistics capabilities may be shifted to echelons above brigade (EAB) in order to balance the brigade combat teams (BCT). Capabilities such as ... some bulk fuel distribution and storage ...create tactical level sustainment gaps."³

This paper will examine the Army's ability to support Joint Force 2020 with bulk petroleum. It will review the joint and service responsibilities and doctrine to execute this

support across the force. Next, a review of the Army's force structure for petroleum support will cover headquarters and units, both Active and Reserve components. Finally, a risk analysis of the capability gap will lead to recommendations for adjusting force structure to close the gap.

Joint and Other Services Bulk Fuel Support

The Department of Defense (DOD) executive agent for bulk petroleum is the Defense Logistics Agency (DLA), as assigned by DoDD 5101.8 *DOD Executive Agent (DOD EA) for Bulk Petroleum*. DLA further delegated the EA function to its subordinate organization, Defense Logistics Agency – Energy (DLA-E).

Key responsibilities of DLA-E are:

Ensuring peacetime efficient and wartime effective customer support; acquiring, storing, and distributing bulk petroleum to all DoD customers, wherever and whenever it is needed across the full range of operational situations, with the goal of providing the appropriate fuel support for every weapon system; integrating civil and military petroleum capabilities when possible throughout the world where military operations occur... providing fuel support to the Combatant Commanders to meet their operational requirements.⁴

The Secretary of Defense holds the Navy responsible for wartime planning and management of forward-deployed seaward and over-the-water movement of fuel to the high-water mark for U.S. sea- and land-based forces of all DOD components. The Air Force is tasked to provide distribution of petroleum products by air. The Army will provide inland distribution of bulk petroleum from the high-water mark to all components within theater; the next section will expand on Army fuel responsibilities.⁵

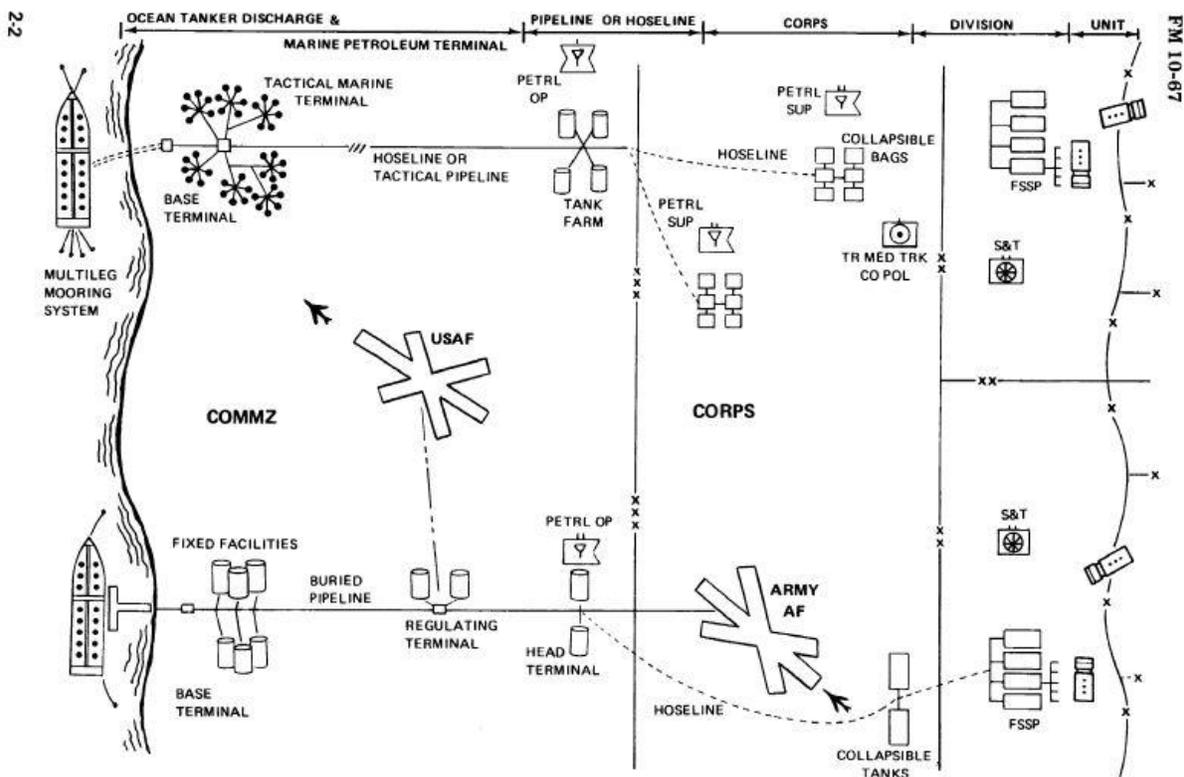


Figure 2-1. Bulk petroleum distribution system in a developed theater.

Figure 1 shows the multi-service nature of a typical fuel storage and distribution arrangement in a theater of operations. (FM 10-67 with change 1, 10 Oct 85)

Each service is responsible for handling bulk petroleum at the operational level by coordinating all fuel issues during single service, joint, and multinational operations with two offices under the Joint Force Commander: the Joint Petroleum Officer (JPO) and one or more Sub Area Petroleum Officers (SAPO). The JPO coordinates petroleum support to all forces in a theater on behalf the geographical Combatant Commander. With support from embedded fuel planners seconded from DLA-E, the JPO plans, coordinates and oversees all phases of bulk petroleum support for U.S. forces and other organizations employed or planned for possible employment in the theater.⁶

Another key position is the SAPO, established by the Combatant Commander or a Joint Force Commander (JFC) to fulfill bulk petroleum planning and execution in a section of the theater for which the JPO is responsible.⁷ A key duty of the SAPO is to advise the JFC and his/her staff on petroleum logistics planning and policy, and provide service components and commands with the JFC's petroleum logistics plans and policy.⁸ During Operations IRAQI FREEDOM and ENDURING FREEDOM, the U.S. Central Command (CENTCOM) JPO received support from a SAPO established in Kuwait. This Army officer worked in the Theater Sustainment Command support operations section to oversee petroleum operations in a geographically-specific area of the CENTCOM area of operation.

Army Bulk Fuel Support

The Secretary of the Army's responsibility (as directed by DODD 4140.25 *DOD Management Policy for Energy Commodities and Related Services*) is to provide:

Wartime planning and management of overland petroleum distribution support, including inland waterways, to U.S. 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. Provide necessary force structure to operate and install tactical petroleum storage and distribution systems, including pipelines.⁹

The Army logistics organization that supports the geographic Combatant Commander in planning and mission command of sustainment forces within a geographic region is the Theater Sustainment Command (TSC). The mission of the TSC is to plan, prepare, rapidly deploy, and execute operational-level logistics operations within an assigned theater. The TSC is capable of planning, controlling, and synchronizing operational-level Army deployment and sustainment for the Army Service Component Command or the JFC. It provides a centralized logistics command and

control (C2) structure for the theater Army; the TSC simultaneously supports the tasks of deployment, movement, sustainment, redeployment, reconstitution and retrograde, to include synchronizing the supply of fuel in the Joint Operations Area.¹⁰

The TSC task organization to support the receipt, storage and distribution of fuel consists of the following units: Expeditionary Sustainment Command (ESC), Sustainment Brigade, Combat Sustainment Support Battalion (CSSB), Petroleum Supply Battalion and Company, Petroleum Pipeline and Terminal Operating (PPTO) Battalion and Company, and Quartermaster Petroleum Liaison Teams; each of these units will be addressed in this paper. A key fuel organization that is no longer part of the Army force structure is the Quartermaster (QM) Group (Petroleum). In 2012, the only active duty QM Group inactivated while the remaining Reserve QM Group is scheduled for inactivation by 2015.¹¹ The elimination of QM Groups from the Army's force structure leaves a gap in the ability of the Army to provide mission command of subordinate petroleum units and support the Joint Force 2020 logistics requirements. This paper will address this capability gap in a later section.

The QM Group is responsible for inland bulk fuel distribution at the operational level; managing theater petroleum stocks; providing a base petroleum products laboratory for quality assurance; and coordinating petroleum procurement with its supporting JPO. The group oversees the construction of petroleum facilities in a theater. It provides mission command for Petroleum Pipeline and Terminal Operating Battalions and Petroleum Supply Battalions. These battalions operate and maintain petroleum distribution facilities that support the theater petroleum mission.¹²

The Expeditionary Sustainment Command (ESC) provides mission command for attached units in an area of operation as defined by the TSC. As a deployable command post for the TSC, the ESC provides operational reach and span of control. The ESC plans and executes sustainment, distribution, theater opening, and reception, staging, and onward movement for Army forces. The ESC may serve as the basis for an expeditionary joint sustainment command when directed by the Combatant Commander or a designated Joint Force Commander, with one task being to synchronize the supply of fuel in the Joint Operations Area.¹³

The Sustainment Brigade provides mission command and staff supervision of life support activities and distribution management (to include movement control) as an integral component of the theater distribution system. Mission requirements determine the mix of functional and multifunctional subordinate battalions under its control. The Sustainment Brigade materiel management effort is focused on the management of its supply support activities in accordance with TSC plans, programs, policies, and directives. The Sustainment Brigade may also provide materiel management of bulk supplies through oversight of stockage areas such as bulk fuel and ammunition storage areas.¹⁴

The Combat Sustainment Support Battalion (CSSB) is a tailored, multifunctional logistics organization assigned to the Sustainment Brigade. The elements of the CSSB consist of functional companies providing supplies, ammunition, fuel, water, transportation, cargo transfer, mortuary affairs, maintenance, field services, and human resources management. Quartermaster Petroleum Support companies are assigned to the CSSB to provide storage and distribution of bulk petroleum for supported units.¹⁵

The Quartermaster Petroleum Liaison Team coordinates bulk fuel support between U.S., allied, and host nation forces with an emphasis on ensuring interoperability between various fuel distribution equipment. This team of ten officers and NCOs is doctrinally assigned to the TSC, ESC or Sustainment Brigade, where a focus of its mission is the coordination with DLA-Energy for delivery/distribution, transportation and inventory control of bulk fuel. The team is often the main repository of fuel laboratory experience in a theater and insures proper quality surveillance procedures are used to meet U.S. military fuel standards.¹⁶

The Petroleum Supply Battalion provides mission command of all assigned and attached Petroleum Supply Companies and Petroleum Truck Companies. It synchronizes current and future petroleum distribution operations, and provides quality surveillance and area laboratory analysis support for the Sustainment Brigade.¹⁷ The Petroleum Truck Company can distribute 900,000 gallons per day local haul and 450,000 gallons per day line haul using 5,000 gallon tankers, and 1,350,000 gallons per day local haul and 675,000 gallons per day line haul using 7,500 gallon tankers.¹⁸

The Petroleum Supply Company receives, stores, issues and provides limited distribution of bulk petroleum products. The three platoons of the Petroleum Supply Company employ collapsible fabric fuel storage tanks (commonly called “bags”), holding either 50,000 (50K) gallons or 210,000 (210K) gallons. A unit equipped with 50K bags can store up to 1,800,000 gallons while receiving and issuing 1,200,000 gallons per day. A company using 210K bags is able to store up to 1,800,000 gallons of fuel with a daily throughput of 1,935,000 gallons.¹⁹

The Petroleum Pipeline and Terminal Operating (PPTO) Battalion provides mission command of all assigned and attached Petroleum Pipeline and Terminal Operating (PPTO) Companies, Petroleum Truck Companies and other assigned units. The battalion operates and maintains petroleum distribution facilities required to support the theater support mission. The battalion is responsible for operating ports of entry, pipelines, the tactical marine terminal and other facilities capable of storing 500,000 to 2,500,000 barrels of bulk petroleum products.²⁰ A barrel is equivalent to 42 U.S. gallons.

The Petroleum Pipeline and Terminal Operating Company operates petroleum pipeline and terminal facilities for receipt, storage, issue and distribution of bulk petroleum products. The company operates fixed or tactical petroleum terminals for bulk petroleum storage, using 210,000 gallon collapsible fabric fuel storage tanks. The company also runs up to 90 miles of pipeline which distributes approximately 720,000 gallons per day using six pump stations. The company is capable of operating facilities for shipment of bulk petroleum by tanker, barge, rail and tank trucks.²¹

Reductions in Army Bulk Fuel Force Structure

The force structure changes impacting Army petroleum units began with the Total Army Analysis (TAA) 10-15 and continued with TAA 12-17. The primary focus of the Army TAA was the transformation of the Army to a modular Brigade Combat Team (BCT)-centric force.²² The Army petroleum force structure was used to create the spaces for BCT organizations that were designated as a higher priority for the Army. The TAA design eliminated the QM Groups from the Active and Reserve force, shifting the mission and tasks performed by them to the Sustainment Brigades. The TAA design placed all remaining Petroleum Pipeline and Terminal Operating Battalions and Petroleum Supply Battalions into the Reserve force. As a result, the Army divested itself

of strategic and operational level fuel sustainment while focusing primarily on tactical sustainment.²³

This move created the loss of subject-matter expertise to plan, conduct and manage petroleum operations. Fuel management positions of progressive responsibility – from company to battalion staff to group staff – were no longer available for the professional development of petroleum officers, warrant officers and noncommissioned officers. It reduced early-entry capabilities for contingency response; increased reliance on assured access to trained and ready Reserve units; and furthered dependence on DLA-E contractors. The move impacted local national and BCT tactical resources to link strategic distribution to tactical sustainment.²⁴ The risks associated with the proposed reduction in Army petroleum unit force structure and movement of petroleum units to the Reserve component were highlighted in the 2010 Quartermaster Symposium. The focus of the brief informed Army logistics leadership on force structure gaps in inland distribution and storage of fuel, especially for early-entry and short-notice contingency operations.²⁵

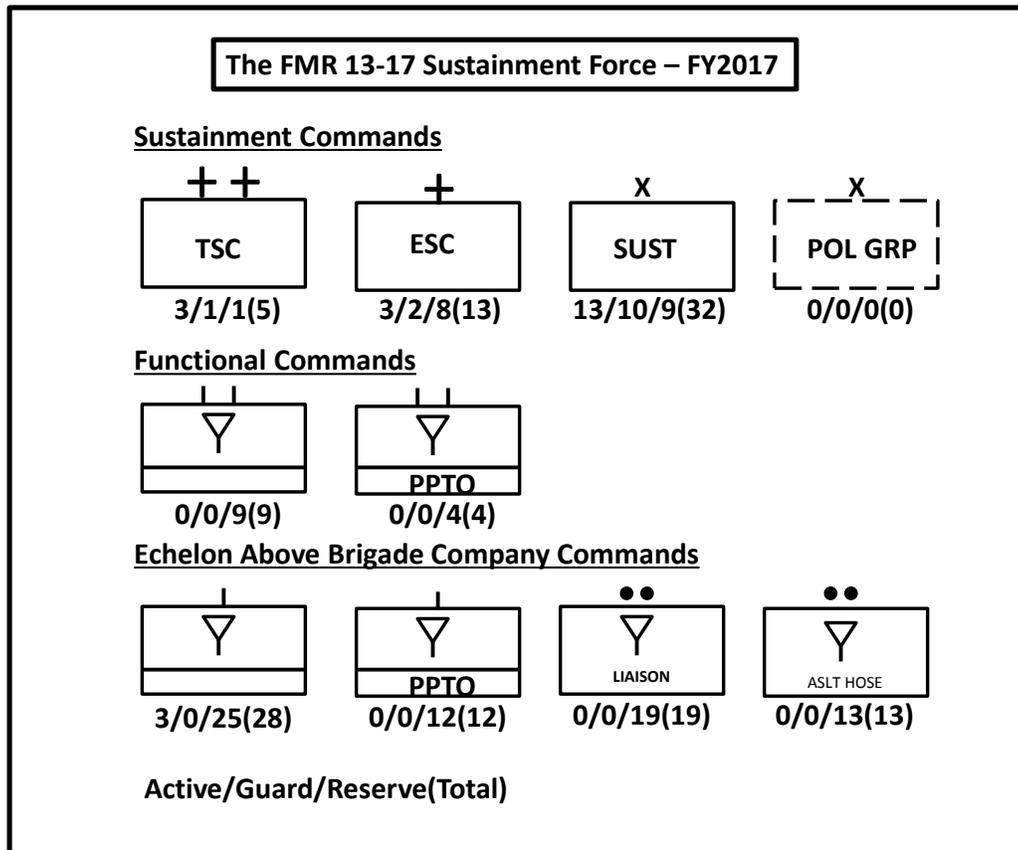


Figure 2. Force Management Review 13-17, Sustainment Force FY2017

Army sustainment leadership is re-looking the impacts of TAA 12-17 and its attendant inactivation of Army petroleum force structure or its movement into the Reserve component. Officials from the Army Deputy Chief of Staff for Logistics/G-4, Army Combined Arms Support Command and the Army Petroleum Center, and from Defense Logistics Agency-Energy and other members of the joint petroleum community, expressed concern over the Army's future strategic and operational fuel planning capability in the TSC and ESC. They also felt that the Army had lost the required capability for doctrinal, tactical execution of fuel storage and distribution during the early-entry phase of operations at the Sustainment Brigade and its subordinate

echelons.²⁶ The Army Combined Arms Support Command (CASCOM) Sustainment Center of Excellence developed a problem statement to address the issue of early-entry petroleum organization.

How best to address the capability gaps in the strategic and operational planning for petroleum operations at the TSC and ESC, and execution of tactical petroleum operations at the Sustainment Brigade and below during the early entry phases of operations, and develop a petroleum force structure and career model that produces technically proficient petroleum NCOs, Warrant Officers, and Officers.²⁷

The impact of the reduction and realignment of Army petroleum units is especially dramatic given that while petroleum unit structure decreased, combat units increased with the attendant demand for more bulk fuel due to their mechanized nature. The Army's petroleum unit force structure in TAA 10-15 maintained 137 petroleum units: 6% in the Active Army, 19% in the Army National Guard and 75% in the Army Reserve. The outcome of TAA 12-17 reduced the petroleum force structure by a further 13%, leaving only 119 petroleum units in the Army: 4% in the Active Army, 5% in the Army National Guard and 91% in the Army Reserve.²⁸

Four Gaps in Army Bulk Fuel Support Capabilities

CASCOM identified four capability gaps resulting from the TAA reduction in units and redistribution between the Army components. The first is related to mission command of Army fuel units and the accompanying doctrine, organization, leadership and personnel. The Sustainment Brigade and CSSB petroleum staff sections are not designed to perform the same dedicated, comprehensive oversight of fuel operations as the QM Group and the Petroleum Battalion, with the resulting degradation of initial theater petroleum operations. The complete elimination of the QM Group now places the responsibility of mission command on the Sustainment Brigade. This difficulty is

most apparent in the absence of an active-duty Petroleum Battalion to oversee the petroleum operations between the Sustainment Brigade and QM Petroleum Support Company. The movement of all Petroleum Battalions to the Army Reserve leaves mission command of the three Active Army QM Petroleum Support Companies to the CSSB without the requisite fuel expertise.²⁹

The second gap identified early-entry tactical fuel receipt and distribution in relation to organization and materiel. With movement of petroleum units to the Reserves, the Army lost the capability to receive or distribute fuel during early phases of an operation since mobilizing a Reserve unit can take between 50 and 60 days. This delay affects the establishment of terminal receipt and tactical inland distribution of fuel utilizing the inland petroleum distribution system (the IPDS is a portable, tactical pipeline with its own pumps and bags). This lack of capability in the Active force limits the Combatant Commander's ability to provide bulk fuel in support of the Joint Force.³⁰

The third gap concerns the lack of petroleum liaison, quality assurance/quality surveillance (QA/QS), and engineer oversight for fuel-related construction. The capabilities previously resident in the QM Group now require mobilization of QM Petroleum Liaison Teams from the Reserves. The staff engineer branch within the Petroleum Battalion and the QM Group that previously planned and supervised construction of IPDS no longer exists. That task now resides with the Sustainment Brigade and CSSB, who are given no additional resources to accomplish this specialized engineer mission.³¹

The fourth gap acknowledges the lack of petroleum expertise at all Army echelons related to organization, training, leadership and personnel. The ability to

develop senior petroleum officers and noncommissioned officers through sequential fuel support jobs at increasingly higher echelons has been severely reduced by the elimination of these positions. This knowledge deficit in fuel support planning and supervision affects not only the Army (the Army Staff, Army Service Component Commands and logistics units) but has had a ripple effect into the joint petroleum community. Suddenly, experienced Army fuel personnel are no longer available for assignments as JPOs, SAPOs or in positions at DLA-E.³²

At the strategic level, the Army no longer maintains the capacity to develop technical expertise in the planning and coordination of petroleum commodity management. The operational or theater level is impacted by loss of colonels with the requisite experience to serve as a senior theater petroleum planner or SAPO; the incumbents find themselves untrained to perform QA/QS, liaison duties, and forecasting of fuel requirements and operational fuel synchronization across a large scale joint operation area. The tactical Army now has limited petroleum experience, loss of functional command, QA/QS and pipeline capability at early-entry ports and the already-mentioned deficit in petroleum-skilled engineer support and petroleum headquarters oversight of IPDS construction.³³ To address these gaps in Army petroleum operations, CASCOM generated three courses of action (COA).

Course of Action 1: Modify Planning and Execution Capability and Balance
Active/Reserve Component Structure

The Army should:

- add a pipeline section to one Active Army QM Petroleum Support Company;
- move three Assault Hoseline Teams, one Petroleum Battalion, and three QM Petroleum Liaison Teams from the Army Reserve back to the Active Army;

- supplement the manning of one of these Liaison Teams to provide colonel-level leadership capable of acting as a Theater Petroleum Center;
- balance support operations personnel on the Sustainment Brigade staff by increasing manning of the fuel and water branch from seven to ten personnel, and grow this manning on the ESC staff by one warrant officer and three NCOs;
- increase the grade level of fuel personnel assigned to the TSC petroleum staff section to facilitate fuel planning and support with the ESC.³⁴

This COA addresses the SAPO gap at colonel level and closes the liaison gap between ESC/TSC and DLA/industry during early-entry and steady-state operations by establishing the Theater Petroleum Center and robust QM Petroleum Liaison Teams. It solves the technical echelon gap between the QM Petroleum Support Company and the Sustainment Brigade by adding a Petroleum Battalion to the Active force as an intermediate headquarters, and mitigates the PPTO and QA/QS gap during early-entry operations. The increased manning in the Sustainment Brigade fuel and water staff branch provides capability to manage bulk fuel receipt and distribution in separate plans and operations functions. This COA will require a growth of 211 personnel spaces: 171 in the Active Army, 8 in the Army National Guard, and 32 in the Army Reserve.

The advantages of this COA are its fulfillment of Army responsibility under DODD 4140.25 for early-entry fuel support with minimal end-strength growth; provision of the minimum required pipeline capability (45 miles)³⁵ in the Active force while awaiting Reserve unit mobilization; support of Army Force Generation (ARFORGEN) with like units in both the Active and Reserve structure; development of colonels capable of operating at the theater level as SAPOs; and facilitation of technical skill development

in both officer and noncommissioned officer positions at progressive levels. COA 1 does have two disadvantages in that it makes one Active Army QM Petroleum Support Company different from its two sister companies and goes against the Army's trend toward multifunctional logistic organizations by reintroducing petroleum-specific force structure with an accompanying increase of field grade officer strength.³⁶

Course of Action 2: Expand the Modular Petroleum Force Design

The Army should:

- add a pipeline operating section to all three Active Army QM Petroleum Support Companies;
- move three Assault Hoseline Teams from the Reserve to the Active force;
- modify a CSSB for a fuel-specific mission;
- balance the support operations section in the Sustainment Brigade;
- add an organic QM Petroleum Liaison Team, staff expertise in fuel QA/QS, and dedicated engineer pipeline capability to both the ESC and TSC staffs.

This COA requires an increase of 463 spaces: 274 in the Active Army, 42 in the Army National Guard, and 147 in the Army Reserve.

The advantages of this COA are its mitigation of the liaison gap between ESC/TSC and DLA/industry, the filling of the PPTO and QA/QS deficits during early phases of operations, and the closure of the technical echelon gap between the QM Petroleum Support Company and the Sustainment Brigade with the introduction of a CSSB augmented with fuel planning capability. COA 2 also standardizes all Active Army QM Petroleum Support Companies while providing the Sustainment Brigade with sufficient capability to manage bulk fuel receipt and distribution through a separate

petroleum plans and operations function. Its three disadvantages are its excessive personnel growth with no identified “bill payers,” its creation of an Active Army CSSB focused on a single commodity, and its failure to address the dearth of Army officers qualified to serve as a SAPO.

Course of Action 3: Keep the Status Quo

CASCOM assessed the third COA as not feasible since it does not address the four identified gaps and does not support the Army’s responsibility under DODD 4140.25 to provide inland distribution of petroleum during early phases of operations. Its lack of Active Army petroleum force structure prevents the Army from rapidly supporting the Joint Force in globally integrated operations as laid out in the CCJO.

The Army’s Way Ahead for Bulk Petroleum Force Structure

On April 23, 2012, the CASCOM commander, MG James Hodge, approved Course of Action 1 “Modify Planning and Execution Capability and Balance Active/Reserve Structure.”³⁷ This action provides the greatest increase in capability without excessive manning growth, provides IPDS capability during early phases of operations and mission command at the tactical level, and resources sufficient staff oversight at tactical and operational levels and technically proficient personnel at the strategic level.

The approved COA closes the gaps with varying levels of success. It is simply an attempt to mitigate the shortcoming in petroleum operations caused by the elimination of the QM Group from both the Active and Reserve force structure and the movement of numerous petroleum organizations from the Active Army to the Army Reserve. The approved COA falls short by not providing a colonel commander with experience at planning and the ability to issue orders for mission command of petroleum operations.

The proposed increases in staff sections at all levels are meant to alleviate the deficit once filled by the colonel commander of the QM Group: provide theater level bulk petroleum supply and distribution, petroleum quality surveillance and petroleum liaison.

Army force developers are confronted with the challenges of developing the right force structure to meet the objectives of Joint Force 2020 while balancing end strength against fiscal and legislative constraints. The combat operations over the last decade of war have proven that the military must work as a Joint force and a mixture of Active and Reserve forces is necessary to accomplish the force sustainment mission. The Army Reserves have proven their ability to accomplish the mission and meet the challenges assigned. As the military draws down from Operations IRAQI FREEDOM and ENDURING FREEDOM, it must look to the future and develop the requisite force structure, manning and live and simulated training needed to meet that future. Until the military no longer depends on large quantities of petroleum products, it must maintain a force capable of providing bulk petroleum to the Joint force. A fourth course of action is required to meet the challenge of providing this capability to any future Joint Force Commander.

Recommended Course of Action 4: Bring Back the QM Petroleum Group

To close the remaining gaps in petroleum operations asserted in this paper, the Army must reactivate one QM Petroleum Group. This headquarters must be multicomponent, with both Active and Reserve members to maximize planning and training of both Active and Reserve petroleum units. This closes the gap of providing mission command of petroleum units during early- entry operations and the initial establishment of sustained operations. With the QM Group comes the added capability of theater-level QA/QS supervision and engineer pipeline support.

No other organization accomplished the Mission Essential Tasks of managing petroleum terminal and petroleum pipeline/hoseline operations and planning coordinating petroleum support operations. The QM Group is also manned to manage fuel QS and safety programs and construct petroleum distribution systems, including coordinating host nation support, planning construction and installation service support and providing contracting support.³⁸

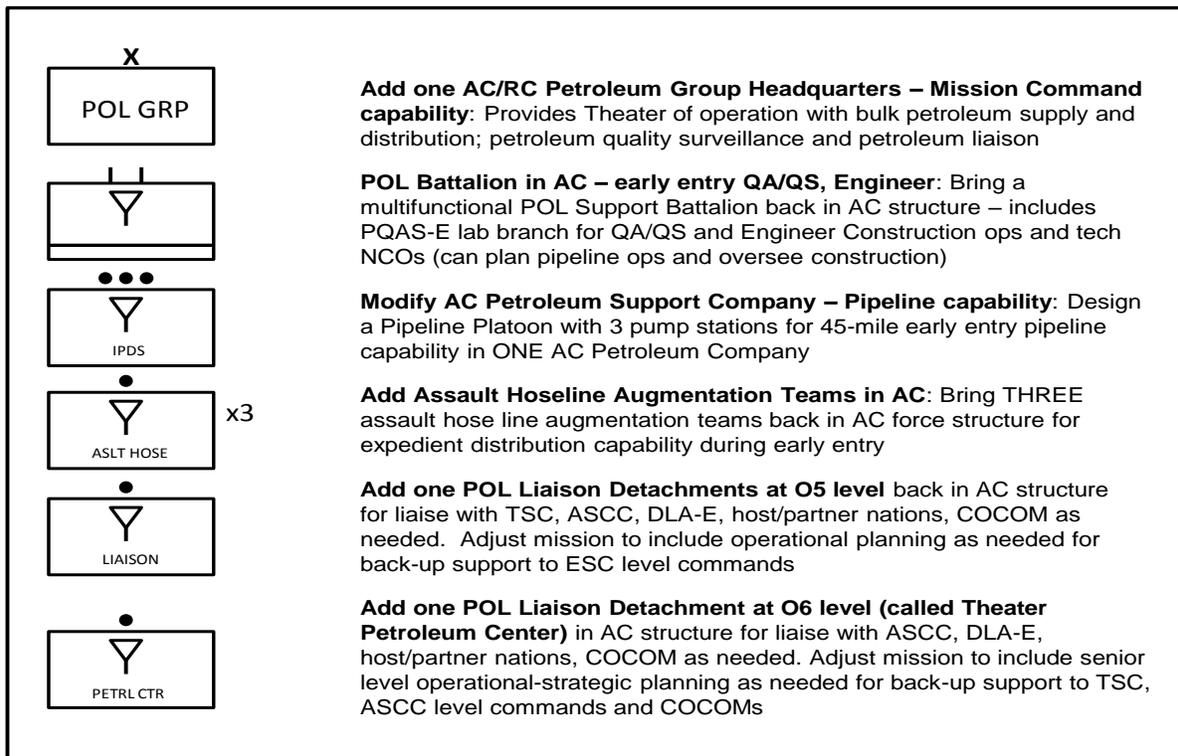


Figure 3. COA 4 Bulk Fuel Force Structure

The COA 4 force structure provides for adaptive and flexible support to Joint Force 2020. This recommended change to Army force structure capitalizes on the broad experience of Active and Reserve soldiers and leaders at all levels. Active and Reserve petroleum units must continue to train together to meet the challenge. The U.S. Army Reserve Command and U.S. Army Forces Command must continue to conduct

multicomponent exercises to train from the strategic to the tactical level in fuel support planning and execution. A key exercise is the Quartermaster Liquid Logistics Exercise (QLLEX), a multi-echelon, multi-component, multifunctional and multi-service exercise. No other exercise in the Continental United States provides such a broad suite of real-world training opportunities for soldiers. This exercise brings units and staff at all levels together for hands-on fuel training through real-world distribution of bulk fuel. It involves petroleum transportation and engineering units training together to maintain proficiency at their required mission essential tasks. BG Peter Lennon, commander of the 316th ESC, observed:

QLLEX is amajor exercise in which we train at the tactical, operational, and strategic levels, from connecting the pumps and the hoses all the way up [to] coordinating with our strategic partner agencies. How do we coordinate with our national partners and international partners to get fuel into an austere environment, perhaps a less than benign environment at the outset of a contingency operation?... The AC structure for fuel and water distribution and production is significantly reducing as a result of force structure adjustments. We must have Soldiers who are trained and ready to respond very quickly.³⁹

The critical organization needed to prepare and plan this exercise is the QM Group with its commander and focused staff capable of bring synergy to the operation.

A critical capability required to support the Joint Force is the Army's ability to conduct Joint Logistics Over-The-Shore (JLOTS) operations. This is the process of loading and off-loading ships in austere areas where ports are damaged, unavailable, or without the benefit of adequate port facilities; a critical subset of JLOTS is the delivery of bulk fuel, especially during early phases of an operation. One of the Army's primary bulk fuel responsibilities under DODD 4140.25 is to emplace petroleum distribution systems to move bulk fuel inland from the high water mark. The Navy has the responsibility for deployment of the offshore petroleum discharge system which pumps fuel ashore to a

beach termination unit. The Army links its IPDS tactical pipeline to this facility and then pumps the fuel inland for onward distribution throughout the theater. The Joint doctrine directs the Navy to interface with the Army fuel component (a QM Group or a Petroleum Battalion) for installation of IPDS and tactical petroleum terminal beach interface units.⁴⁰ The time-critical bulk fuel JLOTS mission is yet another reason for returning the QM Group and Petroleum Battalions to the Active Army force.

Conclusions

The ability to meet the demands of flexible and responsive petroleum support to the Joint Force does not exist in the Army's current force structure. However, the current COA approved by CASCOM creates increased capacity for planning and liaison but falls short of the ability to completely and robustly execute bulk petroleum support to Joint Force 2020. Its addition of personnel at TSC, ESC and Sustainment Brigades cannot make up for the missing capabilities of a commander planning at the operational level and executing operations at the tactical level. This paper's recommendation to return to the Active force structure a QM Group, a Petroleum Battalion, three Liaison Detachments and small petroleum staff sections at several echelons will go a long way to closing this capability gap. COA 4 also provides opportunities for officers and NCOs to develop petroleum support planning skills necessary to function at all levels of sustainment operations.

To meet the impending challenge of constrained defense budgets, the Army must pursue merging training and operations among Active Army, Army National Guard and Army Reserve forces, sister services and other government agencies to meet the logistics demands of the Joint Force Commander. Exercises like QLLEX and practice for Joint Logistics Over the Shore are examples of bringing together units of all types to

accomplish the mission. Without the Active Army capability to provide mission command of Active and Reserve petroleum units, the Army will fall short of its responsibility under DODD 4140.25 to provide bulk fuel to meet the needs of Joint Force 2020.

Endnotes

¹ Department of Defense, *Sustaining U.S. Global Leadership: Priorities for 21st Century Defense* (Washington DC: Secretary of Defense, January 5, 2012).

² U.S. Joint Chiefs of Staff, *Capstone Concept for Joint Operations: Joint Force 2020* (Washington, DC: U.S. Joint Chiefs of Staff, September 10, 2012), 11.

³ MG Larry D. Wyche, "Sustaining the Army of 2020," *Army Sustainment*, Volume 45 Issue 1, January-February 2013, 2.

⁴ Undersecretary of Defense (Acquisition, Technology and Logistics), *DoD Executive Agent (DoD EA) for Bulk Petroleum*, Department of Defense Directive 5101.8 (Washington, DC: U.S. Department of Defense, August 11, 2004), 2.

⁵ Undersecretary of Defense (Acquisition, Technology and Logistics), *DoD Management Policy for Energy Commodities and Related Services*, Department of Defense Directive 4140.25 (Washington, DC: U.S. Department of Defense, April 12, 2004), 8.

⁶ U.S. Joint Chiefs of Staff, *Joint Bulk Petroleum and Water Doctrine*, Joint Publication 4-03 (Washington, DC: U.S. Joint Chiefs of Staff, December 9, 2010), V-2.

⁷ *Ibid.*, V-4.

⁸ *Ibid.*

⁹ DoDD 4140.25, *DoD Management Policy for Energy Commodities and Related Services*, 8.

¹⁰ U.S. Department of the Army, *Theater Sustainment Command*, Field Manual 4-94 (Washington, DC: Department of the Army, February 12, 2010), 2-2.

¹¹ LTC Kevin Daniels and Mr. Jose Hernandez, "Tomorrow's Petroleum Force," *Quartermaster Professional Bulletin*, October 31, 2012, 12.

¹² FM 4-94, *Theater Sustainment Command*, 2-23.

¹³ *Ibid.*, 2-19.

¹⁴ *Ibid.*, 2-24.

¹⁵ U.S. Department of the Army, *The Sustainment Brigade*, Field Manual Interim 4-93.2, (Washington, DC: Department of the Army, February 4, 2009), 4-3.

¹⁶ Force Development Directorate, *Sustainment Force Structure Book 2012* (Fort Lee, VA: Sustainment Center of Excellence, U.S. Army Combined Arms Support Command, May 23, 2012), 1085.

¹⁷ *Ibid.*, 1018.

¹⁸ U.S. Department of the Army, *Petroleum Supply in Theaters of Operation*, Field Manual 10-67 with Change 1 (Washington, DC: Department of the Army, October 10, 1985), 4-16.

¹⁹ *Ibid.*

²⁰ FM 10-67 with Change 1, *Petroleum Supply in Theaters of Operation*, 4-7.

²¹ FM (interim) 4-93.2, *The Sustainment Brigade*, 4-15.

²² COL Philip VonHoltz, "Outlook for Army Mobility Fuels Post TAA 12-17," briefing slides, Quartermaster Symposium (Fort Lee, VA, June 17, 2010), 3.

²³ *Ibid.*, 6.

²⁴ *Ibid.*

²⁵ *Ibid.*, 1.

²⁶ LTC Kevin Daniels, "Early Entry Petroleum Organization Review," briefing slides with scripted commentary (Fort Lee, VA: Sustainment Center of Excellence, U.S. Army Combined Arms Support Command, August 15, 2012), 4.

²⁷ *Ibid.*

²⁸ *Ibid.*, 5.

²⁹ *Ibid.*, 11.

³⁰ *Ibid.*

³¹ *Ibid.*

³² *Ibid.*

³³ *Ibid.*, 10.

³⁴ LTC Kevin Daniels, "Early Entry Petroleum Organization Review," 16.

³⁵ *Ibid.*

³⁶ *Ibid.*, 36.

³⁷ Ibid., 38.

³⁸ Army Training Network, *Quartermaster (POL) Group Mission Essential Training List*, Headquarters, Department of the Army Standardized METL, <https://atn.army.mil/fso/default.aspx> (accessed January 10, 2013).

³⁹ COL Philip C. Foster, "QLLEX: Real-World Training in Fuel and Water Supply," *Army Sustainment*, Volume 44 Issue 2, March-April 2012, 4-6.

⁴⁰ U.S. Joint Chiefs of Staff, *Joint Logistics Over the Shore*, Joint Publication 4-01.6 (Washington, DC: U.S. Joint Chiefs of Staff, November 27, 2012), ix, xi, II-4, V-6, V-7.

