



AUSTRALASIAN INSTITUTE OF MARINE SURVEYORS

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FROM THE PRESIDENT

Happy New Year to all members, industry colleagues and other readers. The festive season is now over and most people have returned to the grindstone, excepting the wiser ones who defer the break to a more cost effective part of the summer. By way of an overview I can confirm that 2012 looks like another big year for AIMS, in particular the Executive. December and January executive meetings have been perhaps the longest in our history and with an ever increasing number of matters on our agenda this is likely to become the norm rather than the exception. The matters being tabled include consideration of constitutional changes and increases to the size of the executive, better management of the continued growth in membership and increasing industry representation. This is all occurring in addition to our ongoing involvement in matters such as maritime training, changes in grain export regulations, bulk commodities and marine arbitration.

2012 is also our Biennial Conference year, with all planning progressing well for the function in Brisbane, later in the year. Please save the dates 29th to 31st August, for attendance at the conference, to be titled “Major Port Development – The Gladstone Experience”. Members are asked to schedule additional days for AIMS specific functions including the 2012 AGM. The theme of the conference is the significant activity that surrounds major port development works, from a variety of perspectives, including “the good, the bad and the ugly”. Its aim is to highlight to the port development industry the potential benefits of engaging AIMS members for their respective experience and qualifications across the range of tasks that comprise a major port development. Gladstone has approximately \$50 billion worth of port related industrial works in hand, with similar projects already underway in Western Australia and more approved in W.A., N.T., and Qld. As always there are lessons to be learnt and opportunities on offer. This conference is a ‘must be there’ occasion, for the quality of speakers and the networking opportunities. Further information will be available over the next few months.

New legislation applicable to grain exports has been in place for several months and all members and readers involved in this part of the industry are urged to become familiar with the specific changes and new requirements. Members are urged to contact their State Representative or Bradley Hedge (Grain Sub-committee) for any clarification or concerns, as some aspects of the rolling out of working systems are still being developed, including training albeit with a limited timeframe.

The President remains heavily involved with the development of Core Competencies for Marine Surveying qualifications, with this working group meeting for another 2 days in early February. The current work remains commercial-in-confidence, but will be promulgated in the future for public comment, as part of the due process. AMSA are to be complimented for the initiative they have taken in this regard, albeit they realise and appreciate the extreme necessity for this work to be undertaken with industry support, for the proposed maritime reforms to be made possible. Their willingness to consider and accept industry opinion in this developmental work is exemplary and the contributions of all working group participants to date has been exceptional.

In closing, I would like to welcome new members who have joined over the last three months, including some long practicing surveyors from very reputable organisations. These include A. Al Osta, M. Blandino and J. London as Members, P. Cuneo, R. Delos Reyes, N. Maningo, J. Tissera and A. White as Associates and S. Atherstone-Reynolds, D. Englis, and R. Sullivan as Probationary Members.

Steven Beale.
President.

Expansion of the Panama Canal.

Since the Panama Canal was opened in 1915 its capacity relative to ship sizes has 'shrunk', overtaken by the economy of scale that is so attractive to ship owners and operators. The Panamax ship dimensions are controlled by the lock sizes and the Post Panamax ship is now common – too large to use the canal. In 2006 the Panamanian government decided that there was no option but to increase the size of available locks, by building a new flight at each end of the canal.

The concept by the original French company was for a sea level canal, similar to the Suez Canal, through the Colombian province of Panama. Work was started under Ferdinand de Lesseps (of Suez Canal fame) in 1880 but was abandoned in 1893, defeated by the tropical climate, insufficient knowledge or experience of the geology and hydrology of the region and insurmountable health risks.

In January 1903 the United States signed a treaty with Colombia granting a renewable lease in perpetuity over the land necessary to build the canal. The treaty was ratified by the US Senate in March 1903 but not by Colombia. Later that year the US government was made aware of a revolt by the province of Panama against the Colombian government. In November 1903 US warships blocked Colombian warships from possible troop movements to put down the revolt and the US then recognised the new nation of Panama. Immediately, the Panamanian ambassador signed a treaty granting rights to the US to build and indefinitely administer the Panama Canal Zone. The US government then bought out the French concession.

The sea level canal concept was changed to a lock/lift concept by the US engineers, to reduce the volume of earth removal that would be needed to cut through the central mountainous area. An anomaly of the geography of the isthmus is that although the Pacific Ocean is to the west of the Atlantic Ocean the canal runs in a south-east to north-west direction from the Pacific Ocean. The canal is made up of a series of channels, staged locks and artificial lakes such that a ship passing from the Pacific end travels:

- ♦ 8.2 mile channel to the Miraflores lock.
- ♦ 1.1 mile, two stage Miraflores locks with a lift of 16.5 metres.
- ♦ 1.1 mile artificial Lake Miraflores.
- ♦ 0.9 mile Pedro Miguel single stage lock with a lift of 9.5 metres.
- ♦ 7.8 mile Gaillard Cut through the continental divide.
- ♦ 5.3 miles Chagres River,
- ♦ 15.0 miles Gatun Lake formed by building the Gatun Dam across the Chagres River..
- ♦ 1.2 mile, three stage Gatun Locks with a drop of 26.0 metres.
- ♦ 2.0 miles channel to Limon Bay.

The lock sizes that control ship size are 320 metres length and 33.53 metres width. The maximum draft controlled by channel depths is 12.6 metres.

New Locks.

The increase in global trade has resulted in the canal operating at over 90% of its theoretical capacity. When maintenance work is needed on the lock gates congestion can occur very quickly. If traffic backs up the canal brings in an 'auction' system for priority transits. BP Shipping has paid \$220,300 to go to the front of the queue, giving a passage cost of \$400,000.

The new locks will be three stage flights with dimensions of 426 metres length, 54.9 metres width and 18 metres depth. The channels will be dredged to give a depth of 14.0 metres. The Pacific locks will be built in parallel to the existing Miraflores locks, to the south-west, with new channels connecting to the existing canal. The Atlantic locks will be built to the east of the Gatun locks with channels connecting to Gatun Lake and Limon Bay. The old locks use mitre gates with a design similar to one drawn by Leonardo da Vinci, sealed by water pressure. Maintenance requires the removal of the gates to a dry dock, shutting down the traffic lane. The new lock gates will be double rolling gates that slide into recesses in the lock walls. The twin gate design means that each gate can be sealed within its own recess and pumped dry for maintenance, removing the need to close the traffic lane.

Water saving.

In spite of an average annual rainfall of over 2.5 metres water is a scarce resource in Panama. Gatun Lake is used as a major drinking water reservoir but is replenished only for seven months each year. Each day more than 7.5 million cubic metres of water is used to fill the canal locks. 60% of the water used in the new locks will be re-cycled through adjacent shallow basins. As a result, the new locks will hold 65% more water than the old ones but will actually use 7% less water per transit. In addition, the level of Gatun Lake will be raised by 45 cms., making an additional 2 million cubic metres of water available per day. The older, more water wasteful locks will be limited in use by doubling up smaller ships in the new locks.

Mules.

Most people who have passed through the Panama Canal have photographs of the electric 'mules' running along the sides of the locks, holding ships in position and manoeuvring them in or out. The new locks would have required 12 to 16 new mules but instead canal tugboats will do the work.

New Panamax size.

The expansion work was scheduled to complete by 15th August 2014, the 100 year anniversary of the opening of the canal. Current estimates are that the programme is about 12 months behind schedule with a strike in progress. The maximum size of ships able to use the new locks has not been announced however it is estimated that container ships will increase from 5,000 teu to 12,000 teu. The maximum displacement will be approximately 170,000 tonnes. Although shipping companies are looking forward to the extra flexibility US west coast ports are concerned. Los Angeles and Long Beach handle up to 40% of US imports, sending a large proportion overland by rail and truck to the east coast. It is estimated that they could lose up to 25% of their trans-shipment business after the canal extensions are opened.

(M. Bozier)

Checklists.

The use of checklists is very common in some industries such as aviation and, to an increasing extent, shipping. Checklists, as *aide memoires*, can be most useful in repetitive situations, for example bridge equipment checks prior to arrival at or departure from a port. They also serve to ensure that all facets of a procedure have been followed. It is common for a cargo surveyor to list in a notebook all the things that have to be obtained, read, noted or otherwise considered when carrying out a damaged cargo store survey.

P & I Clubs and other insurers are increasing their efforts in educating their insured, as a way of reducing claims. This has been in place for a number of years, with some Clubs making their publications

available to all. The following checklists and other information, which may be of use to surveyors, can be downloaded at no cost from the indicated Clubs.

U K Mutual P & I.

“Tanker Contamination Claims Checklist.”

The Club’s experience is that this is one of the major sources of tanker cargo claims. Loading and discharging cargo operations are joint operations between ship and shore staff. It is essential that the Chief Officer (or cargo officer) makes every effort to develop an amicable and effective working relationship with the key shore personnel. Contamination can occur on board or ashore.

The checklist has seven sections which go from the pre-loading phase to discharge and sampling. It identifies the main causes of cargo contamination on board and ashore and the key points that need to be considered.

“Tanker Shortage Claims Checklist”

This is a companion publication to the above, set out in three sections that cover pre-loading, loading and unloading. Establishing the quantity of cargo loaded is of course critical. Claims for alleged shortages after completion of discharge are, in the first instance, based on the difference between the net bill of lading figure and outturn quantities. Even if both terminals carry out their measurements correctly, each will (quite legally) round off temperature and ullage readings in their favour, so differences are only to be expected. In general the bill of lading quantity may be overstated and the outturn quantity may be understated. In the absence of a like for like comparison, the ship is the only common factor and therefore the measurements taken on board are extremely important.

The checklist also points out that cargo inspectors are, like all of us, human and therefore do from time to time make errors. Causes of errors and how to avoid them are detailed. When unloading, again a good relationship with the cargo inspector at the discharge port is essential.

“Carefully to Carry”.

The Club has published information about the carriage, care of and potential problems with various cargoes for many years. A lot of information is available on the Club’s website, at no cost, information that can be very useful to surveyors. The following subjects are covered:

Dry Bulk Cargoes.

Sections on preparation, stowage and survey (6), agriculture products (5), ores and minerals (4), steel and other metals (5) and timber/forestry products (4).

Liquid bulk cargoes (4)

Containers.

Sections on atmosphere-controlled containers (3), cargoes (6) and general (8).

Refrigerated cargoes (5).

Gas Cargoes (2).

Miscellaneous

Sections on cargoes (5), hatch-covers (2), loading, stowage and surveys (9). This last includes a technical article on silver nitrate testing for salt – water.

“Survey and Examination of Ships’ Lifting Appliances.”

The shipping industry, at least in Australia, has come a long way from the days of cargo derricks rigged in union purchase with the plethora of topping lifts, hoists, guys, blocks, shackles and cargo hooks. Almost all hoist wire eyes are now made with ‘Talurit’ or similar clamps and it is likely that most ships would be hard pressed to find someone who could make up an adequate eye splice in a wire rope. Similarly, the inspection of lifting appliances tends to be overlooked - until something goes wrong.

Lloyds Register has produced the new pocket guide in conjunction with the U K P&I Club, part of a series of pocket guides. The crane manufacturers MacGregor and Liebherr were also involved. Issues considered include poor preparation for surveys; problems accessing key areas for a survey; difficulties in obtaining maintenance records and operators not having an adequate understanding of issues.

TT Club.

Exploding reefer machinery.

Last year some reefer containers were repaired and/or re-gassed with counterfeit R134a refrigerant at depots in Ho Chi Minh, Vietnam. Subsequently, fake refrigerant has been discovered on ships and in other countries. Not all of the counterfeit gas is the same – there are different contaminants, but one is thought to be a blend of chemicals that includes methyl chloride (R40). This is poisonous and reacts with aluminium when they are in contact to form tri-methyl aluminium, a substance which ignites spontaneously in air and water. The compressors on five reefer containers filled with the fake gas have exploded and three technicians have been killed.

It is thought that the fake gas is being manufactured in China by more than one company and sold in containers labelled with recognised international companies such as Du Pont and Honeywell. Its use is considered to be very minor so far, under 0.2% of the world’s 1.3 million container fleet and most of these units have been quarantined.

The Containers Owners Association (COA) and TT Club called a meeting in London in December 2011, of representatives of some of the world’s leading refrigerator machinery manufacturers, container carriers, reefer service depots, container leasing companies and also a refrigerant manufacturer. In addition forensic, refrigeration and machinery experts attended. TT Club says that it is clear that fake gases have entered the disposable gas supply system. It is considered to be of paramount importance that the use of fake gases be avoided and prevented. Quick action can achieve this as the shipping industry (and supporting service companies) is fairly small and concentrated; it is regulated with trained technical staff; access to ships is restricted in ports and most service depots are run professionally.

COA and TT Club suggest that the following actions will eliminate the incidence of counterfeit gas in the shipping industry:

1. Test the contents of all R134a gas cylinders currently in use in depots and on ships, particularly that of new gas cylinders before taking into use.
2. Test gas samples from any refrigerated container before starting any service work or before using.
3. Isolate and neutralise any refrigerated container that tests positive for R40 contamination.

Procedures for testing samples of refrigerant gases have been developed and further information can be found on the COA website at www.containerownersassociation.org/resources.

(The above is based on a number of articles that can be accessed on the TT Club website at <http://www.ttclub.com/knowledge-store>)

(M. Bozier)

IMO guidance updated.

Although updated only recently, the IMO MEPC publication “Guidance for the Recording of Operations in the Oil Record Book Part 1 – Machinery Space Operations (All Ships)” contained in MEPC.1/Circ.736/Rev.01 has been revoked and replaced by a new revised edition: MEPC.1/Circ.736/Rev.02. The new revised guidance is intended to ensure compliance with MARPOL requirements for making entries in the Oil Record Book (ORB) Part 1 –Machinery Space Operations, and includes examples of ORB entries showing the correct use of the different codes and item numbers, along with explanatory notes. Ship-owners are advised to forward the IMO guidance document to their vessels to ensure compliance with the updated requirements. Port State Control Officers often inspect the ORB to ensure that the information it contains is accurate, and any discrepancies may trigger a more detailed investigation. In the event of serious ORB discrepancies being found the vessel may be detained and, in certain jurisdictions, crewmembers and managers/owners may be exposed to civil and/or criminal penalties.

Update on Australian Shipping Reform: Navigation and Coastal Trading Bills.

(Members will be aware that the Nav. Act is under review. The following is an edited article by Holman, Fenwick Willan which gives a very clear but concise summary of the current position)

Introduction

In late December 2011, the Department of Infrastructure and Transport released exposure drafts of the Navigation Bill 2012, Coastal Trading Bill 2012 and the Coastal Trading (Consequential Amendments and Transitional Provisions) Bill 2012 for stakeholder comment. The Bills represent the first steps taken by the Federal Government to implement the shipping industry reforms package announced by Minister Albanese in September 2011. There are further bills due to be released shortly which will address the tax reforms, the establishment of an Australian International Shipping Register and the ‘harmonisation’ of domestic commercial vessel safety. The Federal Government is aiming to have all shipping reform legislation in force by 1 July 2012.

The Navigation Bill

The Navigation Act 1912 is an important piece of legislation regulating a wide range of marine matters which primarily include ship safety and marine environment protection, seafarer safety and employment and the coastal trade. However, the Act is old. It has now been recast in plain language and simplified to reflect current drafting standards. To make navigating the Bill easy, each chapter contains a summary outline and a clear statement about which vessels the chapter or part applies.

Main Changes. Coasting Trade

One of the most significant changes is the removal of Part IV ‘The Coasting Trade’. The coastal shipping reforms which include the substitution of the current licence and permit system

with a simplified three tier licensing framework will be embodied in a ‘standalone’ Coastal Trading Bill (discussed below).

Application

The Navigation Bill introduces the concept of a “regulated Australian vessel” which, in general terms, is defined in the Bill as an Australian registered vessel which is not a recreational vessel and is proceeding on an ‘overseas voyage’. A voyage is an overseas voyage if in the course of the voyage the vessel is present outside the outer limits of the EEZ* (Exclusive Economic Zone) of Australia. However, the change in definition is unlikely to have any impact on the number or type of vessels covered by the Navigation Bill. The Bill applies to:

A. ‘Regulated Australian vessels’ at all times. The intention here is to ensure that vessels with Australian nationality comply with all relevant ship and marine environment safety standards and requirements whilst on the ‘high seas’.

B. All foreign flagged vessels (including those engaged in the off-shore industry) in Australian waters regardless of the voyage the vessel is undertaking, other than in the course of innocent passage.

All vessels are required to comply with provisions in the Bill regarding obligations to render assistance or report dangers to navigation.

Lighthouses Act 1911 - Aids to Navigation

The Lighthouses Act 1911 has been absorbed into the Navigation Bill and will, as a result, be repealed. The definition of ‘aid to navigation’ as it currently appears in the Lighthouses Act has been changed to include modern forms of technology for navigation aids. For example, the new definition expressly includes satellite navigation and global position systems. These terms are likely to ‘catch’ marine navigation aids such as the Automatic Identification System (AIS) and Global Navigation Satellite System (GNSS). The new definition is intended to be sufficiently wide and flexible to remain contemporary, that is, to continue to cover further technological developments.

Recent amendments to the Navigation Act imported into the Navigation Bill.

Civil Penalty Regime - safety and marine environment breaches

Recent amendments to the Navigation Act by the Maritime Legislation Amendment Act 2011 introduced new offences relating to actual or potential pollution or damage to the marine environment. A civil penalty regime for these and existing offences was also introduced. These changes have been replicated in the Navigation Bill. Under the civil penalty regime, AMSA is empowered to seek the imposition of civil penalties. The penalties are significant particularly where the contraventions are ‘aggravated’, i.e. where they have caused or had the potential to cause serious harm to the marine environment. For example, the maximum penalty for a Master who is found in breach of such provisions is now A\$660,000. The higher penalties are intended to act as a deterrent to unscrupulous operators.

Seafarer Employment Provisions - Maritime Labour Organisation

The recent changes made to Part II of the Navigation Act by the Navigation Amendment Act 2011 which address employment agreements and working conditions of seafarers have been imported - in a simplified form - into the Navigation Bill. Slightly higher civil penalties for breaches have now also been introduced. The inclusion of these employment provisions in the

Navigation Bill will ensure compliance by all regulated Australian vessels with the Maritime Labour Convention 2006 ('MLC'), which has been ratified by Australia (The Convention does not come into force until 12 months after it has been ratified by 30 countries. To date, 20 countries have ratified the Convention). The MLC sets minimum requirements for seafarer safety and employment conditions on ships. Measures will need to be taken by all Australian registered vessels to ensure compliance when the MLC comes into force.

The Coastal Trading Bill

Focus

The Bill reserves the Australian coasting trade to licensed vessels, whether under general or temporary license, with extremely limited provision for emergency licenses.

Commercial implications

The Bill exhibits a strong policy direction towards vessels in the coasting trade operating under a general license. This is done by limiting the duration and number of applications for temporary licences and by restricting the "emergency" category to rare events such as natural disasters. For cargo interests dependent on coastal shipping it will be imperative to plan a long term response including strategies to manage any additional operating cost, since calling in international vessels on a short term basis will cease to be an option after the transitional period. Correspondingly, opportunities will present themselves for coastal shipping operators who are able to plan and operate a viable service within the constraints of volume, seasonal and other variability as well as capital cost. No doubt much hangs on the tax reforms yet to be seen. If the tax reforms achieve the policy objective, both shippers and vessel operators should be able to put coastal shipping operations on a more certain mid/long term footing within the new framework.

There is an emphasis on public reporting for transparency, both commercial and administrative. Administrative Guidelines (which in the past have presented troublesome issues for both industry and administration) will no longer be a key instrument in the regime. Regulation will be relatively light handed, depending to some extent on the discretion to withhold, impose conditions on, or cancel, licences supplemented by a regime of infringement notices.

Single Regulatory Framework for domestic commercial vessel safety

Currently each State and Territory has its own safety regulatory regime that governs the safety of commercial vessel operations in Australia. A multitude of regulatory systems can create inefficiency and in cases where businesses operate across different jurisdictions, unnecessary burdens are imposed due to the need to comply with different sets of rules. The Marine Safety (Domestic Commercial Vessel) National Law Bill 2012 (due to be released shortly) will implement the decision of COAG (Council of Australian Governments) to create a single national law to regulate the safety of domestic commercial vessels. The intention is for each State to 'adopt' the National Law through legislation in each State. This will ensure that one national law, including regulations and Marine Orders, applies Australia wide. Under the National Law, AMSA is given powers as the single national regulator but will be permitted to delegate certain functions to existing State maritime safety agencies. The National Law Bill is due for release shortly and will cover commercial vessel safety, vessel construction and design, crewing and operations.
