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FY20 NDAA Fuel Tanker Study Unclassified Executive Summary Report

Approved:

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Executive Summary Report

Introduction

Over the past three decades, multiple Department of Defense (DoD) mobility studies have examined the sufficiency of the US Flag tanker fleet to meet National Defense Strategy (NDS) requirements. Joint Staff guidance previously permitted planners to assume access to all US Flag US-owned tankers, foreign flag tankers with agreements or contingency contracts, and foreign flag US-owned tankers from the Effective US Control (EUSC) fleet.¹ The studies generally determined the combined US-owned fleet, including tankers requisitioned from the domestic trade fleet and tankers requisitioned from the EUSC fleet, to be sufficient to meet the pacing demands of the planning scenarios. Where demand exceeded this US-owned capacity, the studies concluded that sufficient non-EUSC foreign flag capacity was available for charter off the commercial market.

There have been several recent changes to the strategic landscape that have raised questions on the sufficiency of the US Flag and US-owned tanker fleet to meet NDS requirements:

- The 2018 NDS identifies Russia and China as strategic vice near-peer competitors.² The NDS also acknowledges shifts in the global security environment, which will require the DoD to operate in a Contested Environment (CE) in all domains. To effectively operate in a CE, DoD will require resilient and agile logistics.
- The Voluntary Tanker Agreement (VTA) expired in 2014, leaving no emergency preparedness program for assured access to US Flag fuel tanker capacity.
- There are less than 50 militarily useful fuel tankers in the US Flag fleet. The majority are Jones Act tankers engaged in domestic trade. There is concern that accessing significant portions of the Jones Act fleet to support DoD contingency operations would disrupt the US economy at an unacceptable level.
- The US Maritime Administration (MARAD) determined that requisitioning of foreign-flag US-owned tankers in EUSC fleet is no longer a valid planning assumption due to the difficulty of tracking effective ownership and the likelihood that carriers would legally challenge the requisitioning provisions within the Defense Production Act of 1950.
- Though there is an abundance of foreign-flag tanker capacity. However, China's increasing influence and economic dominance of the global shipping industry is driving concern that DoD may not be able to continue accessing sufficient capacity or that accessing foreign flag capacity may increase risk.
- In April 2021, the Joint Staff amended its strategic guidance to require planners to

¹ The Effective US Control (EUSC) refers to a fleet of U.S.-owned merchant vessels that are registered outside the United States, usually under flags of convenience, and assumed to be available for requisition by the U.S. in time of crisis; MARAD

² Department of Defense, *National Defense Strategy*, 2018, <https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf>

account for risk when planning with EUSC capacity.³

These factors contribute to uncertainty in the DoD's ability to access a sufficient number of tankers when and where needed and to employ those tankers effectively in a Contested Environment.

Background

Section 3519 of the FY20 National Defense Authorization Act (NDAA) requires the DoD, in consultation with the Department of Transportation (DOT), to report the capacity and capability of the US Flag tanker fleet to meet the most stressing wartime requirements, to assess gaps in the US Flag tanker fleet to meet requirements, to assess the risk of reliance on foreign flag tankers, and to identify and assess solutions to address gaps in US Flag tanker requirements.

Section 3511 of the FY21 NDAA Congress authorized the Tanker Security Fleet, modeled after the Maritime Security Program (MSP). The Tanker Security Fleet is henceforth referred to as the Tanker Security Program (TSP). The TSP, if appropriated, will provide \$6M per tanker per year for up to 10 US Flag tankers operating in international trade in exchange for guaranteed access to the tankers in a DoD contingency. Appropriation of funds for the TSP is pending results of this study confirming the military value of the TSP.

Methodology

To address the report requirements, the study team employed the following methodology:

- Engaged the DoD Joint Petroleum Enterprise (JPE) and maritime community stakeholders to obtain domain knowledge.
- Contracted with the Institute for Defense Analyses (IDA) to draw from their commercial fuel expertise and estimate product tanker availability on the global market.
 - IDA engaged US and international tanker owners and operators via an industry survey and personal interviews.
 - IDA analyzed extensive commercial tanker data to quantify potential charter and “intake” rate of foreign flag tankers from owners and operators in Allied and friendly countries.
- Applied modeling and simulation tools to build and simulate fuel networks addressing three National Defense Strategy competitors – China, Russia and North Korea⁴.
- Determined wartime fuel requirements in coordination with Defense Logistics Agency (DLA)-Energy, US Indo-Pacific Command (USINDOPACOM), and US European Command Joint Petroleum Offices (JPO).
- Determined available US Flag tanker fleets in coordination with Military Sealift Command (MSC) and US Maritime Administration (MARAD).

³ CJCS, *Logistics Supplement to the Joint Strategic Campaign Plan (LOGSUP to JSCP)*, 2021

⁴ Department of Defense, *National Defense Strategy*, 2018, <https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf>

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- Introduced adversary actions to interdict the fuel network in the Contested Environment to observe the effects on fuel storage, ports, and tanker requirements.
- Determined gap in US Flag tankers and requirements for the most demanding wartime scenario, and analyzed the risk of reliance on foreign flag tankers in the Contested Environment.

The details of the analysis are included in the classified report. Major points that can be provided in an unclassified manner are summarized below.

Available Tanker Capacity

The Military Sealift Command (MSC) has eight (8) inter-theater US Flag tankers available under charter on a daily basis supporting peacetime requirements: six (6) tankers move cargo internationally and two (2) are Jones Act tankers moving DoD domestic cargo. MSC also has one (1) US Flag coastal tanker on charter to contribute to the intra-theater US Flag connector requirements. In a contingency, these vessels will immediately transition to move contingency vice peacetime fuel requirements.

There are an additional 34 militarily useful US Flag Jones Act tankers engaged in domestic trade.

- Jones Act tankers in domestic trade move fuel to regions of the US that do not have pipeline or refinery access – primarily Florida, and portions of the East Coast, where tankers provide about 65% and 10% of daily fuel demand respectively. As accessing a significant portion of Jones Act tankers could likely disrupt the US economy, the study team only assumed access to four Jones Act tankers operating on the spot market vice engaged in long-term contracts.

There are also many militarily useful US Flag intra-theater connector vessels:

- Platform Supply Vessel (PSV): ~103 PSVs of at least 4,000 DWT in the Gulf of Mexico.
- Articulated Tug Barge (ATB): ~167 ATBs operating in the US coastwise trade.

Approximately 50% of the PSVs are either laid up or operating on the spot market and could be available to support contingency missions or to backfill Jones Act tankers without disrupting domestic trade. However, some vessels may require extensive cleaning or modifications to increase fuel-carrying capacity.

In the global tanker market, there are a significant number of foreign flag tankers available from Allied and friendly nations. Industry survey results and the analysis of seven years of commercial tanker data indicate positive carrier support and availability to charter with the DoD in support of a contingency. Though foreign operators indicated a willingness to charter with DoD in a contingency, they are somewhat unwilling to operate within a Contested Environment (CE).

Operating Environment

The study team used OPLAN requirements for three major contingencies in the NDS to determine the operating environment and most stressing demand for fuel tankers. The European Theater benefits from excellent fuel infrastructure via several deep-water ports, the Central European Pipeline (CEPS) and large network of refineries, where the challenge is ground distribution and not a significant requirement for tankers. However, the Pacific theater is

complicated by long distances and a non-contiguous geography of islands and island chains that drive significant movement of fuel over water. The study team found that a Pacific scenario was the pacing demand for fuel tanker requirements.

US Flag Requirements

The Pacific geography results in a complex fuel network through which vessels must move fuel from large fuel storage sites at logistics hubs to onward destinations in dispersed areas. The mission, location, and timing of fuel deliveries influence the need for US vice foreign flag tankers. Combatant Commander Concept of the Operations (CONOPS) and provisions of the Jones Act determine which tankers must be US Flag. Shipments from US ports to Hawaii require US-owned, US-built and US-crewed vessels. Shipments to Guam and other US territories require vessels to be US-owned and US-crewed but not US-built. Specific CONOPS requiring tanker crews to operate in direct support of engaged forces or unique missions requiring specialized equipment and trained crews (e.g. CONSOL⁵) require US Flag tankers. The classified report describes these missions and CONOPS in detail.

Gap Analysis

The current US Flag tanker fleet is insufficient to meet specific US requirements, leaving significant gaps in both inter-theater and intra-theater segments. The inter-theater gap results from the insufficient numbers of US Flag tankers trading internationally, specifically in the Pacific theater. The intra-theater gap is due to the US Flag connector assets requiring too much time to prepare and re-position to the theater. The specific requirements data and supporting analysis are in the classified report. To close the gap, the DoD requires whole of government solutions that provide more cargo opportunities, grow the US Flag tanker fleet, and solve time-distance issues so assets are ready and in the right location when needed.

Risk of Reliance on Foreign Flag

Chartering foreign flag tankers from the global market at time of need is a viable means of accessing needed capacity. While IDA's analysis shows that significant numbers of foreign flag tankers may be available for charter, these tankers are most appropriate for low-risk shipments replenishing strategic hubs outside the Contested Environment. Also, foreign flag tankers lack the specialized equipment and trained crews to conduct several operations required by combatant command CONOPS. Additionally, results from the industry survey show that all foreign owners and some US owners expressed reservations about operating in the Contested Environment. Reliance on foreign flag tankers inherently involves elevated uncertainty. Where there is uncertainty, there is risk. The specific risk levels are included in the classified report.

Potential Solutions

In order to mitigate risk and uncertainty, the study team proposed and analyzed several potential solutions and mitigations. These options, working together, could reduce the US Flag tanker gap and the risk of reliance on foreign flag tankers. The classified report contains a complete analysis of the solution set identified below:

⁵ Consolidated Cargo (CONSOL) operations involve the transfer of fuel from a tanker to a fleet oiler while underway.

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- Acquire the Mobile CONSOL Adapter Kit (MCAK). The MCAK is an interim mitigation to increase the number of US Flag CONSOL-equipped tankers until TSP can provide a permanent CONSOL capability.
- Implement the Tanker Security Fleet (TSP). The TSP, if appropriated, would be a 10-ship fleet that would result in a net gain of eight (8) US Flag tankers. The two MSP tankers will transfer into the TSP. TSP tankers would be equipped with defense features and crews trained to conduct the operations required by combatant command CONOPS. The TSP is necessary for national defense and the net gain of eight (8) tankers is a positive step forward towards meeting US Flag requirements. Were it to be authorized and appropriated, an even larger TSP would help fill more gaps, particularly in meeting critical OPLAN requirements in the CE.
- Increase Jones Act Fleet Response. At time of need, additional Jones Act tankers could volunteer for increased Jones Act-protected business in support of DoD contingency missions. Jones Act ships might also volunteer to support non Jones Act inter-theater trade. Carriers may choose to mitigate impact on the domestic economy by backfilling tankers with suitable replacements such as ATBs.
- Temporarily Waive the Jones Act. Waiving the Jones Act at time of need is a means to free up US Flag tankers to support high-risk DoD contingency missions in theater while foreign flag tankers support low risk lines of business that are normally protected by the Jones Act. Sufficient Jones Act fleet response would remove the need to exercise this option.
- Negotiate Allied Agreements. DoD and the Department of State should pursue additional Allied agreements similar to the Korean Flag Shipping agreement and other host nation agreements to provide assured access to inter/intra-theater fuel vessels in a contingency.
- Establish a US Flag Intra-theater Fleet. An intra-theater fleet in theater would provide an immediate capability to respond when and where needed. During steady state operations, these vessels could provide support to exercises and move day-to-day fuel and cargo. This solution would require further development by MSC, DLA-Energy, and USINDOPACOM to determine the number of vessels appropriate for demands during competition/steady-state.
- Renew the Voluntary Tanker Agreement (VTA). The VTA, when renewed, will re-establish the emergency preparedness program for accessing tankers and provide a formal capability for planning between government and industry through the Tanker Requirements Committee (TRC).
- Establish Planning with Industry. Regular and recurring planning forums between government and industry will help align DoD need/expectations and industry capabilities in the event of a contingency. The VTA and TRC provide the formal structure for this Government – Industry sessions.
- Negotiate Contingency Contracts with Tanker Operators. In the absence of sufficient Allied agreements, contingency contracts with tanker operators could provide timely assured access to required tanker capacity and capabilities.
- Increase Fuel Storage and Realign Preposition War Reserve Stocks. Increasing fuel

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storage at key locations in Southeast Asia and Micronesia will shorten resupply lines for tankers operating in theater, which would reduce tanker requirements. Port infrastructure improvements to accommodate deeper draft MR tankers are also required to take full advantage of the benefits of increased theater storage.

- Establish Conditions-based Floating Storage. Establish multiple temporary fuel storage locations at time of need to reduce cycle times from theater to sources of supply and to increase resiliency in a CE.
- Acquire Organic Intra-theater Fuel Vessels. The Navy's Next Generation Logistics Ship (NGLS) and the Light Amphibious Warship (LAW) programs will begin providing an additional organic intra-theater connector capability in the 2030s. Army watercraft already have a defined role limited to tactical fuel distribution and are unavailable to support Joint fuel delivery requirements.
- Update Joint Planning Guidance. The study team recommends that Joint Staff update the Logistics Supplement (LOGSUP) to the Joint Strategic Campaign Plan (JSCP) to remove the use of the EUSC fleet as a valid planning assumption.
- Conduct Intra-theater Lift Study. Due to the complexities in the USINDOPACOM AOR, there is significant uncertainty in accessing and employing intra-theater lift assets to move bulk fuel, unit equipment, passengers, and sustainment. Challenges of the strategic distances in the theater and the disruption of the CE exacerbate these uncertainties. A separate intra-theater lift study is necessary to drive required planning, to refine theater lift requirements, and to highlight competing demands on intra-theater lift platforms (air and sea) in the USINDOPACOM AOR.

Summary

There is insufficient US Flag tanker capacity to meet NDS requirements. DoD will have an enduring need for foreign flag tanker augmentation. However, the mission, location, and timing of some fuel delivery requirements drive the need for US Flag tankers. Though there is sufficient friendly foreign flag capacity, there is substantial risk to mission associated with a heavy reliance on foreign flag tankers, particularly in the intra-theater area and within a contested environment. This analysis clearly demonstrates the need for a TSP in addition to the other solutions identified above. These solutions, working together, are important steps toward a comprehensive strategy to increase US Flag tanker capacity, to reduce the risk of reliance on foreign flag tankers for the most important fuel missions, and to ensure the DoD has sufficient tanker capabilities to meet NDS objectives.