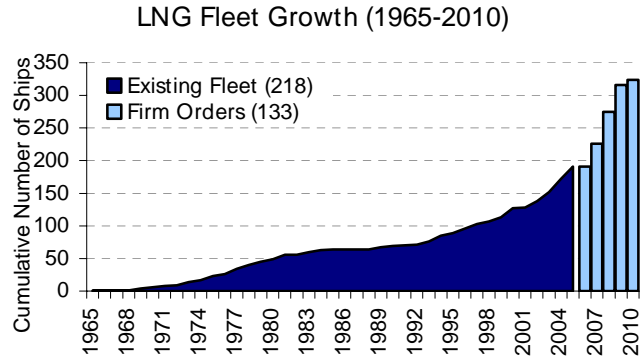


Crewing Challenges Increase With Growing LNG Fleet

LNG shipping is in the midst of an unprecedented fleet expansion. At this point, ship yards worldwide have 133 new builds on their order books that will boost the global fleet to over 300 vessels by 2010. And more ships are being ordered, with the number of tankers plying the seas widely expected to approach 400 by 2015. Crewing requirements have been increasing hand-in-hand with this expansion, and have now reached levels never before seen in the LNG industry. New entrants into the business and the fast pace of technological innovation in the shipping sector give this challenge additional dimension, although owners and other participants seem to be tackling the problem on various fronts.

This effort is reflected in a recent agreement between Qatar Gas Transport Co, soon to be the world's largest LNG ship owner, and Shell International Trading and Shipping Co. The 25-year deal provides for Stasco to manage QGTC's 27 fully owned Q-class ships ranging in size from 209,000 to 266,000 m³. Operational management is to be turned over to the Qatari partner within 12 years, and the transfer of know-how and expertise from Stasco to QGTC is a key part of the agreement. Stasco has long standing arrangements with Nigeria's Bonny Gas Transport and Brunei Shell tankers where local training is an important feature. BP performs a similar service to Abu Dhabi's National Gas Shipping Co, although it is now in the process of transferring operation of the fleet to its owner.



Source: Poten & Partners

Another sign that the crewing issue is being addressed is an announcement by Japanese ship owner NYK and Korea's Hyundai Heavy Industries that they plan to build an LNG training vessel. This ship will be able to offer onboard training to 20 trainees at a time. A yard in China is also building similar facilities on one of its new builds in order to train local cadets. Meanwhile, Russia's Sovcomflot has acquired two ships from BG which it will utilize to train crews in preparation for operating tonnage dedicated to the Sakhalin II project.

Organizations like the Society of Gas Tankers and Terminal Operators have been instrumental in highlighting the crewing issue. SIGTTO has developed a "training initiative" that sets minimum operational standards for all ten officer ranks on an LNG tanker. SIGTTO's "best practice" guidelines are respected throughout the industry, although there are concerns that some new players may not be committed to these principles. Several firms have offered very low charter rates to break into the business, and the cost pressures arising from this strategy may encourage them to cut corners on maintenance and crew training. As a result, many charterers now require that crews be trained to SIGTTO accredited standard. These guidelines are now being considered for adoption by the International Maritime Organization and may be included in a revision of the Standards of Training, Certification of Watch Keeping code.

A typical LNG vessel needs a complement of 27 seafarers comprising five deck officers, five engineer officers and 17 crew members. An additional complement is needed to account for vacations, illness and turnover. Retirements, illnesses and unplanned events can increase crewing needs even more. Shipping experts place the full officer requirement at three to three and a half times an operating complement and about two times for the crew, totaling 64 to 70 seafarers for

each vessel. Based on the current order book, this would put incremental crewing needs at 8,500 to 9,200 mariners. It is presumed this total includes “poaching” of experienced seafarers for onshore jobs. Experienced officers are often in line for these attractive positions, draining much needed know-how from maritime operations.

Sourcing trained engineers presents a particularly thorny problem. There has been very little steam engineer training around the world during the last 50 years as the shipping sector has largely moved to diesel propulsion. Even though the LNG industry is now joining this diesel propulsion trend, there are still 66 steam turbine ships on order that require over 1,000 steam engineers. One estimate places the shortage of steam engineers at 1,400, including a loss of engineers with steam endorsements from retirements and other developments.

Training so many seafarers is expensive. One major provider estimates the total cost to pre-qualify, train and certify a complete non-LNG crew at approximately \$750,000 per ship at commissioning. This puts the training tab for 133 crews at \$100 million and an additional \$100,000 per year is needed to maintain on going training and service standards for each crew. It is feared that some industry operators may have under estimated the total cost of maintaining the industry’s exemplary record of service and safety and will be tempted to cut corners.

Industry leaders emphasize how important experience is for sound operation of an LNG ship, particularly for top officers. The general rule-of-thumb is that it takes 10 to 12 years for an officer with an entry level license to rise to master or chief engineer. Companies may shave up to 90% off this time by cross training an experienced oil tanker officer. While some of the oil majors can legitimately choose this route, it may not be an option for other ship owners and operators.

Although the industry has never experienced a major accident or loss of cargo, SIGTTO has noted an increasing frequency of minor incidents. This partly reflects the growing number of ships in the fleet and the more diverse trades in which these vessels are deployed. But the society warns that it could also be symptomatic of an aging fleet, cautioning that older ships generally need more maintenance. The purchase of an elderly tanker on the way to the scrap yard can be relatively inexpensive way to enter the business. But maintenance and crewing experience is particularly important in the operation of aging tonnage. Failure, as is so often said, is not an option.

