Liquefied Gas transportation and terminals

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Background information
Loss of confidence in the industry in one part of the world will undermine confidence elsewhere and threaten the reputation of the industry as a whole.

These words open the SIGTTO Profile and are as pertinent today as they were 10 or even 26 years ago when the Society was formed.

SIGTTO was established in 1979 as a non profit making company, registered in Bermuda and granted observer status at IMO in 1982.

SIGTTO membership operates nearly 95% of the liquefied natural gas (LNG) tonnage and terminals and almost 60% of the liquefied petroleum gas (LPG) tonnage and terminals.

The Society is engaged in its original purpose: To specify and promote high standards among all industry members throughout the world, and hence, to maintain confidence in safety of the liquefied gas industries and maintain acceptance, by society at large, as responsible industrial partners.

Members hold regular meetings, and the principal technical body is the General Purposes Committee. Information papers, text books and guidelines are published and are available either by download or through the publishers.

Among the main publications are ‘Liquefied Gas Handling Principles on Ships and in Terminals,’ ‘Liquefied Gas Fire Hazard Management,’ ‘LNG Operations in Port Areas’ and ‘Crew Safety and Training for Large LNG Carriers.’

Port information for all LNG export and import terminals is available for members on a dedicated web portal, and SIGTTO is now working on LNG ship information on the same portal.

The web portal, when completed, will allow ship and terminal operators to quickly assess compatibility of a given vessel against a given terminal. This, of course, will not preclude the vetting process and the possibility of inspections, but it will make the ‘first pass’ quicker and more accurate.

Working with the Oil Companies International Marine Forum (OCIMF), SIGTTO is drafting guidelines for jetty maintenance; this will improve the standards in equipment and facilities available on oil and gas berths around the world.

LNG expansion
The shipping industry as a whole, and the liquefied gas business in particular, is witnessing an unprecedented expansion at present. The number of LNG carriers is set to shortly double from the 1998 figures and by the end of the decade will be close to 400 vessels. The LPG new-building programme is also indicating considerable fleet renewal.

Similarly, we have seen considerable expansion in the number of terminals constructed or expanded. Over the last two years there have been over 40 applications for new import terminals filed with the USCG and federal Energy Regulatory Commission. In Europe we will shortly see the first LNG export terminal when the Hammerfest facility opens for export from the SnØvit complex, offshore Norway. Egypt has commissioned two export terminals, and China will open its first import terminal in 2006. In 2005 the UK resumed LNG imports after a fifteen year gap when Grain LNG received its first cargo from Arzew, Algeria, on the aptly named ‘Berge Arzew.’

This expansion in the number of ships capable of transporting cryogenic liquids, and the number of terminals designed to handle the product, gives rise to a unique set of problems.

The existing fleet of gas carriers have been manned and operated by a few dedicated owners and operators, the expansion will require considerably more mariners and this demand is happening at a time of a world wide seafarer shortage.

Seafarers traditionally came from NW Europe, US and Japan but the recruitment is moving to Eastern Europe, India and the Philippines, areas where ratings have always been sourced but now developing excellent officer provision.

Training standards
As they did for oil and chemical tankers the International Maritime Organization (IMO) has laid down a series of training standards for gas carrier crews which comes in addition to normal certification.

This IMO requirement is to attend a short safety course and a period of sea time ranging from 28 days to 6 months depending on Flag State requirements.

While this situation provides for a well trained and highly knowledgeable environment, the continued growth in the fleet currently strains manpower resources and training schedules and it is possible short cuts can be taken.

Operators are putting into place “fast track” training programmes, and there is even “poaching” taking place with personnel being offered a more lucrative deal by alternative employers. LNG officers are currently amongst the best paid seafarers today.

In LNG, at present, there are differing standards from charterers, flag states, operators etc.

SIGTTO are therefore establishing industry accepted minimum operational standards for training of all ten officer ranks onboard an LNG tanker.

The standards are written in the ‘competence based training standards’ methodology which was used for Standards of Training, Certification and Watchkeeping (STCW), by the Merchant Navy
Training Board (MNTB) in the UK and in education and training generally both inside and outside the maritime industry.

There is a detailed appendix of underpinning knowledge which is referenced from the functions page.

The timeframe has been achieved; the standards were completed by September of this year. In October they will have been submitted to the IMO for presentation to STCW in late January 2006 as an information paper.

Flag states can then do what they please with the information paper, i.e. ignore it, use it as guidelines or make it mandatory. It could even replace the gas endorsement course.

This will then, hopefully, be accepted throughout the industry as the minimum acceptable training standard and may even become mandatory by default through charterers etc insisting on it.

These are guidelines presented to LNG operators to guide them through training of officers from a non LNG background or promotion onboard. The operators can do the training any way they wish, and at the end of the training SIGTTO can provide verification, if wanted.

This will then give LNG an industry accepted standard instead of the differing standards we have at present. It will also ensure that operators have the guidance required to train to a minimum accepted level which will, hopefully, preserve the LNG industries unique safety record.

As shown we have considered the manning and competence of seafarers on board LNG vessels, but the next step is to ensure that the same level of competence is reflected in LPG vessels, the shore-side management, terminal operations, and in all areas which have traditionally employed marine experienced personnel.

Marine personnel of all disciplines are in demand for a wide variety of shore based posts, underwriters, superintendents, marine and engineering advisers, terminal operators etc. The reduction in the traditional source is meaning a complete re-think on the supply of marine experience to shore employment.

New LNG carriers are being designed for a 40-year lifespan, and many trading vessels are 30+ years in age and in as good a condition today as when delivered, arguably the oldest liquid carrier still trading.

Ships that are not locked away on term work with projects are subject to rigorous inspections and vetting, similar to the oil fleets. This process is now part of the chartering assurance that is required to ensure the continuance of quality.

Incidents such as pollution, fire, grounding and collision can have serious consequences for owners, managers, charterers and other parties. The associated costs of such incidents in terms of both cash and reputation are prohibitive. Vetting departments aim to provide assurance to their principals that the risks involved in moving oil and gas around the globe have been minimised as much as possible. They seek to improve the level of assurance ahead of public expectations and they work with other industry bodies to facilitate business in a safe and proper manner.

A critical part of the ships inspection is the competent demonstration of knowledge and awareness of the vessel by the ships staff and this experience can come from two areas, time on board and familiarity with the vessels procedures.

Summary

What is the value of a reputation? Continued licence to operate, continued public acceptance, continued provision of a safe place of work.

The LNG industry has an enviable reputation nurtured over forty years of safe marine transport and terminal operation. That record is the most valuable thing we possess, and all players in the business must work together to ensure that it continues. Standards have been set by the early players and these have stood the test of time and must be maintained.

Any accident is bad for business, but any accident attributable to the non compliance with industry standards will be unforgivable.