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SIGTTO

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MESSAGE FROM GENERAL MANAGER

A brisk start and a fast learning curve

Andrew Clifton, the SIGTTO General Manager, looks back on a busy first year in office, not least the establishment of a new NGO

In the last Newsletter, the Spring 2013 edition, I mentioned the new non-governmental organisation (NGO) for LNG bunkering which SIGTTO was proposing. Events have moved quickly since then. This NGO now has a name - the Society for Gas as a Marine Fuel (SGMF). It has also been formally established and is open for membership. The establishment of the new Society will now enable SIGTTO to concentrate fully on its core gas shipping and terminal responsibilities. Further details about SGMF are given on page 6.

SIGTTO's regular work has continued and, if anything, intensified during this period. Over 20 projects are currently being managed by the Secretariat staff under the auspices of the General Purposes Committee (GPC). Although several of these projects relate to safety and best practice in the operation of liquefied gas tankers, they predominately involve the ship/shore interface. This is a zone where risk levels can be high and where best practice guidance can help by reducing the relevant risks to an acceptable level.

The new projects all have topical interest. For example, one of the projects deals with the use of the enlarged Panama Canal by LNG carriers. The target date for completion of the necessary construction work is early 2015. Once the new locks are complete, LNG vessels up to 49 metres in breadth will be able to transit the waterway for the first time.

The opportunity, potentially, to direct over 80 per cent of the LNGC fleet through the Panama Canal has prompted SIGTTO to



"It is our job to highlight the robustness of the gas carrier safety regime, and to continue to reinforce the message"

form a working group focused on producing guidance on all the technical aspects of an LNGC Canal transit. Another new project is looking at the possibility of providing best practice guidance covering the safe carriage of LNG, as cargo, in ISO tank containers.

As always, the Society's membership provides the expertise the working groups need to enable them to produce the kind of guidance specified. SIGTTO's Board of Directors has been very supportive in assessing priorities and highlighting the most appropriate ways in which the Society can be provided with the necessary resources to enable it to function to optimum effect. It is envisaged that the Society's activities will, most likely, increase over time. As a result the resources available within the Secretariat will have to be reviewed and increased if considered necessary.

The Secretariat's staff, especially myself as General Manager, often find ourselves having to reassure various parties outside the LNG industry about the safe carriage of natural gas by sea. This gives us a chance to highlight the exemplary safety record built up by the LNG shipping industry, the robust designs to which the vessels are built and the operational procedures and safeguards to which our industry adheres. Very often the public perception of gas ship operations is that it is an extremely hazardous occupation. Every opportunity must be taken to highlight ...continued on page 3 >

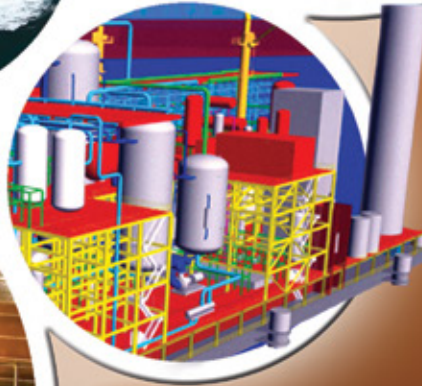
"Every opportunity must be taken to highlight the realities of safe gas transport and help correct ill-founded public perceptions."

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...continued from page 1 >

the realities of safe gas transport and help correct ill-founded public perceptions.

As part of this educational role, earlier in the year I spoke at a naval conference in Bahrain. The event was attended by senior officers, including several admirals, from over forty navies, and I discussed the likely effects of an intentional terrorist attack on an LNG carrier. One particular focus was what would happen if an LNG vessel struck a mine.

The presentation was able to provide reassurance to those attending that LNG carriers are not “floating bombs” and helped dispel the common public perception that an attack on a gas carrier will result in a huge explosion that could harm people and property in the vicinity. Those present heard that the LNG fleet consists of robust ships which are soundly designed, constructed and managed and well equipped with safety and emergency systems. It was also pointed out that catastrophic events caused by hydrocarbon gases in the liquid phase are few.

As a follow up from this conference, myself and SIGTTO Technical Adviser Rick Boudiette visited the Royal Navy’s bomb disposal unit in Portsmouth. We gave a similar presentation to their staff and also learned about their role, the equipment they use and the challenges they face. This is another example of the relationships that SIGTTO, as the industry body for the gas shipping and terminal sector, has formed over the years with a wide range of other groups which have safety and security as their principal focus. We hope that such relationships will continue to blossom, with frequent exchanges of beneficial information in both directions.

In the first year of my tenure as General Manager it has been a fantastic experience to meet the SIGTTO membership spread over every continent and involving many organisations and nationalities. I have attended SIGTTO regional forums in Shanghai, Australia, Singapore, Houston, Athens and Antwerp. An additional regional forum was held in Dubai which I was not able to attend.

Regional forums present an important opportunity for engaging with the broader membership in a way that is not possible through General Purposes Committee (GPC) and Board of Director meetings. Regional forums provide the Secretariat with a chance to brief members on the Society’s activities and also to receive information regarding any specific issues which they feel SIGTTO may be able to address.

The 58th Panel Meeting in London in October will be the Society’s first such gathering for 18 months. A large turnout is expected and more information on the meeting can be found on page 5. I am looking forward immensely to this major event and to meeting more members there.

OFFSHORE



FSRU Toscana has the capacity to regasify approximately 2.8 million tonnes per annum of LNG, equivalent to about 4 per cent of Italy’s gas demand

Maiden cargo for FSRU Toscana

OLT Offshore LNG Toscana, a SIGTTO Member, reports that its floating storage and regasification unit *FSRU Toscana* is now on station off the Italian coast, is hooked up its subsea connections and has received an inaugural commissioning cargo. *FSRU Toscana* represents a major breakthrough for the LNG industry as it is the first regasification vessel to be permanently moored at a true offshore location.

Converted for its new role, *FSRU Toscana* is the former 138,830m³, 2004-built, spherical tank LNG carrier *Golar Frost*. The vessel is moored 22km off the coast near Livorno, at a point where the water depth is 120m, using using a bow-mounted turret yoke system.

The conversion was carried out by Drydocks World Dubai and besides the installation of the mooring arrangement the project involved removing the vessel’s propulsion system and fitting the necessary regasification, boil-off gas handling and metering equipment. The vessel has also been equipped with special loading arms developed by FMC for offshore cargo transfer operations.

FSRU Toscana’s initial cargo was delivered by the 126,000m³ *LNG Leo*, in early September. The LNG transshipment operation was carried out with the vessels moored in a side-by-side arrangement and the pair weathervaning around the turret yoke. The FSRU’s commissioning phase will take about three months and commercial operations are planned to start by the end of November.

UPCOMING MEETINGS 2013	DATE	LOCATION
68th General Purposes Committee	8 Oct	London
58th Panel Meeting	9-10 Oct	London
Technical Visit	11 Oct	Grain LNG, Isle of Grain
Autumn Board Meeting & AGM	14 Nov	London
Pan American Regional Forum	18 Nov (week beginning)	Houston
Australian Regional Forum	10 Dec	Perth

UPCOMING MEETINGS 2014	DATE	LOCATION
69th General Purposes Committee	27 March	Seoul
Spring Board Meeting	May (TBC)	Paris
59th Panel Meeting	May (TBC)	Paris
70th General Purposes Committee	Oct (TBC)	Livorno, Italy
60th Panel Meeting	Oct (TBC)	Livorno, Italy



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MEET THE PEOPLE AT SIGTTO

PRESIDENT Luc Gillet



Luc Gillet, Senior Vice-President Shipping with Total, has been appointed President of SIGTTO, in succession to Steffen Jacobsen of Maersk. Luc studied

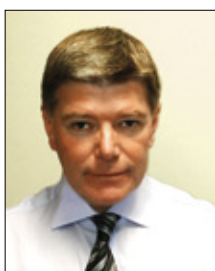
as an engineer, graduating from Ecole Nationale de Techniques Avancées in 1980 with a degree in naval architecture and ocean engineering. He followed that up with an Executive MBA degree from Hautes Etudes Commerciales.

He started his career in the offshore industry, joining ETPM, a company specialising in offshore operations, in 1982. He then joined the Offshore Division of the classification society Bureau Veritas in 1983. The following year Luc moved to Tecnitax, a Bureau Veritas consultancy subsidiary, and spent two years in Brazil.

His 20-year career with BV culminated with a final posting in 1999 as Head of the Marine West Zone, covering Europe, the Hellenic and Black Sea region and the USA.

Luc Gillet joined the energy major Total in 2003 as Vice-President Shipping and in 2008 he was appointed Senior Vice-President Shipping. Luc is also a member of the executive committee of the Oil Companies International Marine Forum (OCIMF).

VICE-PRESIDENT David Furnival



David Furnival, the Chief Operating Officer (COO) at Bernhard Schulte Shipmanagement (BSM), has been appointed as the new SIGTTO Vice-President. His role at

Bernhard Schulte involves the overall management of fleet operations in the eight BSM shipmanagement offices around the world. This fleet encompasses over 680 vessels and more than 15,000 crew.

David commenced his seagoing career in 1975 as an engineering officer cadet and he obtained a Class 1 Certificate of Competency in 1985. David came ashore in 1991 and by 1998 was in charge of the technical operations of 21 vessels, including LPG carriers, chemical tankers, container vessels,

reefers and pure care carriers (PCCs).

Later that year David joined Bernhard Schulte Shipmanagement organisation on the Isle of Man. He was promoted to Operations Director in May 1999, Managing Director in September 2005, Group Managing Director in 2008 and then COO in 2012.

PANEL MEETING CHAIRMAN Marc Hopkins



BG Group's Marc Hopkins has been appointed to succeed Andrew Clifton as Chairman of the SIGTTO Panel. His new role marks the continuation of long association with the

Society, an association which includes a stint with the Secretariat as a Technical Adviser.

Marc's involvement with the sea transport of hydrocarbons began in 1970 when he joined BP Shipping as a deck cadet. He progressed through the ranks, becoming a master in 1986 and serving in this position on BP tankers and gas ships for four years

In 1990 Marc came ashore to work in BP offices on matters related to LNG and LPG shipping and gas terminals. From 1994 through 2000 he served on two secondment assignments, the first with National Gas Shipping in Abu Dhabi where he was instrumental in the formation of this new LNG shipping company, and the second as a Technical Adviser at SIGTTO. In 2000 Marc returned to BP Shipping where he assumed the role of Gas Shipping Project Manager.

In February 2005 Marc left BP Shipping to join BG Group in Houston as Marine Operations Manager. The fleet for which he was responsible at one time numbered 32 LNG carriers.

In 2010 he was appointed to the post of Senior Principal Marine Adviser for BG. Here the focus was not only on LNG but also a new venture for the Group - crude oil from Brazil. In 2013 Marc Hopkins was appointed Director of Marine Operations for Ports and Terminals and Oil, a role which includes oversight of ship-to-ship transfers of oil and gas.

Amongst his other involvements with SIGTTO Marc was Chairman of the General Purposes Committee for the maximum allowable term of six years, stepping down in 2010. He is now the Chairman of the Competency Working Group which is engaged in establishing a requirement for competency assessment in the LNG industry.

MEETINGS

London Panel - the event of the year

The 58th SIGTTO Panel Meeting will take place at the Lancaster London Hotel on 9-10 October 2013. There is expected to be a large turnout for what will be SIGTTO's major event of the year. At the time of writing (early September) over 130 members had registered and the technical visit to the Isle of Grain LNG terminal was fully booked, with a waiting list started!

Interest in the London Panel has been spurred by, amongst other things, the venue, the speaker programme and the fact that it has been 18 months since the last Panel in Doha. We are most grateful to National Grid Grain LNG, the company having kindly taken on the sponsorship of the 58th Panel Meeting. National Grid Grain LNG is profiled in an article on page 12.

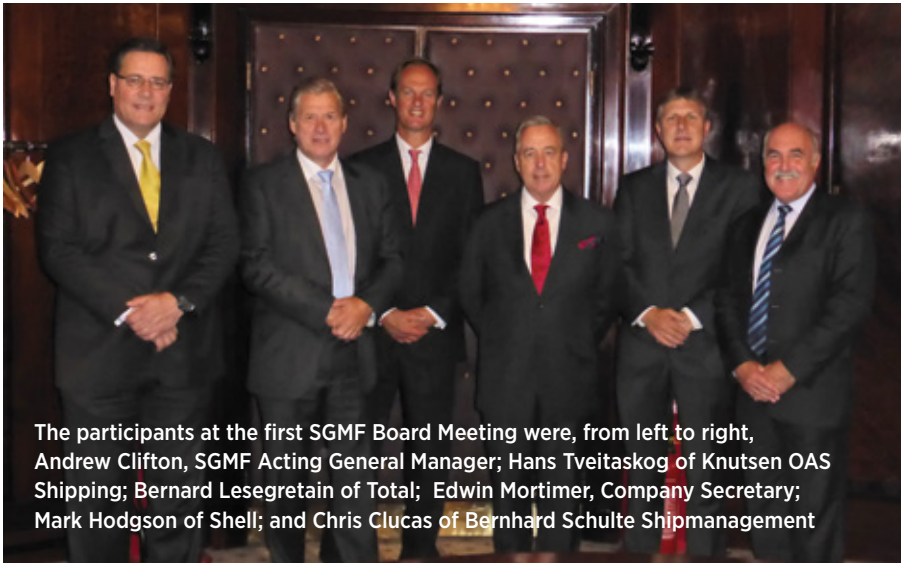
The keynote speaker at the London Panel is the IMO secretary-general, Mr Koji Sekimizu, and many other stimulating speakers have been lined up to present papers on pertinent and important topics that affect our industry today. There will also be a special forum session on LNG as marine fuel.

One or two surprises have been organised for the London Panel dinner and, in addition, all past SIGTTO general managers and technical advisers have been invited. If you have not yet registered, please do so soonest by contacting the Secretariat for further details.

Discount for small-scale event

SIGTTO Members attending the 2nd Annual Small-Scale LNG Forum in Rotterdam on 6-8 November 2013 are eligible for a 15 per cent discount from the registration fee for the event. Please contact the Secretariat for the promotional code that will need to be entered on the registration form. The form can be accessed at www.flemingeurope.com.

The 2nd Annual Small-Scale LNG Forum will be chaired by SIGTTO Technical Adviser Roger Roue. The conference sessions will be augmented by a technical visit to the Gate LNG import terminal in the Maasvlakte area of the port.



The participants at the first SGMF Board Meeting were, from left to right, Andrew Clifton, SGMF Acting General Manager; Hans Tveitaskog of Knutsen OAS Shipping; Bernard Lesegretain of Total; Edwin Mortimer, Company Secretary; Mark Hodgson of Shell; and Chris Clucas of Bernhard Schulte Shipmanagement

New Society for new use of LNG

The Society for Gas as a Marine Fuel (SGMF) has been formed with the objective of continually promoting safety and industry best practice in the use of LNG as a marine fuel. SIGTTO played a lead role in the drive to establish SGMF as a new industry association and non-governmental organisation (NGO). Now that SGMF is in place, SIGTTO can concentrate fully on its core responsibilities, as laid down in its byelaws, in the gas shipping and terminal sectors.

The new Society, which is a non-profit-making organisation registered in Bermuda and with a London liaison office, is focused solely on safety issues and the development of appropriate recommendations and best practice guidelines. It has no commercial or regulatory remit.

Under its terms of reference SGMF will encourage and promote safe and responsible operations of not only vessels using LNG as a fuel but also in all the marine activities relating to the supply of the LNG used for fuel. More specifically, it will develop advice and guidance for industry best practice among its members and promote criteria for best practice criteria amongst all those who have responsibilities for, or an interest in, the use of LNG as a fuel. Although the SGMF remit excludes LNG carriers using cargo boil-off gas for fuel, it does include the use of any other liquefied gases as fuel.

SGMF will represent the interests of its members in matters concerning the safe operation of vessels using LNG as a fuel at the International Maritime Organization. It will consult with the IMO, government agencies and other NGOs in the promotion of safe LNG-fuelled shipping

and LNG bunkering internationally.

SGMF is now open for membership. All the main stakeholders with an involvement in the LNG bunkering supply chain are eligible to become full members. Such stakeholders include LNG fuel suppliers, operators of small-scale LNG carriers and LNG bunker vessels, shipowners using LNG as a fuel for their vessels and port authorities where LNG bunkering operations are likely to take place.

SGMF is also welcoming as associate members those organisations with an involvement in LNG bunkering that is less direct than that of full members. Those eligible for associate membership

include regulators, protection and indemnity (P&I) clubs, classification societies, designers, manufacturers, shipyards and naval architects.

In due course SGMF will issue recommendations and guidelines regarding all aspects of the use of LNG as bunkers. The new Society will be able to make use of the significant body of knowledge in gas-handling operations that SIGTTO has accumulated and disseminated amongst its membership in the liquefied gas shipping and terminal sectors over the years. The guidance that SGMF will compile and publish will cover design, operations, training and competency standards, maintenance, acceptable risks and associated control measures.

It is to our Society's great credit that this new industry body has been formed and SIGTTO urges everyone with an interest in safe and effective LNG bunkering operations to support it.

SGMF will open a London liaison office shortly and staff are currently being recruited. It is expected that by the end of the year the new Society will be effectively independent and functioning as a self-sustaining body. SIGTTO will continue to work closely with SGMF and support it as required.

If your organisation is eligible for membership, you are encouraged to join SGMF. Further information can be found on the SGMF website at www.socgmf.org or contact the SGMF membership and marketing manager at office@socgmf.org.

BENEFITS OF SIGTTO MEMBERSHIP

SIGTTO members are actively encouraged to promote membership when dealing with any new players in the industry. Please direct them to our website and to the London Liaison Office for further details of how to join.

In addition to the credibility in the industry that membership brings, SIGTTO members benefit by:

- Access to information that is exclusive to members, such as casualty information and industry statistics
- Access to the Technical Advisers in the London Liaison Office who can give advice and obtain advice, on behalf of a member, from within the Society
- Access to the very comprehensive technical library maintained in the London Office
- Submitting proposals for projects and studies to the General Purposes Committee

- Participating in discussion forums with other members each year on topics of particular and mutual interest
- Contact details of all members of SIGTTO
- New members receive a copy of all publications, free of charge, produced by SIGTTO
- Regular updates on matters affecting the industry such as legislation, either new or pending, technical or operational developments.
- Free access to the LNGwebinfo portal for updated LNG information as required to conduct compatibility studies. This information is restricted to members of SIGTTO and GIIGNL only.

It began with the smog

Roger Roue, SIGTTO Principal Technical Adviser and Canvey Island resident, writes:

It all began with the Great Smog of 1952. That year coal provided 61 per cent of the energy used in London and this figure doesn't include the coal burnt in power stations and that used to produce 'town gas'.

Under the circumstances it was not surprising that a 'Great Smog' fell over London in December 1952. Over a period of five days a combination of coal smoke and the climatic conditions produced a smog so thick that it brought road, rail and air traffic to a halt and literally choked people to death. Some 4,000 fatalities were directly linked to the smog and it is likely that a further 8,000 deaths that occurred in the following weeks and months could be attributed to exposure to the Great Smog.

That smog episode is one of the key reasons the UK Parliament passed the 1956 Clean Air Act. Amongst its many measures, the legislation encouraged the use of gas for domestic heating and cooking. The search was on for other sources of gas as the process of producing town gas from the distillation of coal gave rise to considerable air pollution in its own right. The discovery of North Sea gas was still a decade away so the UK's hunt for gas in the mid-1950s was a global one.

At the time JJ Henry, the New York-based naval architects, were looking at the design of ships to carry liquefied natural gas on the Mississippi River on behalf of Constock while in 1954 the International Bank of Reconstruction and Development had produced a feasibility study on shipping LNG from Kuwait to the UK.

The studies prompted the North Thames Gas Board to send two senior engineers to the US to evaluate the JJ Henry work. The pair were sufficiently impressed to recommend that a project be mounted to send trial shipments of LNG from the US to the UK. The conversion of the cargo ship *Normati* into the 5,000m³ *Methane Pioneer* to make this project possible is well-documented.

To bring the London connection full circle, it was decided to build the receiving terminal for the trial LNG shipments on the north bank of the Thames Estuary at Canvey Island due to the deep water alongside, the sheltered location and its proximity to the capital. Conveniently, North Thames Gas Board owned a large plot of land with river frontage adjacent to the Regent Oil's storage terminal on Canvey. Originally intended as the location



The UK Power Minister at Canvey in April 1965 to launch the new global trade in a LNG - note the different style of hardhats 50 years ago!



for a new town gas plant, the site was never developed and remained as farmland.

The Gas Board built two aluminium, single-containment, perlite-insulated LNG storage tanks, each with a capacity of 2,200m³. A vaporiser and steam boiler were provided to regasify the LNG and a 2,300m³ Wiggins dry seal gas holder was constructed as a buffer storage vessel. A temporary aluminium cryogenic pipeline was installed from Regent Oil's deepwater jetty to the LNG tanks and a gas pipeline was built to connect the regasifier with the North Thames Gas works at Romford.

The imported LNG had a calorific value approximately twice that of town gas, which was only 500 BTU/ft³. As a result the new gas flow could not be injected directly into the gas distribution system but, instead, was used as a feedstock for producing town gas. When the Algeria-to-Canvey LNG project started in 1964 and the regasified product was supplied direct to consumers, a mammoth effort to re-jet all gas appliances was required. A

survey showed that over 21,000 domestic appliances would have to be converted on Canvey Island alone and a team of 250 fitters was recruited to undertake the task.

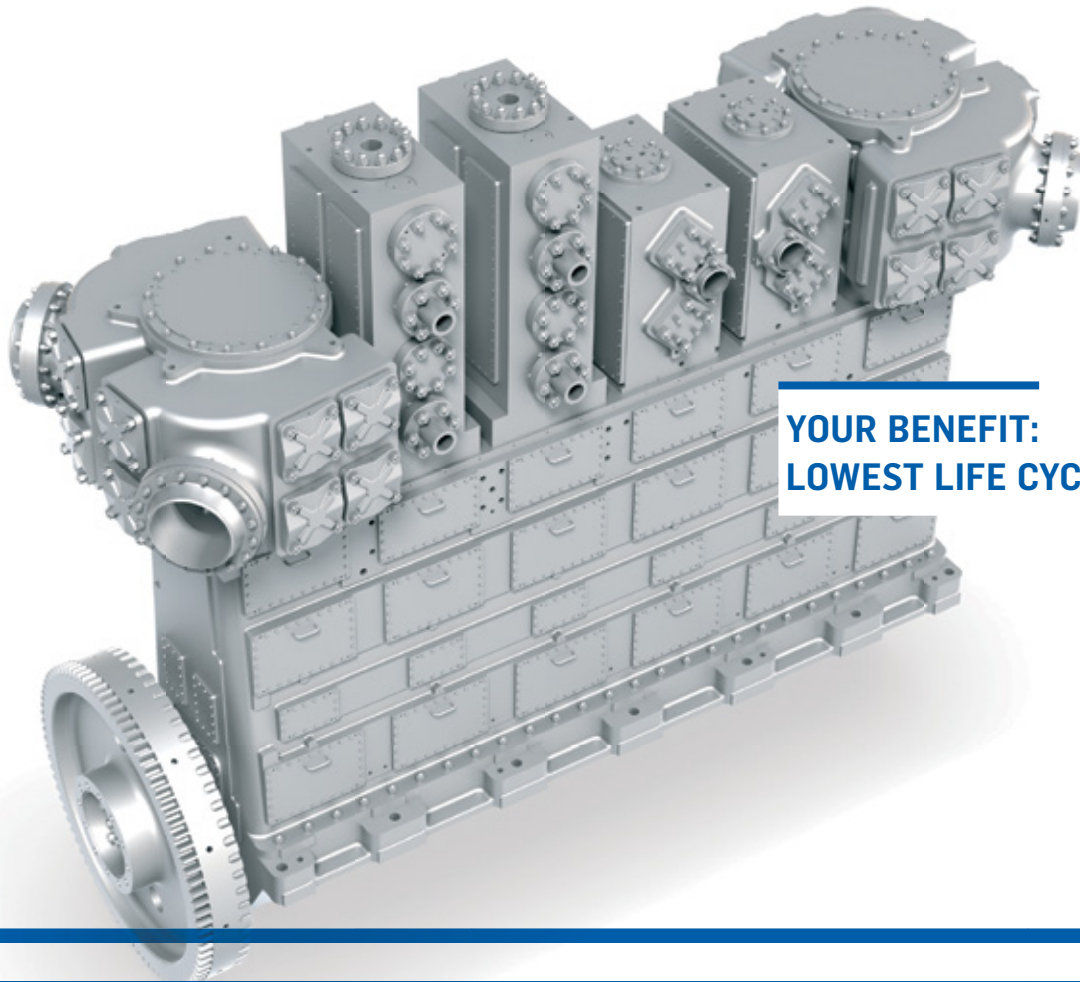
Between January 1959 and March 1960 *Methane Pioneer*, which was owned jointly by the Gas Council and Conch International Methane, made seven successful trial voyages between Lake Charles in Louisiana and Canvey. Approximately 14,000 tonnes of LNG made the transatlantic crossing over the 15 months, demonstrating the feasibility of transporting gas by sea.

Although representatives of the coal-mining communities voiced their opposition in parliamentary debate, the UK government decided that LNG represented at least a partial solution to the energy challenges facing the country. In November 1961 Sir Henry Jones, MBE and chairman of the Gas Council, announced: "The Gas Council welcomes the decision of the Ministry of Power to approve its plan for the importation of natural gas from the Sahara, which will eventually lead to lower costs of gas supply in Great Britain.

"It is hoped that in about two and one-half years' time two specially constructed tankers will begin to operate, conveying up to 354 million therms per annum to a terminal at Canvey Island in Essex. These deliveries are expected to provide about 10 per cent of the nation's total gas supplies."

The Canvey terminal cost £3.5 million to upgrade in readiness for the new trade and the first cargo arrived from the Algerian port of Arzew onboard the 27,600m³ *Methane Princess* on 12 October 1964. The terminal was officially opened by the Minister of Power, The Rt Hon Mr Frederick Lee, on 14 April 1965.

And the rest, as they say, is history!



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Four projects make progress

The following paragraphs provide updates on the work of various SIGTTO working groups making good progress with their appointed tasks.

1 Competency Assurance for Key Staff involved with LNG Operations (Human Factors)

This working group (WG) was established at the 64th SIGTTO General Purposes Committee (GPC) meeting in September 2011. The WG first met in December 2011 and has had three further meetings since then. One of the principal tasks identified for the WG is to create guidelines entitled *Competency Assurance for Key Staff involved with LNG Operations*. The aim is to create a quality training regime based on the existing SIGTTO competency standards dealing with LNG, LPG and Steam. Such a regime will require independent third party verification of training establishments and systems.

The WG has made good progress in clarifying its objectives and has produced a sample training recordbook which may be made available in electronic format. The Key Staff Competency guidelines are being developed by the WG with the aim of submitting them for approval to the 69th GPC in March 2014 and having the publication available by mid-2014.

2 Use of Support Vessels in the Emergency Response and Protection of Liquefied Gas Carriers and Terminals

This WG was established at the 66th GPC meeting in October 2012. It first met in December 2012 and there have since been three further meetings. The WG is tasked with defining the expected response, by emergency response craft, for incidents relating to liquefied gas carriers at terminals, including offshore terminals.

In working to complete this task the WG will identify all possible scenarios that could require an emergency response. The possible response to these scenarios will be evaluated and described in the guidance document. The group will also provide examples of co-ordination and control systems that are already established to deal with such emergencies. This information could be useful in setting up such systems in regions that do not have extensive experience in this area. The WG is also reviewing equipment and training requirements for support vessels.

The WG is aiming to produce a publication and is aiming to submit its document for

approval at the 70th GPC meeting in the third quarter 2014. The publication could then be printed and available by the end of 2014.

3 High Modulus Synthetic Fibre (HMSF) Mooring Ropes

This WG is a joint initiative involving both SIGTTO and the Oil Companies International Marine Forum (OCIMF). It was established, by SIGTTO, at the 66th GPC meeting in October 2012. The WG first met in December 2012 and has had three further meetings since then.

The WG has been tasked with providing guidance to those involved in the procurement of all high modulus synthetic fibre (HMSF) mooring ropes in order to align

the WG's output with its parent document, *Mooring Equipment Guidelines (MEG 3)*.

The results of WG's deliberations appear in an information paper entitled *Guidelines for Specification of Manufacture, Testing and Procurement of HMSF Mooring Lines*. The document has been compiled to help the purchaser make the optimum choice of mooring rope for a particular application.

The WG has completed its review and the document will be put to the 68th GPC for approval in October 2013. Once the SIGTTO and OCIMF approval processes are complete, the document will be available on the SIGTTO and OCIMF websites as a free download. This is expected to be available by the end of 2013.



The opening of the enlarged locks in early 2015 will bring the Panama Canal Authority into contact with LNG carriers for the first time

4 Guidance for LNG carriers transiting the Panama Canal

This WG was established at the 67th GPC meeting in April 2013. The WG first met in May 2013 and has had one further meeting since then. The Panama Canal Authority (PCA) is providing support vital to the realisation of the WG's stated objective. PCA has adopted a proactive approach and is doing everything it can to ensure safe transits of the enlarged Canal by the LNG carriers of SIGTTO members and non-members alike.

The WG has been tasked with reviewing all existing PCA regulations and industry guidelines that may be relevant and clarifying the applicability of these requirements for gas carriers. Because LNG carriers have not traditionally transited the canal, a current review of the safety regime, in advance of the likely transits of such ships beginning in early 2015 when the enlarged locks open, makes good sense.

LNG carriers may need to review existing mooring arrangements and ensure they have systems in place which are specific to the Canal. For example, the Canal does not currently allow the use of wire ropes, with or without synthetic tails, and requires that a steering light and pilot shelter are fitted on the bridge wings.

LNG carrier traffic brings into the PCA realm for the first time a new class of ship with multiple engine types and propulsion system arrangements. Steam turbine-powered ships, for example, are not common in the Canal and the manoeuvring of such vessels requires an understanding of their seakeeping behaviour. The full mission simulator that PCA maintains to assist in the training of pilots in Canal transits will be of assistance in this respect.

The document of consolidated, relevant information that the WG has been tasked with compiling will include an overview of the Panama Canal, sample transit plans and explanations of the critical and abort points as well as data on pilotage, tugs and visibility requirements. This information will help operators of LNG carriers to draw up transit plans and carry out risk assessments prior to a passage through the waterway.

The aim is to issue the WG's document as a SIGTTO publication. The group is targeting a submission of the document for approval at the 69th GPC meeting in March 2014. That would enable the publication to be made available by mid-2014.



Society for Gas as a Marine Fuel (SGMF) established

New non-governmental organisation (NGO) to promote safety and industry best practice in the use of LNG as a marine fuel

- SGMF seeks to promote safe and responsible operations for both LNG-fuelled vessels and LNG bunker supply logistics
- SGMF seeks to develop and disseminate industry best practice advice and guidance amongst its members
- SGMF seeks to promote best practice criteria to all with responsibilities for, or an interest in, the use of LNG as marine fuel
- SGMF was formed as a sister NGO to the Society of International Gas Tanker and Terminal Operators (SIGTTO)
- SGMF membership is open to all stakeholders involved in the LNG bunkering supply chain
- SGMF members will range from bunker suppliers, shipowners and bunker barge operators to port authorities and regulators



For further information on becoming a member of the Society for Gas as a Marine Fuel, please contact SGMF via: Email office@socgmf.org or through the website www.socgmf.org



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Recent gas-related developments at IMO

IGC Code update - The draft revised International Gas Carrier (IGC) Code was approved at the 92nd Session of IMO's Maritime Safety Committee (MSC 92) in June 2013. Following IMO protocol, the revised Code now goes through an official review period until adoption at MSC 93 in May 2014, with a corresponding entry-into-force date of January 2016. The revised IGC Code will not be retroactive, but will apply only to vessels built after the entry-into-force date. There are a few parts of the revised IGC Code requiring clarification and these are being discussed with various flag states, the International Association of Classification Societies (IACS) and the IMO working group chairs. It is not envisioned that these clarifications will impact either adoption or the entry-into-force date.

IGF Code update - As IMO is currently between relevant sub-committee sessions, the development of the International Code for Ships using Gas or other Low Flash-Point Fuels (IGF Code) is being progressed via correspondence group. While the primary focus of the correspondence group remains the use of LNG as marine fuel, the group has also been tasked by IMO to also address methyl alcohol and low-flash diesel fuels. Once work on these three fuels has been completed, other potential low flash-point fuels, such as LPG, will be addressed.

Realistically, the IGF Code is now at least 18 months behind the IGC Code, as the next full sub-committee meeting dealing with the IGF Code will not meet until the autumn of 2014. This means that approval of the IGF Code should not be expected before MSC 94 in November



From January 2016 onwards all LNG carriers, regardless of propulsion system type, will need to comply with the new Reference Line requirements

2014, followed by a review period, adoption and, optimistically, a corresponding entry-into-force date of July 2017.

EEDI for gas carriers - With IMO's Energy Efficiency Design Index (EEDI) regime for conventional propulsion systems having entered into force 1 January 2013, the focus at IMO's most recent Marine Environmental Protection Committee (MEPC) meeting in May 2013 turned to non-conventional propulsion systems. Conventional propulsion systems include direct-drive, diesel-propelled arrangements. Non-conventional propulsions systems include both steam turbines and diesel-electric, i.e. DFDE/TFDE, plants. As a result, amendments to MARPOL Annex VI were approved, with a corresponding entry-into-force date of January 2016, to require LNG carriers powered by a non-conventional propulsion type to comply with the EEDI regime.

In an attempt to make the application of EEDI to gas carriers fair, the gas carrier fleet has been divided into two - LNG carriers and all other gas carriers - each with its own respective EEDI Reference Line. This means that gas carriers powered

by conventional propulsion systems, i.e. direct-drive diesels, including LNG carriers built between January 2013 and January 2016 must meet current EEDI requirements and the associated Reference Line. After January 2016 all LNG carriers, regardless of propulsion type, will need to meet the newly created LNG Reference Line requirements, and all other gas carriers will continue to need to meet the existing gas carrier Reference Line requirements.

IMO committee restructuring - In an attempt to more efficiently manage the work efforts of the Organization, the IMO has recently updated the Method of Work (Committee and Sub-Committee work procedures and related Terms of Reference) for MEPC, MSC and their subsidiary bodies. This has resulted in a restructuring of the subsidiary bodies to align with their new, respective terms of reference. In the restructuring the nine existing sub-committees have been reduced to seven. The new Carriage of Cargoes and Containers Sub-committee (CCC) will manage the Gas Codes and the IGF Code. EEDI has been, and will remain, under MEPC and has not been assigned to a sub-committee.

NEW MEMBERS

Port duo welcomed

Two port authorities companies have joined SIGTTO as associate members since the last Newsletter was published. The new members and their date of joining the Society are shown below. The SIGTTO membership now stands at 132 full members, 42 associate members and 21 non-contributory members.

Maritime and Port Authority of Singapore (MPA) 1 Mar 2013
Antwerp Port Authority 1 Aug 2013

The **Maritime and Port Authority of Singapore (MPA)** is the driving force behind Singapore's port and maritime development, taking on the roles of port authority, port regulator, port planner, national maritime representative and champion of the port's role as an international trading hub. With the opening of the

Singapore LNG import terminal in recent months, MPA now plays host to its own dedicated LNG carrier traffic in addition to the large volume of gas carriers transiting port waters.

Singapore is the world's largest bunkering port and MPA reports that it plans to start supplying LNG as a marine fuel by 2015. The Authority has contracted Lloyd's Register to develop the operational procedures and technical standards required to underpin a safe and efficient LNG bunkering capability in the port.

Like Singapore, the Port of Antwerp, which is administered by the **Antwerp Port Authority**, is one of the world's largest and busiest ports and is also promoting the provision of an LNG bunkering capability. And, like Singapore, the Port of Antwerp is aiming to have the new service in place by 2015. Antwerp has commissioned Det Norske Veritas (DNV) to compile its operational procedures and technical standards for LNG bunkering.

Antwerp has one other thing in common with Singapore - both ports already handle substantial volumes of LPG and petrochemical gas carrier traffic at a range of terminals within their jurisdictions.

Grain gets out the flags for SIGTTO

“National Grid Grain LNG is delighted to be welcoming members of the Society of International Gas Tanker and Terminal Operators (SIGTTO) to London and to its world-class flagship import terminal on the Isle of Grain,” states terminal manager Simon Culkin.

“Participation in the Society’s annual conference provides an excellent opportunity to share our individual experience and knowledge and to collectively maintain and enhance the excellent industry standards on safety and ship operations. There is a lot to be gained from being a member of SIGTTO and we are keen to continue building on our existing relationships with members.”

Mr Culkin continues, “At Grain LNG we have over 30 years of experience in the LNG industry and a proven track record of delivering on our commitments. As an independent terminal operator giving equitable customer service, we provide a reliable and highly flexible service.

“Through actively working with SIGTTO to develop and share best practice in the liquefied gas shipping and terminal industries, we continue to be leaders in LNG in the UK. I am committed to working with SIGTTO to use our knowledge and experience to promote the exchange of technical information to enhance the safety and operational reliability of terminals.”

Through the years since the commissioning of Grain LNG as an import terminal, the Marine and Maintenance departments have participated in many workshops around the world promoting best practice and engineered solutions in cargo operations for terminals.

The benefits of sharing experiences and technical information between members of the industry are the enhancement of safety and operational reliability of gas tankers and terminals. In addition Grain LNG values the benefits of active participation in SIGTTO working groups to develop world-class guidelines and industry briefs.

Situated on the Isle of Grain in the Thames Estuary 50 km to the east of London, the Grain LNG import terminal opened for business in July 2005 following conversion from a peak shaving storage facility. The commissioning of Grain LNG, with the capacity to process 3.3 million tonnes per annum (mta) of LNG, provided the UK with the ability to receive LNG cargoes for the first time since the old Canvey Island terminal was shut down in 1994.

Since then terminal has successfully completed two major expansions, making



Grain LNG offers space for 960,000m³ of LNG in eight tanks

National Grid Grain LNG is hosting not only SIGTTO's upcoming Panel Meeting in London but also an associated technical visit to its Isle of Grain import terminal

it the largest terminal in Europe. By December 2008 three new storage tanks of 190,000m³ each had been built, along with regasification facilities to boost the LNG throughput capacity at Grain to 9.8 mta.

This was followed by the construction of a second jetty and an eighth storage tank. Completed at the end of 2010, this Phase 3 expansion project raised the LNG handling capacity at Grain to 14.8 mta, equivalent to about 20 per cent of daily UK gas needs. The second jetty, which is able to accommodate ships of up to the 266,000m³ Q-max size, effectively doubled the availability of berthing slots at the terminal. To date Grain LNG has successfully unloaded 100 cargoes from the largest available LNG carriers.

Over the past year National Grid has been investigating extending the services offered at National Grid Grain LNG by including an on-site road tanker loading facility. Another option being considered

is the provision of LNG distribution and re-loading services. More specifically, Grain LNG is reviewing the possibility of adding facilities to enable the loading of LNG bunker vessels and coastal distribution tankers.

“We promise the SIGTTO Panel Meeting delegates signed up for the Grain LNG technical visit on 11 October a busy day,” concludes Simon Culkin. “There will be much to assimilate, not only in terms of the existing facilities but also as regards the full range of services the terminal may have on offer in a few years’ time.”

SIGTTO

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