Maritime Professional

2Q 2011 | www.MaritimeProfessional.com

Energy Transport

QUALITY AUDITS TO SOFTWARE SOLUTIONS TO INTERNATIONAL POLICY ... KEEPING ENERGY TRANSPORT FLUID

GMATS

GLOBAL MARITIME AND TRANSPORTATION SCHOOL

The Global Maritime and Transportation School (GMATS) mission is to prepare private sector, government and military professionals to be global leaders and innovators in maritime operations, inter-modal systems, and transportation security.
GMATS is co-located with the U.S. Merchant Marine Academy (USMMA) on 82 acres overlooking Long Island Sound in Kings Point, New York.

A Leader in Professional Training

- Able Bodied Seaman
- Air Cargo Operations
- Applied Marine Electrical Systems
- Basic Safety Training
- Combined Vessel, Company, Facility Security Officer
- Electrical Safety & High Voltage Electricity
- Facility PIC
- Fast Rescue Boat
- Marine Diesel Surveyor
- Maritime Anti Terrorism and Crisis Management
- Master 100 GT
- Medical Care Provider
- Overview of the Maritime Industry
- Programmable Logic Controllers
- Radar Recertification
- Steam Refresher
- Strategic Intermodal Transportation

Call to REGISTER NOW!

Phone: 516-726-6100 E-Mail: registrar@gmats.usmma.edu Web: http://gmats.usmma.edu
Located at: 300 Steamboat Road, Samuels Hall, Kings Point, NY 11024

DELTAWAVE
COMMUNICATIONS, LLC.

If you ever find yourself lost...

...don't panic.

The new pocket sized Shout Nano provides global two-way messaging and pinpoint GPS accuracy. When used with our dTrac mapping service, we've got you covered. It can also be used with our new optional Global Rescue Services!

GLOBAL rescue

"Delta Wave is also a Service Provider offering a comprehensive line of Iridium and Inmarsat mobile satellite products and airtime services."

866-650-9283 / email: sales@deltawavecomm.com

www.deltawavecomm.com

2nd Quarter
2011
Volume 1
Number 2

Maritime Professional

2Q 2011 | www.MaritimeProfessional.com

ON THE COVER

The ABS-classed Methane Mickey Harper, a 170,000-cu.-m. LNG carrier for BG Group built at Samsung Heavy Industries, Co. Ltd. The market for LNG carriers is currently bullish; all factors spelling opportunity for shipowners. The long-term prospect for gas demand is positive, the LNG carrier orderbook is at a 10-year low and day rates are high. ***An additional 150 LNG carriers are estimated to be ordered over the next ten years.*** *(Photo: Courtesy of BG Americas & Global LNG)*

Meet the Contributors

Gregory Linsin, Blank Rome LLP
Story p. 8

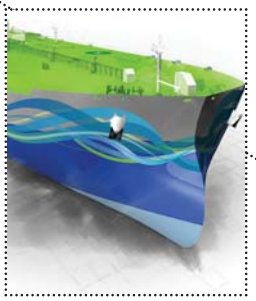
Jeanne Grasso, Blank Rome LLP
Story p. 8

Gurvinder Chopra,Lloyd's Register North America, Inc., *Story p. 12*

Robert Kunkel, President, Alternative Marine Technologies *Story p. 16*

BPA Worldwide membership applied for February 2011.

Also in this Edition



Maritime Professional

HQ 118 E. 25th St., 2nd Floor
New York, NY 10010 USA

Tel +1 212 477 6700
Fax +1 212 254 6271

URL www.maritimeprofessional.com
Email trauthwein@marinelink.com

ISSN - *2159-7758*

Managing Editor
Joseph Keefe
keefe@marinelink.com

Blogger Roster @
MaritimeProfessional.com

Lead Commentator	Joseph Keefe
U.S. East	Dennis Bryant
U.S. West	Martin Rushmere
Brazil	Claudio Paschoa
Mumbai	Josesph Fonseca
Hong Kong	Greg Knowler
The Netherlands	Keith Henderson

Publisher
John C. O'Malley
jomalley@marinelink.com

Associate Publisher
Gregory R. Trauthwein
trauthwein@marinelink.com

VP Sales
Rob Howard
howard@marinelink.com

Production
Irina Tabakina
tabakina@marinelink.com

Corporate Staff
Vladimir Bibik, IT
Rhoda Morgan, Sales Administration
Mark O'Malley, Public Relations
Jocelyn Redfern, Marketing
Esther Rothenberger, Accounting

Subscription
Kathleen Hickey
marprocirc@marinelink.com

Advertising Sales
Mike Kozlowski
kozlowski@marinelink.com
+1 561 733 2477
Tristan McDermott
mcdermott@marinelink.com
+1 561 732 0312
Dawn Trauthwein
dtrauthwein@marinelink.com
+1 631 472 2715
Jean Vertucci
vertucci@marinelink.com
+1 212 477 6700

Maritime Industry Websites

NEW WAVE MEDIA
BUSINESS NAVIGATOR

For over 10 years, New Wave Media has produced the industry's most trusted online information resources. Log on today for business news, opinion, jobs, products, supplies, networking, personnel, and much more.

Maritime news and information — www.marinelink.com

MarineLink.com
Maritime Reporter and *MarineNews* magazines online

For more than a decade, MarineLink has been the definitive website for breaking maritime industry news and information

Business networking and opinion — www.maritimeprofessional.com

MaritimeProfessional
the maritime industry online

MaritimeProfessional is the largest online networking group in the industry, with over 13,900 registered members.

Underwater technology and news — www.seadiscovery.com

SeaDiscovery.com
underwater tech and ocean science news

The online home of Marine Technology Reporter offers subsea science and technology news and information

Marine engines and propulsion — www.maritimepropulsion.com

MARITIME PROPULSION
Powering the Maritime Industry

The online database for marine power equipment- find engine reports, specs, suppliers, and auxiliary machinery.

Careers, jobs, and recruiting — www.maritimejobs.com

MaritimeJobs
where employers and job seekers connect

The maritime industry's premier job and career resource since 1999, with more than 70,000 unique users each month.

Vessels, equipment and suppliers — www.maritimeequipment.com

MARITIME EQUIPMENT

The best online forum to buy and sell vessels, products, and equipment- for all suppliers, buyers, and manufacturers

Mustering the Energy

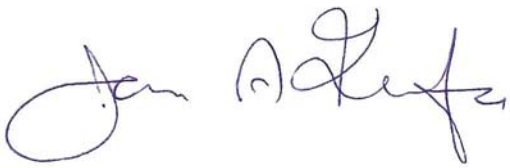
I recently stopped for a moment to contemplate the breathtaking price of gasoline at the local pumps. While those numbers contrast sharply to freight rates being paid to the world's collective tanker fleet, industry experts often remind me that the two variables have little, if anything to do with one another. INTERTANKO's new Managing Director Joe Angelo is also quick to tell me that his tanker members are currently being paid a certain rate for their services, but their costs to provide that service are significantly higher than that. For this reason and many more, our interview with the voice of the global tanker fleet (page 27) is an excellent primer on what to expect from those marine operators tasked with safe and economical transport of the world's energy supplies.

The headlong charge into creating a society where so-called green energy is king is a good thing. Believe it or not, tanker owners are already hard at work and at the heart of trying to make that happen. These efforts involve reducing or eliminating oil pollution, cleaning up stack emissions and mitigating other forms of environmental impact formerly passed off as "incidental to marine operations." That said, we are a long way – perhaps decades – from the clean energy utopia promised by President Obama as he tries to fulfill 101 similar campaign promises. In the meantime, we still need to drive to work and industry needs energy to run our economic engines.

This issue of *Maritime Professional* magazine focuses on the two most important aspects of global energy transportation. The environmental and regulatory side of running any marine platform in today's climate is arguably more difficult than navigating the business of moving energy from point A to point B. As a bookend contrast to the world according to INTERTANKO, we also feature an in-depth interview with the 24th Commandant of the U.S. Coast Guard, **Admiral Robert J. Papp**. Having personally interviewed the last four occupants of that c-suite office, I can also assure you that the Coast Guard's most experienced mariner is about to get down into the weeds – perhaps like no one else before him – with the industry that he regulates.

From the other end of the spectrum, the innovation emanating from the global tanker business has never been more prolific. The advent of software and hi-tech solutions for the waterfront, especially looking back at a business largely driven by "size" improvements for so long, is astounding. Within this edition, we highlight many of these advances, not the least of which is the promise of newer, squeaky clean marine engines capable of operating on LNG and/or green distillates. We'll also show you how to marry the regulatory and business aspects of staying afloat by remaining in compliance through the use of a well-managed audit program. It's better than it sounds.

Having ambled down the gangway of my last tanker assignment more than 25 years ago, I am only too aware of the changes that have come in the interim. Just as the T-2 tanker captain from the late 1940's would probably be flabbergasted at the grand scale of tank vessels in a modern age, so too will we marvel at what will come in the not-too-distant future. Count on it.



Joseph Keefe, Managing Editor | **keefe@marinelink.com**

THE LIST PEOPLE & COMPANIES

Insights

Legal Beat
MARPOL Enforcement in the United States

By Gregory Linsin & Jeanne Grasso, Blank Rome LLP

Blank Rome LLP's Gregory Linsin and Jeanne Grasso explain the challenges and lay out a cogent solution.

CURRENT TRENDS IN MARPOL ENFORCEMENT

The United States has long been aggressively enforcing compliance with the International Convention for the Prevention of Pollution from Ships, as amended ("MARPOL"), which is implemented in the United States by the Act to Prevent Pollution from Ships ("APPS"). Since the early 1990s, the effort has been directed at all types of registered and domestic tonnage – the full spectrum of waterborne commerce. Those entities and individuals prosecuted for MARPOL violations also span a wide spectrum of owners, operators, technical managers, masters, engineers, shoreside personnel and corporate officers.

MARPOL prosecutions commonly involve bypasses of the oily water separator or discharges of sludge overboard rather than through incineration. Few of these prosecutions involve illegal discharges in U.S. waters – virtually all involve false entries in the Oil Record Book ("ORB"). Maintaining an inaccurate ORB while in domestic waters or presenting an inaccurate ORB to the U.S. Coast Guard is a crime and a basis for prosecution, along with post-incident conduct such as obstruction of justice or false statements made to investigators following commencement of the investigation. These efforts are often viewed by the rest of the world as heavy handed, as many believe that enforcement actions for record-keeping violations with respect to illegal discharges occurring in international waters should be the responsibility of the flag State. The United States government disagrees and has stated unequivocally that it will continue to enforce, even more aggressively, until the illegal discharges stop.

The Department of Justice ("DOJ") recently noted that 88 million gallons of oil are discharged illegally from vessels each year – more than eight times the amount spilled from the Exxon Valdez. Thus, until flag states increase serious enforcement of MARPOL compliance, the United States will likely continue to be the world's MARPOL cop.

Prosecutions continue unabated, with more than a dozen MARPOL cases prosecuted during the last 24 months, as companies fail to learn from the mistakes of others. And, the prosecutions are now yielding higher penalties, jail time and the banning of ships from United States ports.

As an example of the DOJ's persistence, Stanships Inc. and three related companies, collectively the owners and operators of the M/V Americana, pled guilty again, in April of this year (Stanships pled guilty in a prior case in June 2010) to 32 felony counts for violations of APPS, the Ports and Waterways Safety Act and obstruction of justice. The companies will be fined $1 million and prohibited from trading to the United States during the five-year probationary period. The individual owning the companies is also banned from owning ships trading to the United States for five years. A whistleblower's report to the Coast Guard, including cell phone photographs of the "magic pipe," kicked off this investigation, which involved illegal discharges of sludge and oily water and the failure to report a hazardous condition prior to a United States port call. In the past, it has been rare to ban ships from trading to the United States and this is the first time an owner has been banned.

While whistleblowers have been part of the seascape in APPS prosecutions for years, more than 50% of the new cases stem from whistleblowers, probably because of the lucrative rewards DOJ is requesting and courts are awarding. This can amount to as much as 50% of any penalty paid for APPS violations. Unfortunately – and because of the reward prospects, whistleblowers often ignore company policies and the ISM Code by reporting wrongdoing directly to the Coast Guard rather than through the chain of command or to the Designated Person Ashore. This serves to undermine international systems in place to deal with potential violations.

The maritime industry has had ample notice of the aggressiveness of the enforcement actions and the lucrative awards being given to whistleblowers. Industry must therefore understand the controlling laws and enforcement mechanisms and take aggressive steps to ensure compliance and reduce enforcement risks. This is particularly important in light of the recent Memorandum of Understanding between the Environmental Protection Agency ("EPA") and the U.S. Coast Guard regarding enforcement of EPA's Vessel General Permit, which includes numerous recordkeeping and other requirements.

DEVELOPING A CULTURE OF COMPLIANCE

Many vessel owners and technical managers have become more proactive regarding MARPOL compliance as the pace of enforcement has increased. In some instances, enhanced compliance measures have been imposed by the courts in the United States following a port State MARPOL enforcement action. In other situations, companies have elected proactively to strengthen their compliance regimes, recognizing both the escalating environmental requirements and to minimize the risks of becoming the target of a MARPOL enforcement action.

These efforts can take the form of equipment upgrades or technical changes in engine rooms in an effort to prevent improper discharges. Uneven in their effectiveness (at best), technical improvements can be beneficial but experience has repeatedly demonstrated that environmental compliance is dependent primarily on (a.) the ship's complement, (b.) the degree of shoreside management oversight employed and perhaps most importantly, (c.) the strength of the overall corporate compliance culture.

For these reasons, many companies have dedicated increased resources to improving management practices designed to foster and enhance environmental compliance aboard their ships. These include:

- ***Enhanced Compliance Training*** **-** Frequent crew rotations and the unpredictability of future vessel assignments present a daunting challenge to the vessel manager attempting to develop a sustainable compliance culture aboard its ships. A number of companies have concluded that enhanced training programs for both engineering officers and unlicensed crewmembers are an important tool for communicating the company's commitment to rigorous compliance standards. To be effective, such training must be repeated periodically and regularly updated based on changing conditions.
- ***Open Reporting System*** **–** Information has value. For this reason, some companies have decided to augment the DPA reporting system under their Safety Management System by providing open hotlines or anonymous electronic reporting options to crew members whereby they can alert shoreside management of environmental deficiencies or violations aboard a ship. A few companies have even instituted an internal monetary reward system for crew members who provide accurate information regarding environmental problems.
- ***Audit Program*** **–** Most shore-based companies that are faced with the challenge of complying with complex regulatory systems also rely on periodic audits to evaluate the company's level of compliance and to identify opportunities for improvement. Maritime companies are also recognizing that a periodic audit program is a critical element of a robust environmental compliance program. Some have developed internal audit teams and others have concluded that third-party auditors provide a more objective assessment. To further improve the reliability of audit findings, some companies arrange for a percentage of the audits to be conducted on an unannounced basis.
- ***Role of Superintendent*** **–** Periodic shipboard visits by the manager's technical superintendent is a vital component of any environmental compliance system. Because of their detailed knowledge of the ship and familiarity with the engineering officers and crewmembers, superintendents should have a greater ability than port State control inspectors to identify conditions in the engine room that raise environmental compliance issues. Superintendents should be given clear and unequivocal guidance that, if any such conditions are identified during their attendance on a ship, the company's shoreside management must be promptly and thoroughly informed of the conditions, the conditions must be remedied, and the compliance risks must be thoroughly understood.
- ***Internal Investigations*** **–** If information is developed from any source, whether it be through the open reporting system, audit findings, or a superintendent's observations, that suggests an intentional MARPOL violation has occurred or is on-going aboard a vessel, careful consideration should be given to engaging outside counsel to conduct an immediate

internal investigation to develop a complete factual record and to provide legal advice concerning any corrective actions or reporting obligations that may exist. Seizing the initiative in the development and management of such information can help to control the potential negative consequences of any identified MARPOL deficiency, while strengthening the company's overall environmental compliance program.

*The Department of Justice (DOJ) recently noted that **88 million gallons of oil are discharged illegally from vessels each year** – more than eight times the amount spilled from the Exxon Valdez. Thus, until flag states increase serious enforcement of MARPOL compliance, the United States will likely continue to be the world's MARPOL cop.*

REVIVING THE ROLE OF THE FLAG STATE

The maritime environmental enforcement program in United States ports over the past several years has significantly distorted the MARPOL compliance and enforcement regime that is embodied in the Law of the Sea Convention ("UNCLOS") and in the MARPOL Convention itself. For many reasons, both UNCLOS and MARPOL vest primary responsibility for oversight of environmental compliance in the Maritime Administration of the flag State. From the issuance or endorsement of a vessel's International Oil Pollution Prevention certificate, to the development and distribution of ORB's, to annual vessel inspections and renewals of Documents of Compliance, the flag State is intended to have primary, on-going responsibility for ensuring compliance with environmental requirements and, if a deficiency is identified, evaluating what corrective action or enforcement response may be warranted.

The central role for the flag State with respect to compliance with environmental responsibilities parallels the range of other oversight responsibilities for vessel operations under international conventions that are vested with the flag State, all of which flow logically from an Administration's comprehensive knowledge of and relationship with a vessel's owners and technical managers. While port and coastal states are authorized under both UNCLOS and MARPOL to perform port State control inspections or to investigate and consider enforcement actions for pollution events occurring in their territorial waters, under both conventions these functions are secondary to the primary environmental compliance assurance role reserved to the flag State.

Early MARPOL enforcement cases brought by the United States were generally consistent with the international regulatory regime in that the cases brought against foreign flag ships were based on discharges of oil or plastic wastes that occurred in U.S. territorial waters. Over the years, "mission creep" has vastly expanded the scope of U.S. MARPOL enforcement program to the point where it is now wholly irrelevant where the alleged improper discharges occurred. In fact, none of the recent MARPOL enforcement cases brought in the United States have involved allegations of intentional pollution in U.S waters. Rather, in its role as port State, the United States has abrogated unto itself the primary compliance assurance role that was intended by international law to be performed by the flag State. This situation has developed over time due to a number of factors which include substantial financial awards for whistleblowers, the comparative passivity of major Administrations with respect to MARPOL compliance assurance and enforcement and finally, the reluctance of vessel owners and managers to discuss information regarding MARPOL compliance issues with the Administration and to resolve those issues in that forum.

This distorted MARPOL enforcement pattern can and should be corrected. Vessel owners and managers, working to identify MARPOL compliance issues themselves by utilizing the management techniques outlined above, will be in a better position to determine how and under what terms the compliance issue will be resolved. For example, presume a situation where a rogue Chief Engineer aboard a ship ignores company's MARPOL compliance policies and directed discharges of oily mixtures through the use of a "magic pipe." If the vessel's owner and its manager are not attentive to this situation, they are ceding significant authority to potential whistleblowers on board the ship, who will then collect evidence to document the violation and wait until they arrive at a United States port to disclose the information to the Coast Guard. Under this scenario, the ability to investigate the allegations and determine an enforcement resolution has been yielded entirely to United States authorities.

If, however, the information regarding this MARPOL violation was first obtained by the vessel's shoreside management before it was packaged by the whistleblowers and reported to the United States, the vessel's manager would be in a position to approach the Administration and develop a

resolution based on the flag State's judgment concerning any required corrective action or, if warranted, appropriate enforcement response. If warranted, corrective entries could be made in the vessel's ORB. This approach has the benefit of being consistent with the intended compliance assurance regime under MARPOL and UNCLOS and, for a number of reasons, would be far more likely to result in a balanced and measured resolution that would be advantageous to the vessel's owner. Additionally, unless the discharges in question had occurred in United States territorial waters, it would preclude further enforcement action by the United States.

CONCLUSION

The challenge of managing environmental compliance issues aboard vessels will only grow more difficult in the coming years. There are concrete steps that operators can take, as discussed above, to address these challenges intelligently and place themselves in a position to reduce the expanding enforcement risks.

The Authors

Jeanne M. Grasso, partner at Blank Rome, focuses her practice on maritime, environmental, and transportation law for domestic and international clients. Ms. Grasso counsels owners and operators of vessels, cargo owners, and facilities, including manufacturing facilities, both marine-side and inland. Ms. Grasso writes and lectures extensively on criminal enforcement of environmental laws, Coast Guard regulatory matters, and maritime security.

Gregory F. Linsin, partner at Blank Rome, is an experienced criminal litigator and concentrates his practice in the areas of white collar criminal law, environmental criminal litigation involving shore-based and maritime clients, environmental compliance, and internal corporate compliance investigations. Prior to joining Blank Rome, Mr. Linsin served for more than 25 years with the United States Department of Justice, where he managed and prosecuted complex criminal cases in federal courts throughout the country. Mr. Linsin is a frequent author and speaker on environmental criminal and compliance issues.

Insights

Quality Audits
Why they matter; Why you should care

By Gurvinder Chopra,
Lloyd's Register North America, Inc.

Many maritime professionals, from seafarers to shipping executives, see audits as an annoyance at best and a necessary evil at worst. How often have you heard sentiments along the following lines – or even thought them yourself?

- Our employees are proficient at their jobs, so why audit them?
- We only maintain this system to keep the auditors happy.
- These records aren't helping us run our business, but our external auditor wants them to done this way.
- We have two different types of management meetings – one to address the minimum requirements of our quality system, and one to cover our real business issues.
- I have been told not to include repairs, defects or serious incidents in the Master's review.
- I do not consider that ISM/ISPS certification is providing any benefit to my company. All it does is add to the paperwork.
- As a manufacturer of marine safety products following the Marine Equipment Directive, I find it difficult to attend to so many auditors, and each different agency has its own set of requirements.
- While maintaining a quality system takes effort, and audits require work to prepare for and attend, companies can and should achieve real benefits in safe, efficient operations from the process.

And yet, these audits do matter. You ou should care – here is why:

PURPOSE OF AUDITS

It is vital for organizations to recognize that their quality systems belong to them, and that systems need to be meaningful and appropriate to operations. A well-planned quality system will help an organization determine its road to success. Every employee can and should take pride in becoming a part of the process.

To ensure systems support business objectives, management needs a way to verify objective evidence of processes, assess how successfully processes have been implemented, judge the effectiveness of achieving defined target levels and provide evidence concerning reduction and elimination of problem areas. In addition, a process to identify and correct non-conformities must be implemented, which provides opportunities for continual improvement. This is possible only through audits.

Every aspect of a firm's functions and processes must be linked to its quality system, and audits must be able to evaluate the effectiveness of the implemented systems. Quality auditing should not only report on non-conformances and corrective actions but also highlight areas of good practice. This allows different departments in the organization to share information and amend their working practices based on audit findings, which contributes to a continual improvement process.

Quality audits can be an integral part of regulatory compliance. For example, the International Safety Management (ISM) Code, the International Ship and Port Facility Security Code (ISPS) and Quality Modules of the Marine Equipment Directive (MED) all require that quality audits be performed to verify the implementation of specific requirements laid down in these standards.

Employers also have an implied moral obligation to ensure that work activities and environments are safe for their employees, and a substantial body of research shows that effective safety management can reduce the financial exposure of an organization by reducing direct and indirect costs associated with accidents.

ROLE OF MANAGEMENT

Commitment from top management and leadership by example are absolutely necessary to get the most benefit from audits. Management's commitment should be visible and establish the organizational structure and internal environment to motivate employees. This is possible by providing

adequate resources and effective communications, holding meetings, conducting reviews and taking actions towards continual improvement. As a result, employees can take pride in every role they play within the organization to help achieve its goals and objectives.

Meetings for ISO matters and business requirements should not be separated. There are many common factors, and the intention of any certification is 'business growth'. Make management review meetings meaningful, action-oriented and compelling for everyone concerned.

In some organizations, top management welcomes the audit findings. They encourage internal and external auditors to provide findings which could be useful for improving company processes. Such managers do not discourage staff when non-conformances are reported, as these findings are considered tools for improvement or opportunities for growth.

ROLE OF AUDITORS

To make audits an effective learning experience for those being audited, auditors play a crucial role.

Auditors should encourage the process owners by uncovering the genuine concerns within the organization or identifying the areas obstructing the growth of that department or the company as a whole. This can be achieved by using the problem-solving resources most appropriate to the situation or organization. These resources can include organization tools like brainstorming, cause and effect diagrams, checklists and surveys; analysis tools like fishbone analysis, the eight disciplines (8D) process, the DMAIC (Define, Measure, Analyze, Improve and Control) model, the "five whys" strategy, pie charts, cost of quality (COQ) measurements, scatter diagrams and fault tree analyses; and general improvement techniques like failure mode and effects analyses (FMEA) and mistake-proofing.

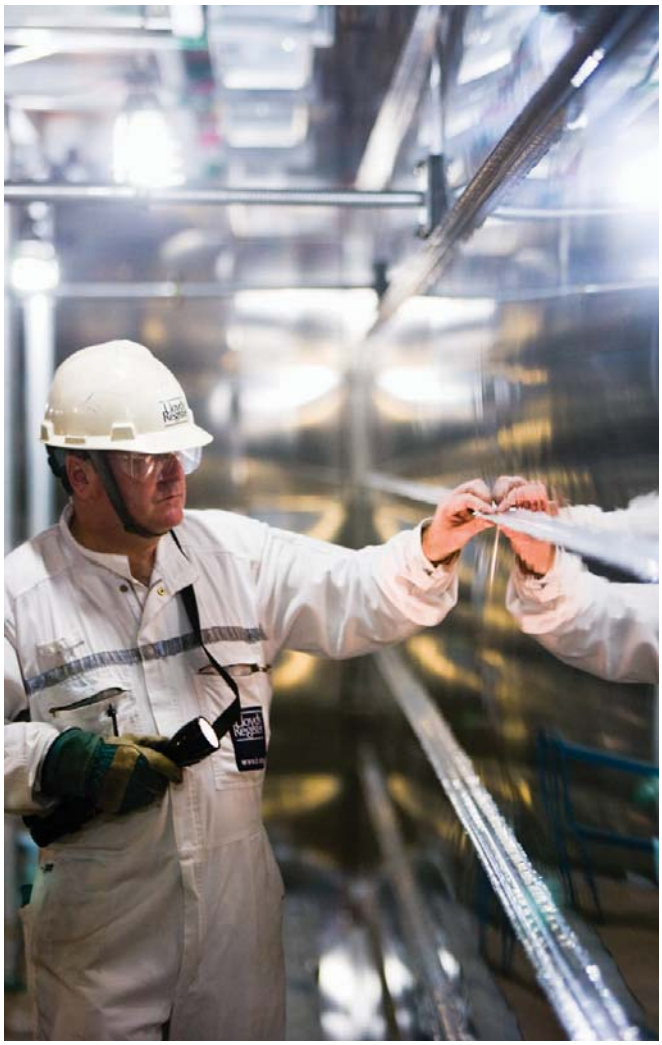
Effective auditors know the importance of understanding the organization before conducting an audit. Taking time to determine areas of prime importance by speaking with management, they stay focused on the bigger picture while also taking process owners into confidence to ensure they understand that the auditor is honestly there to help. It should never appear that auditors are simply on a fault-finding mission. Based on experience, auditors can also provide examples of best practice which could prove useful for companies with similar processes.

RELEVANCE OF DOCUMENTATION

Quality documentation is a must in the modern world. Documentation ensures accountability, facilitates coordination and enables service improvement. It also helps you to guard against the risk of potential litigation. Anyone who has been involved with lawyers or P&I after an accident will

understand the importance of quality records.

Each person in a company or on a ship must be made aware of the importance of accuracy and honesty in the documentation and records they are required to maintain. However, companies should do not burden themselves with extra procedures or sets of records by duplicating them. It helps to do a risk assessment before, during and after implementation of any work process or procedures in order to avoid unnecessary duplication. If employees or process owners are clear about the steps to be taken for any process, or if the process is very simple and if attrition rate is very low, there is no need to create a detailed procedure. For example, photographs that show what is and what is not acceptable could be displayed in work areas. Sometimes, a visual demonstration can be easily understood, making it more effective than detailed documentation.



IMPORTANCE OF TRAINING

Training is a critical aspect of any quality system. Training on familiarization of processes for new crew members onboard a vessel, personnel dealing with safety products or welders working on pressure vessels for a Pressure Equipment Directive (CE marking) job is vital and should be undertaken with due diligence.

Auditors performing assessments of processes, either as internal or third-party auditors, need to stress the importance of training. Identification of training, planning and completion of training programs and, very importantly, evaluating the effectiveness of training programs is vital to the process. Training is also an ideal way of completing corrective actions where a change in process is identified based on root cause analysis. In this way, the responsible people are made aware of changes and amended procedures.

CONDUCTING EFFECTIVE AUDITS

One of the most important objectives of a quality audit is measuring the effectiveness of an organization's Quality Management System (QMS). By assessing its processes, a company has the ability to identify areas in need of improvement. Without an audit, the quality system becomes an open loop without feedback to the management and without corrective action. Internal audits also allow employees to learn about other departments. This empowers employees and gives the opportunity to see how the organization can work together. Auditing reinforces the QMS and can be effective if those being audited feel prepared to come under scrutiny. Some committed organizations include all processes, including accounting and information technology systems, in the purview of their QMS. Conversely, a recent audit revealed that the cargo division of an airport certified to ISO 9001 had a system that may not cover all aspects of customer or passenger satisfaction.

It is also important to have a cohesive method of evaluating the root cause of every finding, problem or complaint received from any stakeholder. This analysis helps prevent the recurrence of similar problems, which may prevent vessel detentions or repeat product failures.

Some vessels have been detained simply because of improper root cause analyses which could not effectively control the activities on board the vessel, including maintenance issues, crew training, upkeep of safety equipment and similar issues. For example, if a defective printer creates incorrect labels that are pasted on a life jacket, the ship with the improperly labelled life jackets may get stopped by a Port

State Control Inspector. Unless the defect is rectified with suitable root cause analysis, the issue could happen again and require the manufacturer to recall the product from the market. Similarly, if root cause analysis of issues – such as oil leakages in the bilge of engine rooms or an accident caused by improper communications between the deck and engine room – is not carried out, similar incidents will keep happening. This is why companies must communicate about incidents, non-conformances and best practices observed on their vessels or in other office locations.

AUDITS: MEANINGFUL CHANGE, ADDING REAL VALUE

The audit process can bring about meaningful changes that can add real value to an organization. Key metrics to employ when preparing for an audit can include:

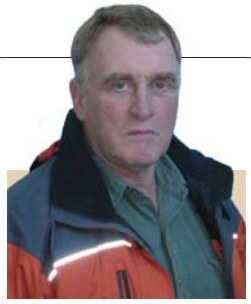
- Be open to your auditors. They are there to help your organization – your organization's success is their success as well.
- Procedures should be brief and should address the basic process just enough to explain the process to the process owner. Write what you intend; do what you have written.
- Have suitable reviews and re-reviews of your quality documents at scheduled intervals to monitor effectiveness.
- Master's reviews/management meetings should include review of Safety alerts and other information received from the office. Maintain a record of these reviews. It shows involvement of crew as well as management commitment.
- Encourage the crew members to read out safety- and environment-related articles during the meetings and get them involved. Maintain a record of doing so.
- Have an effective system of taking corrective and preventive actions. Involve everyone and ensure that the effectiveness of your corrective and preventive actions is monitored.
- Encourage and motivate crewmembers who are adaptive to change and volunteer to improve the system.

The Author

Gurvinder Chopra is the Manager of Americas Marine Management Systems for Lloyd's Register North America, Inc., a member of the Lloyd's Register Group of entities. The Group enhances the safety of life, property and the environment by helping its clients to ensure the quality construction and operation of critical infrastructure. The content of this article is the opinion of the author and does not reflect the opinion of, or acceptance by, Lloyd's Register North America, Inc.

Insights

Alternative Fuel
Defrosting LNG



By Robert Kunkel, President,
Alternative Marine Technologies

As Cargo, Fuel or both; LNG is emerging as the clear and clean way forward for the maritime industry.

IN THE BEGINNING

The use of LNG as a marine fuel is not new. Vessels trading cryogenic LNG have burned boil-off natural gas in steam boilers for many years as a simple solution to maintaining necessary temperatures and pressures within cargo spaces. The use of the fuel varied according to the size of the ship and a boil off rate ranging between 0.10 to 0.18 percent of the total cargo. As a result of the variable quantities, gas was not considered a "primary" fuel and the provision of standard heavy fuel oil tanks remained with ship construction. That mindset, construction practice and the pro forma use of heavy fuel oils may soon change. Like the rapid warming that allows shipping in heretofore unheard of Arctic routes, LNG's considerable utility is also about to be unfrozen.

WARMING UP TO NEW POSSIBILITIES

The boil off loss of LNG cargo and its economic impact eventually led to the development of new re-liquefying technology. Smaller simpler systems installed onboard that allowed the gas boil off to be returned to a liquid state and eventually sold as cargo. This new technology in turn drove shipbuilders to consider two stroke and four stroke diesel engines as the ship's prime movers. These diesel engines were more fuel efficient than steam boilers and were additionally capable of operating on smaller amounts of available boil off gas.

In particular, engine manufacturer Wärtsilä recognized the coming changes and developed a slow speed dual-fuel 7RNMD90 engine in 1973 for the LNG carrier "Venator". They followed with high-pressure, two-stroke gas engines in 1986 for marine use and introduced their first medium-speed high-pressure gas engines targeted for land-based markets during the same timeframe.

The move to gas was not a stretch for internal combustion engines. Many shoreside power plants throughout the United States and Europe have adopted the technology and utilized the fuel to meet strict stack emission requirements set by the U.S. Environmental Protection Agency (EPA) and the European Environmental Agency (EEA). Power utilities are now reconsidering natural gas as a stable power source in a sector that has been historically served by coal and nuclear power. As gas slowly conquers its two largest issues – volatile price fluctuations and questionable supply – coal struggles with emission issues and nuclear power has come under a new wave of attacks as a result of the fallout in Japan. All of these variables may positively affect LNG's expansion into new marine propulsion sectors.

SUPPLY, DEMAND AND INFRASTRUCTURE, TOO

New discoveries abroad along with development of shale gas in the United States have solved the supply issue. Domestic shale gas resources have doubled in two years to 827 trillion cubic feet, according to the DOE 2011 Annual Energy Outlook. Almost 500 trillion cubic feet more than 2010 estimates, this doubling of production could translate into a twenty percent increase in total natural gas by 2035 at prices below the 2010 reference case of about $4.50/mm btu. Emissions and technology aside, as crude oil prices continue to rise with instability in the Middle East, favorable natural gas pricing and an abundant supply will serve to bridge North America and Europe away from oil.

The construction of the LNG bridge has already started. North America (Canada and Mexico included) contains approximately thirteen LNG import terminals. Cheniere Energy Partners plans to add liquefaction capability to export LNG to their Sabine Pass plant by 2015. Freeport and Macquarie Energy have similar plans for liquid export at their Quintana Island facility. El Paso hopes to install LNG truck loading facilities at their Elba Island, GA import facility to serve a land-based market that has seen a national 18 percent increase in the bus, truck and rail markets. These export plans and distribution systems may well serve as a blueprint for new marine fuel distributions market in North America.

Small scale LNG distribution is gaining momentum in Europe. The Linde Group, a global gases and industrial engineering firm that produces and distributes cryogenic products in over one hundred countries, has established itself globally as a provider of unique LNG capabilities. These range from gas clean-up and liquefaction technologies for LNG production to on-ship re-liquefaction systems and storage tanks, with small-to-large scale LNG plants built on several continents. In March, Linde's Scandinavian subsidiary AGA received its first load of LNG at their new import terminal in Sweden. The terminal supplies natural gas to a local refinery, Stockholm's city grid and other local industries. It is also

positioned to support the growing interest in LNG fueling by shortsea vessels and passenger ferries in the Baltic Sea. Linde is also participating in similar efforts in other geographies, including North America.

SAFETY & EDUCATION: NOT FEAR

Not long ago, fear accompanied any discussion of transporting liquid natural gas in Northern Europe. The tales included potential terminal explosions wiping out entire cities and theories that an explosion in an offshore Livorno, Italy terminal would crumple the leaning tower of Pisa. In reality, natural gas is flammable; hence its utility as a viable fuel source.

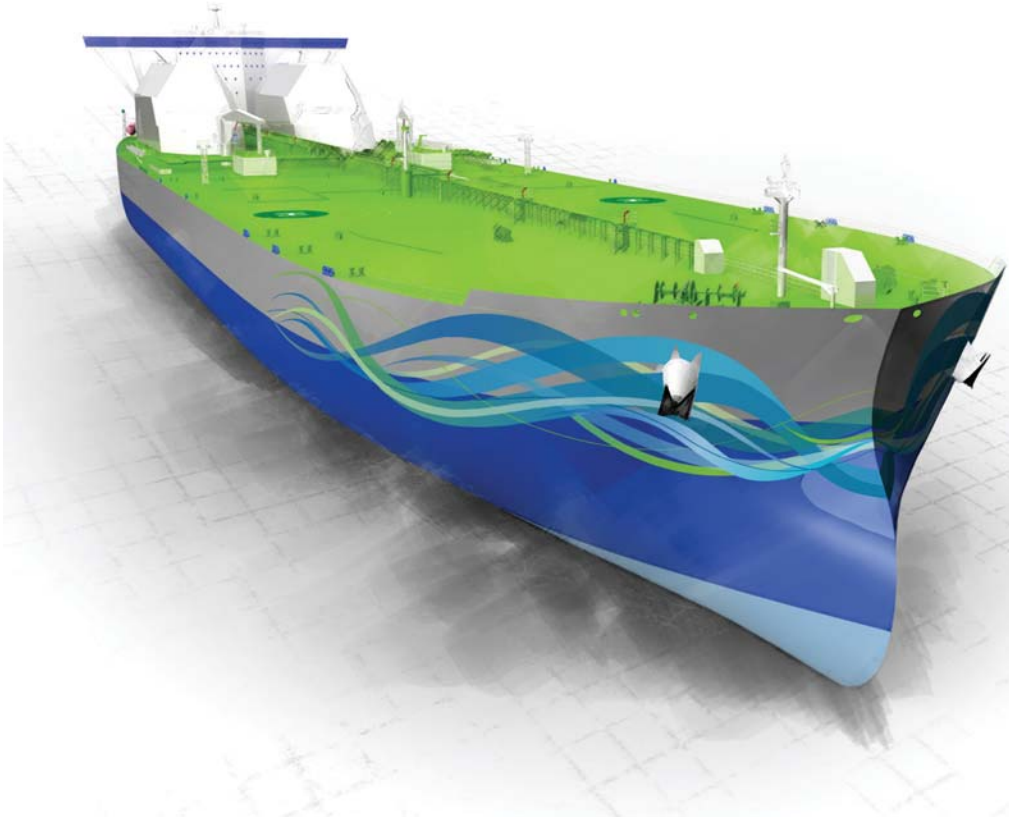
As a liquid in a cryogenic state, there is no danger of explosion and the fuel is stable. It simply cannot ignite. Beyond this, the ongoing establishment of small distribution networks of bunkering stations, barges and terminals to deliver marine LNG throughout Northern Europe has been somewhat effective in calming public fears. The fuel change in this area was necessary to meet IMO SECA and ECA emission standards established in the Baltic and North Sea as far back as 2005.

North America itself faces the same IMO ECA emission challenges in August of 2012. The effort to dispel irrational fears and the planning of infrastructure therefore must begin now. Despite reports from naysayers, neither issue is insurmountable. And, the decision of which fuel helps to meet the environmental restrictions looming large in the porthole seems simple enough. Those still unsure can watch an informative LNG video by clicking ***http://www.youtube.com/watch?v=xjYPb0M5S-Q***.

Finally, environmental concerns over escaping methane due to misfire or problems in the combustion space, an issue called "methane slip," is also causing renewed discussion in Europe. In fact, engine manufacturers have already addressed this issue with new piston ring development and injection timing and the technology advances daily.

NORTH AMERICA: TIME TO CATCH UP

Why is the establishment of a North American LNG distribution network so important? A look at the growth of LNG propulsion and technology in Europe will reveal the answer. Over 100 vessels use the fuel for propulsion today, including vessels actually delivering LNG. The growth sector for the fuel in Northern Europe has been fueled by shortsea shipping, ferry services and offshore supply boats which involve (a.) shorter voyage itineraries and (b.) routing that transits areas where LNG bunkering services are available.



In the case of DNV's Triality concept and with LNG realistically priced at $12/mmbtu, the financial benefits compared to a base case VLCC running on HFO with exhaust scrubbers and ballast water treatment is about $20M over 20 years. The projected fuel cost savings over the life of the ship will more than pay for the investment.

Engine manufacturer Wärtsilä has played a major part in the LNG expansion with nearly 60 vessels employing dual-fuel engines and over 1.5 million running hours of operation. These four-stroke engines employ technologies that provide low emissions and maximum fuel efficiency in several different engines sizes – the Wärtsilä 50DF, 34DF and 20DF. Their design influence does not stop at the engines. Wärtsilä also provides LNGPac, a complete LNG storage system with bunkering station, delivery controls, cold box compartment and glycol-water heating unit.

A turn-key design and manufacturing integration process is available to both owner and shipbuilder. The mix allows ship design ranging from large container or cruise ships to small harbor tugs and offshore supply vessels. Hence, the key to the future of LNG as a marine fuel resides in global availability, beyond short voyage itinerary and into every sector of blue-water shipping. America could play an important role in that development.

As gas slowly conquers its two largest issues – volatile price fluctuations and questionable supply – coal struggles with emission issues and nuclear power has come under a new wave of attacks as a result of the fallout in Japan. All of these variables may positively affect LNG's expansion into new marine propulsion sectors.

NOT JUST CONCEPTS: VIABILITY

Det Norske Veritas (DNV) has certified more than 21 vessels now in service. Based upon their operational experience and safety records, DNV remains convinced that LNG is the fuel of the future – inside and well beyond IMO ECAs. The DNV Triality project introduces a VLCC concept that has the same operational range and capacities of existing VLCC tonnage. Three of the most likely trading routes include the U.S., China and Europe with all of those theoretical voyages starting in the Arabian Gulf.

The Triality design incorporates three environmental features; a ballast free and V-shaped hull design, a VOC re-condensation system and the prime element – LNG as fuel. Employing a 13,500 cubic meter LNG fuel tank with an operational range of 25,000 nautical miles, the design elements allow a 34 percent reduction in CO2 emissions. On the other hand, refueling Triality requires 270 truckloads of LNG. This minor drawback should encourage some spirited entrepreneur to visualize the huge business opportunities represented by LNG bunkering for the maritime trades.

CLEANER AIR NOW: BUT AT WHAT COST?

The use of LNG alone reduces carbon emissions by approximately 25 percent, sulfur oxides (SOx) by nearly 100 percent, nitrogen oxides (NOx) by 85 percent and particulate matter by nearly 95 percent. The health and environmental issues seem simple enough, yet North American LNG development has fallen drastically behind that accomplished in Europe. The lack of interest begs the question: Is it possible to go "green" in the United States and be profitable? Both DNV and Wärtsilä believe the answer is yes. Others believe changes need to occur.

The real challenges revolve around public support, perception and unfounded rumor. For example, one prominent offshore oil service provider announced they had not considered LNG and dual fuel engines because the engines cost four times the price of existing Tier II equipment. Wärtsilä refutes that misinformation by asserting that LNG propulsion reaches well beyond the engine and into many other areas of the ship.

According to Wärtsilä, the total cost runs about 3-to-5 percent above existing new construction prices with the cost of the engines alone about 15 percent above current engines burning HFO. Do the environmental benefits outweigh the cost? In the case of DNV's Triality concept and with LNG realistically priced at $12/mmbtu, the financial benefits compared to a base case VLCC running on HFO with exhaust scrubbers and ballast water treatment is about $20M over 20 years. The projected fuel cost savings over the life of the ship will more than pay for the investment.

THE WAY FORWARD: HISTORY, LOGIC & NEED

The way forward in the United States, where coastal (short-sea) shipping is underdeveloped, will be difficult. The failure to utilize ferry or Ropax tonnage as extensively as the Europeans only exacerbates the problem. The LNG test platform has simply not been available and to reap the considerable environmental benefits that LNG provides, the fuel must be available here in North America. That said, the technology has advanced to a point where smaller, offshore oil support vessels, harbor tugs or ATBs can be competitively built in smaller, second tier shipyards in the United States. This is

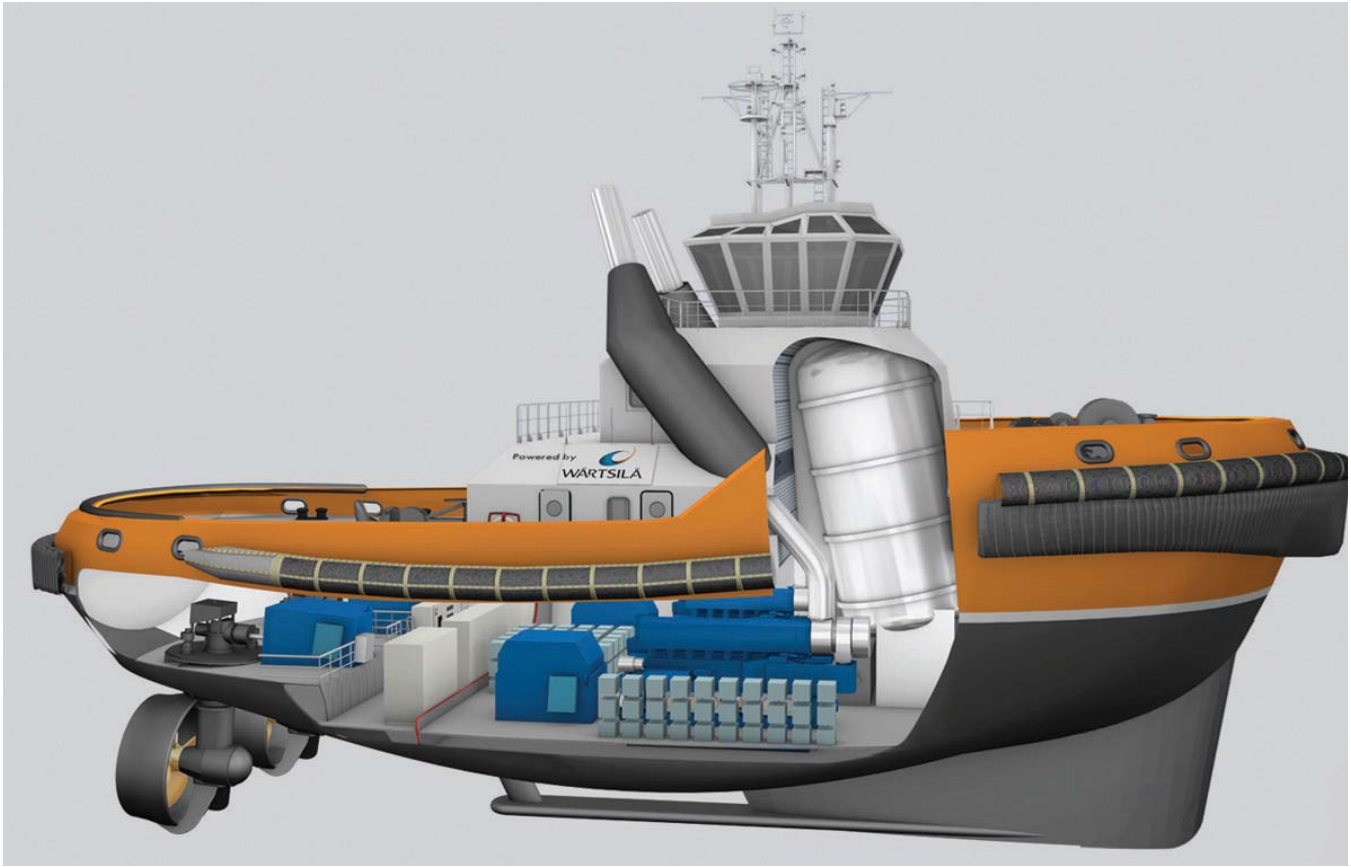
work that is surely needed in this economic environment.

One way to provide the necessary "spark" for LNG would be to create a "sunset waiver" or "pilot program" to build larger LNG powered RoRo, container feeder or small scale LNG distribution vessels in foreign yards, allowing U.S. coastwise privileges. That "spark" likely carries as much fear and debate as LNG itself – but 2012 and North America's ECA requirements are just around the corner. The decision to proceed is best handled by learning from the Baltic & North Sea experience where LNG has been successfully employed as a marine fuel over the past 10 years. But, even that high standard has been eclipsed by the outstanding international safety record, spanning 50 years of handling and ocean transport of LNG. Clearly, it is time to "defrost LNG."

The Author

Robert Kunkel, President of Alternative Marine Technologies, served as the Federal Chairman of the Short Sea Shipping Cooperative Program under the Maritime Administration and Department of Transportation from 2003 until 2008. He is a past Vice President of the Connecticut Maritime Association, a contributing writer for various trade publications and Technical Manager for Coastal Connect (www.coastal-connect.com) a U.S. company actively developing LNG propulsion as a maritime component of short sea shipping and offshore wind energy along the coasts of United States.

Engine manufacturer Wärtsilä has played a major part in the LNG expansion with nearly 60 vessels employing dual-fuel engines and over 1.5 million running hours of operation



Ship Management

Middle East

Noah Ship Management Controls its Growth

by Greg Trauthwein

So, where do you turn when you would like to start your own ship management company, but you need a million dollars and the worst financial crisis of a lifetime has rendered traditional sources moot? In the case of Dubai, UAE-based Noah Ship Management's Svein Elof Pedersen and Thomas Chacko Arakal, the core tenants of the real estate business – Location, Location, Location – applied to their vision of creating a small, efficient ship management company. "The banks would not even let us in" the front door, said Pedersen. But because he lived in Dubai for more than a dozen years and had a network of connections with the locals, he successfully reached out to one for the seed investment that effectively gave rise to Noah Ship Management, a progressive ship management company which is long on experience as well as ideas on simple yet crucial methods to save ship owners millions annually.

SETTING UP SHOP

Though the investment in and growth of Dubai over the past decade is in a word spectacular, Dubai too was swept into the global financial meltdown, which served to grind to a halt its construction and infrastructure spending spree. Storm cloud for many, silver lining for some.

"Dubai is very inexpensive right now, as this office cost about 250,000 AED ($68k) to set up; the space was just 50 AED (about $13.50) per square foot," said Pedersen, meaning the time was ideal for a small company to open its doors and build business without onerous overhead.

Noah received its license to operate nearly one year ago, May 13, 2010, and officially opened its doors two months later in July 2010, earning its first contract to manage one ship in August 2010. At the time of *Maritime Professional's* meeting with Pedersen in his office in Dubai, the company had grown to 12 employees including two technical superintendants managing six ships for two owners; one local owner for three ships, and a Maltese owner for three ships. Noah's projection for the end of 2011 is 15 ships under management, and the five-year plan is 35 vessels. "Our optimum size is 35 ships … the intention is to keep this smaller, more manageable," Pedersen said. "If you have 35 ships or 150 ships, it really doesn't matter because you're not making more money, due to the increased top end management costs" of a larger organization.

"We are concentrating now on the UAE as there is a lot of investment in the region," Pedersen said, particularly in the offshore sector, where there are 482 offshore vessels operating in the region, but there is no one management company specialized in the offshore sector, as Pedersen intends to steer Noah.

While Noah is currently small in terms of personnel and vessels, it is large in experience, as both he and managing director Thomas Chacko Arakal have a combined 60 years maritime ship management experience, with names such as EMS Ship Management, Thome Ship Management, Barber Ship Management and VShips highlighted on their CV.

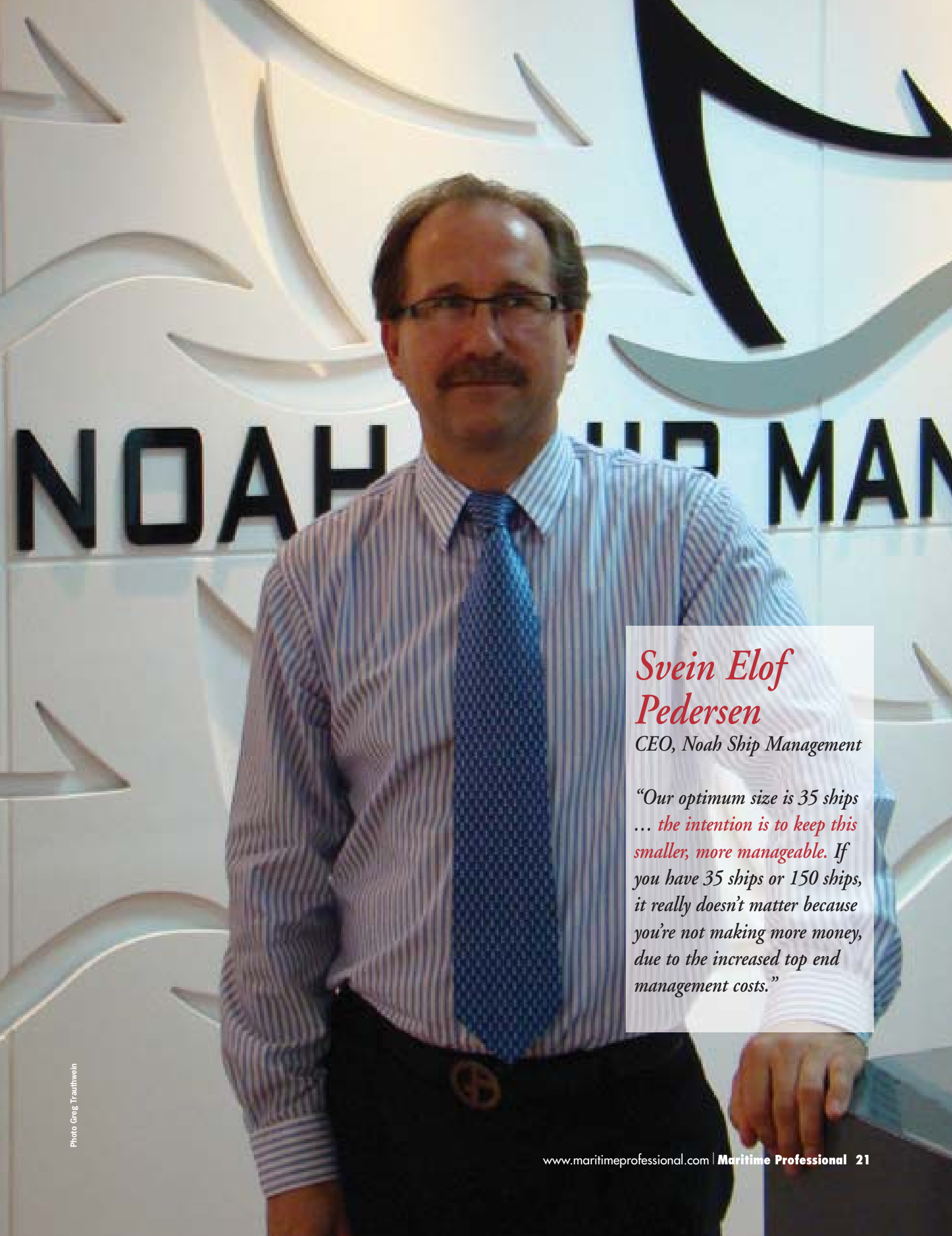
AVERAGE BUDGET PER YEAR, PER VESSEL ($)

Item	Annual	Per Day
Payroll	1,303,026	3570
Insurance	200,700	550
Provision	68,500	188
Lube Oil	142,900	392
Stores	148,000	405
Repairs & Maintenance	308,000	844
Radio & Tele	29,000	79
Miscellaneous	74,000	203
Management Fee	150,000	411
Average Annual Budget	$2,424,126	$6642

Source: Noah Ship Management

CONTROL = PROFITABILITY

Pedersen contends that a ship management company does not have to be large to be profitable, but it must control costs (see Chart 1) with a vigil eye on the bottom line and the average annual budget of $2.4m ($6,642/day) for each ship. "Traditionally there is too much dead capital stuck on every ship, which can be significantly reduced with proper management." He estimates that there is, on average, $1m in inventory on each ship, and Noah's mission is to, via planning, reduce that inventory from 5 to 15%; effectively saving between $50,000 to $150,000 per ship per year; between $1 to $3m when extrapolated across a 20 vessel fleet.



Svein Elof Pedersen

CEO, Noah Ship Management

"Our optimum size is 35 ships … the intention is to keep this smaller, more manageable. If you have 35 ships or 150 ships, it really doesn't matter because you're not making more money, due to the increased top end management costs."

Photo Greg Trauthwein

In addition, Pedersen and his team take fuel consumption and saving particularly serious, as a 2.5 to 5% bunker consumption reduction can equal savings of $6.9m alone for a ship which burns 50 tonnes/day at $550/tonne, with 250 steaming days per year. To help reduce consumption, the Noah team melds experience with technology, focusing:

- passage planning
- engine tuning
- weather routing, and
- hull condition.

Starting any new company, much less a ship management firm in a particularly fragile but recovering global marine market, involves elements of risk.

Buoyed by a booming regional market, Svein Elof Pedersen – armed with extensive experience and a simple business philosophy – nevertheless has upstart Noah firmly positioned and well on its way.

URL: www.noahshipmanagement.com
EMAIL: info@noahshipmanagement.com

Stanford Marine Grows Fleet

Established in 1997 as the vessel owning and operating branch of the United Arab Emirates-based Stanford Marine Group, Stanford Marine is in the midst of a major fleet expansion. In 2009 the firm acquired five vessels and acquired a company that had 10 vessels on order including six new 58-m offshore supply vessels. This brought the fleet to nearly 40 vessels and expanded the company's operational area to include Southeast Asia. The six 58-m offshore supply vessels are being built at China's Fujian Mawi Shipbuilding Ltd. The first of these vessels, delivered, in late 2010, was the Stanford Kite. The Stanford Condor and Stanford Osprey followed in February 2011. The other three sister vessels, the Stanford Caracara, Stanford Goshawk and Stanford Saker, will be delivered over the second and third quarters of 2011.

These are versatile vessels, described by the owners as Multi Purpose Supply Vessels, capable of transporting 162 cubic meters (cm) of liquid mud, 187 cm of bulk cement, 369 cm of water ballast/drill water, 458 cm of fuel oil and 196 cm of potable water. Liquid discharge rates with a 75-meter head include 150 cm per hour for fuel oil, 100 cm per hour for both fresh and drill water. Two pumps can offload 75 cm per hour of liquid mud while bulk cement is discharged at 13 cm per minute from two 80 psi pumps. With a 5.5-m molded depth the hull has a 13.8-m molded beam making possible a 376 sq. m. cargo deck with a 500-ton capacity. Accommodation for up to 50 workers and crew is provided in a range of single, two bunk and four bunk cabins. The engine room includes an impressive suite of Cummins engines. These include three Cummins KTA19-M diesels to power the three 350 kW main generators, one Cummins 70 kW emergency genset, and one Cummins KTA38-M1 delivering 746 kW at 1800 rpm to power an extensive FiFi system. The system has the capacity to throw water 120m at a height of 45-m above sea level from two monitors each capable of delivering 1500 cm of water per hour. One monitor is also fitted with a double barrel for foam discharge. In the event of fire fighting, the hull and deckhouse are protected by a water spray curtain. Main propulsion is provided by a pair of Cummins QSK60-M each delivering 2200 HP at 1600 RPM. The engines drive fixed pitch propellers in 360 degree azimuthing drives. These are Schottel SRP 1212FP. Maneuverability is further enhanced by a 500 kW Schottel tunnel thruster. The addition of these six Dynamic Positioning capable platform supply vessels will consolidate Stanford Marine's position in the offshore industry.

Photo courtesy of Stanford Marine Group

NOAH SHIPMANAGEMENT
SENIOR MANAGEMENT

Svein Elof Pedersen, CEO, Noah Ship Management
Mr. Svein Eloff Pedersen has been a partner and CEO of Noah Ship Management since it's inauguration in May 2010 Prior to this, Mr. Pedersen was the President of EMS Ship Management. He has held several senior management positions in the shipping industry, including Managing Director of Thome Ship Management, Managing Director of Barber Ship Management and Vice President of International Tanker Management (ITM). Mr. Pedersen brings with him 30 years of maritime experience and holds a degree in electronics/automation.

Thomas Chacko Arakal, Managing Director,
Noah Ship Management
Mr. Thomas Chacko Arakal is a founding member of Noah Ship Management DMCCO. A Marine Engineering Graduate with a Masters Degree in Business Administration, he has extensive maritime industry experience as a Ship Manager in worldwide locations. More than 30 years in the maritime field with Barber Ship Management, International Tanker Management (ITM) and VShips. Founding member of International Tanker Management, last eight years as Vice President with ITM.

NOAH SHIP MANAGEMENT
SERVICES

- **SHIP MANAGEMENT**
  Offshore and sea going vessels of all categories
- **CREW MANAGEMENT**
  Crewing and training of seafearers from multiple sources world wide
- **POST FIXTURE**
  Voyage and demurrage calculations
  - Charterparty administration
- **CORPORATE ACCOUNTING**
  Revenue calculations and consolidation of accounts
  - All systems sarbains oxley compatible
- **SALES AND PURCHASE INSPECTIONS**
  Vessels pre-purchase inspection and reporting
- **NEW BUILDING SERVICES AND PROJECTS**
  - Feasibility studies
  - Drawing approvals
  - Site supervision

P

Profile

MarPro Profile

Brian Pope, SVP, L-3 Communications/Marine & Power Systems Group

If Brian Pope is not the obvious choice to be *Maritime Professional* magazine's first ever featured maritime professional, then perhaps the notion of who and what we consider to be important on the waterfront should be rethought. As a perfect example, Pope's influence on electrical propulsion and the development of electrical systems afloat has been nothing short of profound. And, while the typical ship's engineer might not know his name, Pope's work will likely impact how ships move through the water for generations to come.

DEFINING POPE'S ROLE FOR L-3

As Senior Vice President of Business Development for L-3 Communications / Marine & Power Systems Group, Brian Pope has, since joining L-3 in late 2004, been instrumental in growing the Marine Group to over $1 billion in revenues in 2009 with over 45% in the Commercial sector alone. There, L-3 supplies Electrical Propulsion, Automation and Navigation systems. Pope adds, "L-3 M&PS is a global marine group and although our commercial orders dipped in the 2008-2009 timeframe when the industry stalled, we had a strong backlog of orders that allowed us to weather that downturn and allowed us to position our commercial business for the recovery. In addition, we took the opportunity to invest in a new NACOS Platinum control and automation architecture, which has already delivered over 150 new orders."

For Pope and L-3 in particular, the advent of dynamic positioning equipment has been an exciting development. The NACOS Platinum control and automation architecture has been at the heart of L-3's efforts in this sector. He explains, "As part of our development in the new NACOS Platinum automation system, we have integrated our dynamic ship positioning modules into the same hardware, allowing common hardware architecture for a complete ship system. This provides major opportunities to provide reduced costs to ship owners and we are seeing this as a significant competitive advantage in the marketplace."

As Pope looks to grow and maintain L-3's market share, he describes a management style that is very much a hands-on type of approach. "I spend a majority of my time meeting with our customers throughout the world and visiting our operations. We continue to seek to expand L-3's product and systems portfolio by development or acquisition and are also focused on continuing our organic growth," he said. That's

not to say it has been all wine and roses along the way. He adds, "The slowdown in military shipbuilding across the world definitely provides a challenge to our business, and our divisions addressing this segment of our market. However, the growth in our passenger cruise shipbuilding business is a testimony to our bridge to propeller capability and offerings."

POPE'S ELECTRICITY

A member of the American Society of Naval Engineers (ASNE), Pope has also been associated with the Marine Industry for over 25 years. Notably, and prior to joining L-3, Mr. Pope held senior positions with ALSTOM in North America, including President-U.S.A. and Regional Vice President-North America for ALSTOM Transmission & Distribution, a $400 million Business with 1,300 employees. He served as President ALSTOM Industry Group-North America from 2000 to 2001. Prior to this, Brian served as

Marine & Power Systems

Brian Pope

Senior Vice President of business Development for L-3 Communications / Marine & Power Systems Group

"Regarding the "All Electric Ship" – "The prime drivers were fuel savings and emissions, where one is able to closely match the propulsion load to the available power generation. The second factor was the reduction in cost of electrical drives, thereby making it a more affordable design as compared its mechanical alternatives. The challenge, mainly in the 90's, was to persuade ship owners and operators, including navies, to embrace this new technology."

www.L-3com.com/MPS

President of Cegelec USA, where he developed business with the U.S. defense industry, resulting in numerous contracts for the supply of electrical propulsion equipment including the T-AKE fleet of electric ships for the U.S. Navy.

A recognized leader and a champion of the "All-Electric" ship concept, Pope has long touted its viability to commercial and military buyers alike. He insists, "For the all electric drive -- the modern concept was pioneered by cruise ship design, although electric drive technology was used on some naval designs back in the 1930's. It was supplanted by steam and mechanical driven ships, but is now being used on a wide variety of ships. The prime drivers were fuel savings and emissions, where one is able to closely match the propulsion load to the available power generation. The second factor was the reduction in cost of electrical drives, thereby making it a more affordable design as compared its mechanical alternatives. The challenge, mainly in the 90's, was to persuade ship owners and operators, including navies, to embrace this new technology."

Arguably best known for his close involvement with the development of the "All-Electric" ship over the past years, he has presented at several conferences on the subject. Beyond this, he is a member of the Advisory Board at the Center for Advanced Power Electronics at Florida State University. Mr. Pope received his Master of Science in Management and Business Studies from the University of Warwick, Coventry, England after receiving a College Associateship in Electronic Engineering at the Bolton Institute of Technology in Bolton, England.

Not surprisingly, Pope's career path began with General Electric in the UK, where he was given responsibility for the introduction of industrial electrical variable speed drives for a wide range of applications. Following that he assumed a leadership role introducing microprocessor based automation systems for numerous applications - from car production plants to chocolate manufacturing. Later, as he took charge as President of the North American operations of CEGELEC (which was then rolled into Alstom), the growth of the all electrical ship became evident.

COMING UP NEXT

Brian Pope's current choice for recreational reading – ***"The Beach"*** by Alex Garland, describing Garland's adventures in Southeast Asia – gives MarPro readers no more insight into what will come next for L-3's Senior Vice President than his promise to continue the rapid expansion of L-3's product offerings. "Having been with L-3 for over 6 years, I look forward to what lies ahead both personally here, and for our group. As for the future of L-3 M&PS, we will continue to grow our marine electrical business and are committed to building on our position as a maritime leader." Based on past performance, however, L-3's future under Pope's steady and highly technical hand will be anything but boring.

– MarPro

Interview

Tankers

The New Year at INTERTANKO

New leadership (Joe Angelo), New Vision(s) – same solidarity at INTERTANKO.

by Joseph Keefe

There is little that one can count on in shipping from year to year. The word "change" comes to mind immediately. Another constant is a steady hand at the helm at the International Association of Independent Tanker Owners (INTERTANKO), the voice of the world's collective tanker market. So, when Joe Angelo replaced long time (10+ years) INTERTANKO stalwart Peter Swift as INTERTANKO Managing Director less than 4 months ago, industry watched closely for any changes in course. But INTERTANKO's new MD is anything but an unknown quantity and he clearly hit the ground running. In April, MarPro caught up with him at his Arlington, VA offices for a SITREP on the world of tankers. Angelo summed up his service thus far by saying, "Just over 100 days into my tenure as MD, I would rather have us be proactive as opposed to be reactive to what happens around us."

Well-known to industry and the regulatory community alike, Angelo previously spent six years at INTERTANKO as Director of Regulatory Affairs and the Americas and also as Deputy Managing Director, starting in 2009. With Katharina Stanzel – coming to INTERTANKO from the IOPC Funds and ITOPF where she was involved in marine pollution claims management – already established as Deputy Managing Director, INTERTANKO leadership remains in good hands. A detailed work plan is already in place, featuring what Angelo characterizes as six major work focus areas, further broken down into 25 high priority work items. A quick review of Table 1. below reveals that Angelo, Stanzel and the entire INTERTANKO will have their hands full in the coming months.

We asked Angelo to rank the priority items in terms of importance. Reluctant to place more importance on one item over another, he did concede, "These are the major issues and sub-issues that our members want to focus on for 2011. Ranking them – I haven't done it and I'm not sure it is necessary. Having said that, the number one burning issue on the plate of INTERTANKO and probably most of the shipping industry, is piracy." (See chart of INTERTANKO's Key Focus Areas on top of page 29).

PIRACY, PIRACY, PIRACY

As 2011 kicked off, the INTERTANKO Executive Committee decided that a more aggressive role – doing more in terms of addressing piracy – was in order. Angelo fleshed

out the INTERTANKO plan, which consists of a two phase approach. "Starting out, we signed a contract with a public relations firm, who helped us establish Phase I and Phase II. Phase I is complete and it consisted of four major elements, kicked off by a March 1st Advertisement in some major global publications." That AD, Angelo explained, directed readers to a WEB site (www.saveourseafarers.com) which prompts readers to send a letter to their head of government imploring that these governments take on piracy, eliminate motherships and ultimately come up with a solution. By the end of April, the site had recorded more than 40,000 hits and had generated more than 10,000 letters.

Phase II, now underway, involves engaging the press, social media outreach, blogs, press releases and finally, seeking to engage a high profile name to take on the cause. Of the final effort, Angelo hopes to have this accomplished in the next 12 months. INTERTANKO remains active in other ways, as

Joe Angelo

Managing Director, INTERTANKO

"The number one burning issue on the plate of INTERTANKO and probably most of the shipping industry, is piracy.

We believe that it is up to each individual owner to do their own risk assessment and determine what's best for their company and ships. We also believe it up to government to provide freedom of the high seas. INTERTANKO does not believe crews should be armed."

well. These include educating members on the use of citadels, armed guards and other evasive, defensive techniques. Angelo also clarified INTERTANKO's positions on armed guards and the proposed practice of arming mariners. "We believe that it is up to each individual owner to do their own risk assessment and determine what's best for their company and ships. We also believe it up to government to provide freedom of the high seas. INTERTANKO does not believe crews should be armed."

SHIP VETTING – AND TERMINALS, TOO

Angelo addresses the thorny issue of ship vetting by showing some of that proactive leadership that he promises from the outset. "Just as the oil majors have instituted their vetting system to ensure quality in shipping, we've instituted, through our WEB site, a terminal database which allows the Master of the ship to submit data – good and bad – through a simple numbering system, one through five. We contact the terminal with regard to any poor rating immediately. And, we ask them what they intend to do to rectify the situation. We can't make anyone do anything but this has been ongoing for three years and has had some impact." Angelo adds, "Our members also report when they encounter inadequate reception facilities here in the U.S. and the rest of the world. We provide the Coast guard with an anonymous report, so our member is not exposed. The Coast Guard then makes sure that terminals do have adequate facilities for reception before they allow the terminal certificates to be renewed. Internationally, we report to IMO who sends it on to individual port states."

With regard to the proliferation of tanker vetting in today's business environment, Angelo insists, "We do not question the need for these inspections. However, once a quality inspection is conducted by a responsible, recognized organization, it should be accepted by everyone." With regard to the Oil Companies International Marine Forum (OCIMF) SIRE process, INTERTANKO meets regularly with the oil majors to raise concerns about vetting matters, with an eye towards improving the process. Angelo also admits, "Right now, the biggest issue for our members is the burden presented by the vettings whereby some inspectors are looking for nothing but as many deficiencies as they can find." Beyond this, he says, one oil major's vetter won't be accepted by another oil major, resulting in multiple, redundant inspections. Add to this the third party traders and other entities that won't accept any SIRE vetting, flag state, class and port state control inspections, and the real burden to tanker owners becomes obvious. Angelo says flatly, "It is out of control."

REGULATORY FOCUS: INTERTANKO ADDRESSES THE LOOMING BALLAST WATER TREATMENT CRISIS

In case you were wondering which of the two dozen environmental and regulatory changes facing tanker owners was of most concern, Joe Angelo was unequivocal in his focus on the Ballast

INTERTANKO'S Key Focus Areas

SAFETY/TECHNICAL	SEAFARERS	ENVIRONMENT	MARINE OP'NS	REGULATORY/LEGAL	TANKER INFO.
Damage stability	Criminalization	GHG Emissions	Piracy	Sanctions	Tanker MKT
Inert Gas	Competence	Ballast Water	Vetting	Limits of Liability	Panel Meetings
Shipyard STDS	Shore Access	Reception Facilities	Port State Control	Insurance	WEB
Fuel Quality	Fair Treatment	Air emissions	Chemical Op'ns	Oil Spill Compensation	
Mercury in Crude Oil					

Source: INTERTANKO

Water Management issue. "The most difficult thing facing us right now is ballast management and treatment. We have the international convention, adopted by IMO but not yet in force. IMO says that the equipment is available and that it should be installed. We are canvassing our members right now to gather as much data as we can so that we can go to the upcoming MEPC meeting and provide good information for the committee. Right now, we are somewhat concerned about the large number of ships that would have to comply by the 2012 deadline and we don't see how the manufacturers are going to be able to produce enough equipment for our members and all of shipping, for that matter," explains Angelo.

While The MEPC meeting in July is important from the IMO perspective, Angelo points to the bigger concern over what might happen in the United States. As a U.S. Coast Guard veteran, Angelo in April expressed a "high degree of confidence" that they would eventually do the right thing. He added, "I would be very surprised if the initial standard does not meet the IMO requirement. But, we also worry about the ludicrous standards being considered in California and New York. As an industry advocate, we are working with both states – all of the stakeholders, actually – to convince them that they need to look at this whole issue. It's an uphill battle, but we're giving it a try."

INSURANCE: OPA 90 – LEAVE IT ALONE

The Oil Pollution Act of 1990 and the response, prevention and liability compensation evolving from that have been very effective in the United States in reducing oil spills. That's the view from INTERTANKO. Joe Angelo continues, "That's a piece of legislation that has proven its effectiveness. When congress last year was proposing all sorts of legislation as a result of the Deepwater oil spill, that was of concern to not only tanker owners but all of the shipping industry." Angelo also points out that the risks associated with offshore drilling are completely different than that of the energy transportation industry.

In response to the proposed changes to insurance and prevention laws, the full gamut of shipping industry advocates – including INTERTANKO – spent considerable time last year trying to convince Congress that the legislation was not necessary. Of particular concern to INTERTANKO were the proposed amendments to limits of liability for damage and other standards that have been around for 150 years. Angelo says, "We certainly understood the need and the desire by congress to properly compensate families of the 11 men tragically killed in the accident, but we did not think it necessary to open the whole issue up the shipping world. It is our position that OPA 90 has served industry and indeed all stakeholders well. While we were please to see that congress did not pass the new legislation, we continue to work to make sure any future changes are reasonable and practical, should they choose to go that route."

TANKERS & THE FREIGHT MARKET: A CAUTIONARY WORD

With regard to the state of current market conditions, Angelo declined to go into specifics but he declared firmly, "It is no secret that the tanker market right now is not very good. There are too many tankers out there for the available business." And while no one really knows how long these conditions can last, Angelo added a word of caution: Tanker members are currently being paid a certain rate for their services, but their costs to provide that service are significantly higher than that. They can only maintain that level for a certain period of time. "After that," asks Angelo, "what could possibly happen? Well, there could be conditions that could impact safety on the ship and so we are engaging in dialogue with the oil companies in particular to see if this is of concern to them, as well. As we move through this tough tanker market, I'm not saying that the rates today do not support safe operations. What I am saying is that downstream, we're con-

The Website, www.saveourseafarers.com has already recorded 40,000 unique hits and has generated, through an easy to use format, almost 10,000 letters to heads of state all over the globe to become more proactive in the fight against piracy. INTERTANKO Managing Director Joseph Angelo encourages everyone to visit the site and use the format as a way to generate momentum in this important cause.

cerned that it might manifest itself into safety issues and we are starting to explore that issue. We are trying to be proactive; that's all."

MARINER COMPETENCY GOES BEYOND STCW

Joe Angelo readily admits that INTERTANKO members are concerned about officer competency. And, in part, as a response to the 'officer matrix requirements' developed by the oil majors, INTERTANKO has developed its own tanker officer training standards (TOTS). Angelo says, "Those oil major requirements are extremely difficult to meet and INTERTANKO supports a process which allows members to involve their officers in a process that will ensure that their people are trained to a standard well above the STCW requirements. The goal here is that a member would put his people through the training and that could be used by the oil majors as an alternative to the officer matrix. Thus far, some of the oil majors, on an irregular basis have accepted our TOTS program as an alternative to the officer matrix. We're looking to develop that program further that system so that more of the oil companies accept our program standards. And this links to the officer retention problem. We feel that in doing that, we'll first and foremost improve competency but also help in terms of crew retention."

GREENHOUSE GAS EMISSIONS (GHG)

Angelo says that INTERTANKO is watching the gathering storm over greenhouse gas emissions (GHG). Laying out the INTERTANKO position on this key environmental issue, he explains, "It goes without saying that shipping contributes about 3 percent of the world's GHG emissions, and shipping should play a role in reducing GHG emissions. In that regard, there are three fronts addressing the situation. The IMO, looking to mandatory requirements to reduce GHG, to a much lesser extent, you have the UNFCCC, and on the sideline, and watching right now, you have smaller entries like the European Commission along with the US looking the same way." He continues, "INTERTANKO believes that shipping should reduce its footprint, it should be done through IMO and it should be across the board for all international shipping and it should be done as soon as possible."

The IMO's upcoming MEPC meeting (62) in July will be, in Angelo's estimation, a key moment in reducing GHG emissions. As IMO looks to adopt an Energy Efficiency Design Index (EEDI), INTERTANKO fully supports the adoption of the index and other market-based measures. Angelo adds, "We're not sure what market-based solutions are best right now, but we want to make sure that the options are fully fleshed out. We support IMO action on the EEDI in July, and in doing so, it would demonstrate its competency in this area and allow the UNFCCC to say IMO has taken action and then acknowledge that IMO should be the controlling body. This would also allow flag states such as the US and the EU itself to acknowledge that IMO's action represent a way forward and the right way to go."

PARTICULATE MATTER, NOX & SOX

Many industry observers concede that it was INTERTANKO that boldly stepped forward a number of years ago and proposed to IMO the changing of ship's fuel to distillates. Angelo, remembering the early proposal, says, "We were the scourge of the industry. In the end, the MEPC member states of the IMO saw the wisdom of what we proposed and they adopted these measures into Annex VI. This required all ships to eventually deal with their stack emissions." Today, IMO allows this to be accomplished in one of two ways – through

the changing of fuels or through abatement technology aboard the ship. "In our view – and now that IMO has provided two alternatives – it is up to our members to decide which method to employ to meet those requirements." However, Angelo points out one thing shipowners should consider when making this decision is that shipboard abatement technologies create another waste stream and the associated treatment and disposal issues for an owner to deal with. Another fly in the ointment, is that current IMO rules contain no testing requirements for fuel delivered to ships to prove that they comply with the standard. And, explains Angelo, unlike the gasoline you pump into your car that has been tested and certified by the government as being in compliance, no such safeguard is in place for ship-owners. As a result, they routinely receive fuel that does not measure up. All he is asking for, says Angelo, is for government (or their designees) involvement in the testing of fuel so that it meets the requirements of IMO protocols. As it stands now, the onus arguably rests with the owners, who have little control over quality beyond the quality statement delivered to the ship at the time the bunkering occurs. "That has to change," says Angelo.

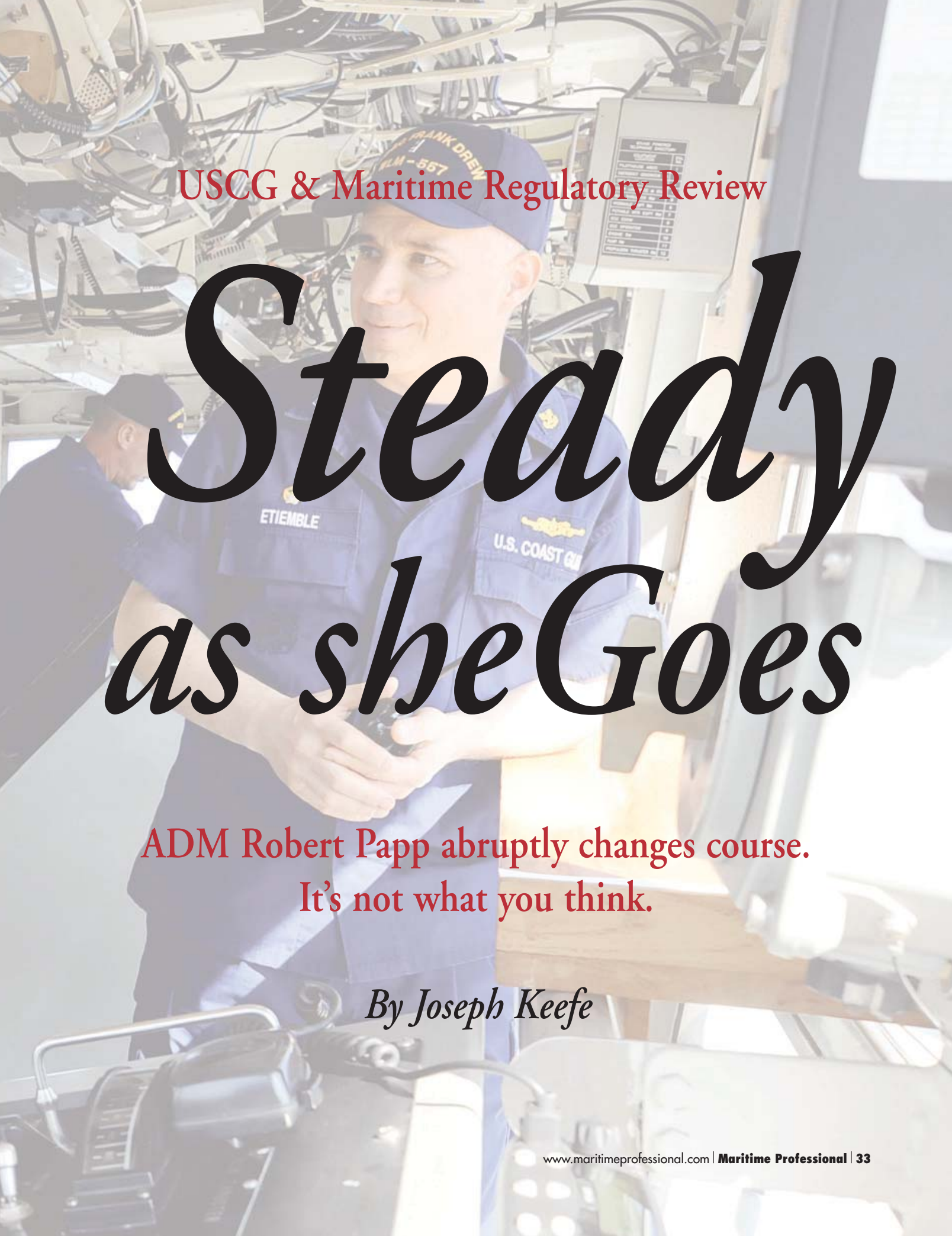
INTERNATIONAL STANDARDS FOR SHIPPING

Angelo describes the ideal approach to most issues facing tanker owners and shipping companies in general as, "International Standards for International Shipping."

Theirs is arguably no one better qualified to help INTERTANKO members make that philosophy a reality than Angelo, a 1971 graduate of the U.S. Merchant Marine Academy and eventually rose to Senior Executive Service (SES) with the U.S. Coast Guard. As the Coast Guard's first Director of Standards for Marine Safety, Security and Environmental Protection, he also served as a key negotiator and head of numerous delegations for the U.S. to major maritime safety and environmental protection committee meetings and conferences at the International Maritime Organization (IMO).

Joe Angelo needs no on-the-job-training as he moves the INTERTANKO agenda forward on the global stage. Fully accustomed to crafting agreements and compromises to a host of tough issues, his leadership comes at just the right time for INTERTANKO and, indeed, all global shipping stakeholders.


PAPP



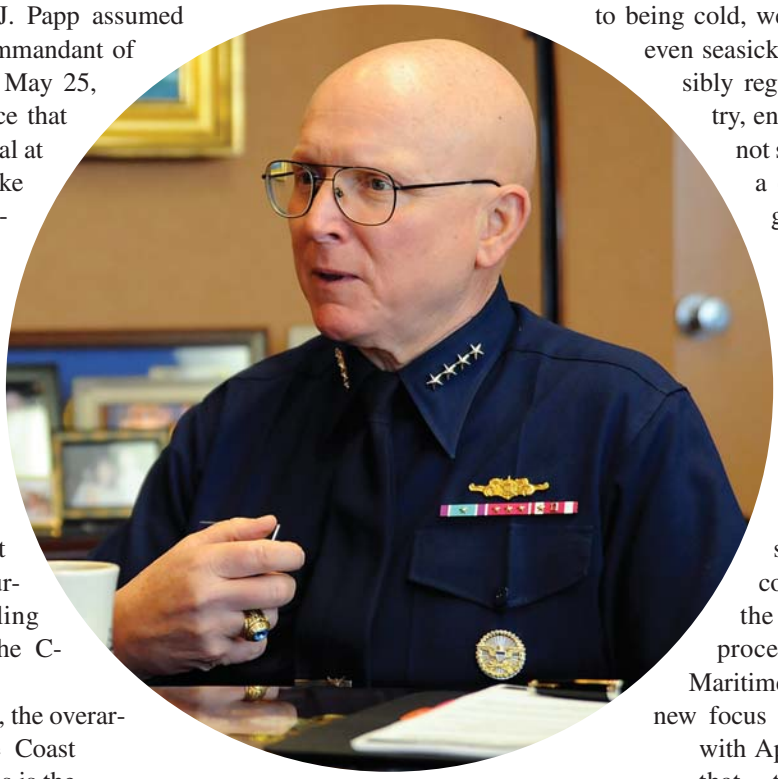
USCG & Maritime Regulatory Review

Steady as sheGoes

ADM Robert Papp abruptly changes course. It's not what you think.

By Joseph Keefe

When Admiral Robert J. Papp assumed the duties of the 24th Commandant of the U.S. Coast Guard on May 25, 2010, he also served notice that it won't be business as usual at headquarters. Papp, unlike his three immediate predecessors, apparently has no intention of setting the world on fire by instituting sweeping changes. Inside the Coast Guard, the proverbial round turn is probably good news. For maritime businesses that trudge along under the collective weight of mounting regulatory burdens, an arguably willing partner now resides in the C-suite.



From Papp's perspective, the overarching link for all of the Coast Guard's collective missions is the maritime aspect of their service. The Coast Guard's most experienced mariner is unapologetic about insisting that everyone under his command experience some aspect of seagoing life. It is here where he has some Coasties nervous and the commercial maritime world sitting up to take notice.

*"No one has yet made a logical argument to me that there is not value to spending time on the water. **If you have not been exposed to being cold, wet, tired and yes – maybe even seasick – then how can you possibly regulate the maritime industry,** enforce regulations, etc. I'm not saying it is necessary to be a cutterman, but if you are going to handle credentialing, maybe you ought to go out and ride a commercial ship."*

MARITIME REGULATORS: MARITIME FOCUS & *EXPERIENCE* REQUIRED

At Coast Guard headquarters in March, we asked the Commandant what he would tell other Coast Guard personnel who cannot, due to limited seagoing billets, follow in his footsteps. Papp responded, "There are plenty of other communities in our service that provide tremendous value. However, there is a maritime component to everything that we do. I've stopped calling us a seagoing service and now, I say we are a maritime service. But, I don't let people off the hook – if you are in a maritime service, then you ought to understand what 'maritime' is all about. No one has yet made a logical argument to me that there is not value to spending time on the water. If you have not been exposed to being cold, wet, tired and yes – maybe even seasick – then how can you possibly regulate the maritime industry, enforce regulations, etc. I'm not saying it is necessary to be a cutterman, but if you are going to handle credentialing, maybe you ought to go out and ride a commercial ship."

Papp's unambiguous respect for the seagoing trades and 200,000+ domestic, credentialed merchant mariners, the change in tone may also signal a renewed effort to continue improvements in the mariner credentialing process at the National Maritime Center (NMC). Papp's new focus probably had little to do with April's DHS announcement that the Merchant Marine Personnel Advisory Committee (MERPAC) will be re-established. As a matched pair, they form a happy accident.

THE YEAR OF THE FAMILY

ADM Papp says that the "Year of the Family" involves enhancing quality of life. And, he does not give the federal government high marks for support extended to Coast Guard families, especially in comparison to the other military branches. "We don't get the same consideration – we fall under Homeland Security. The Department of Defense can get Economy of Sale because they have large bases. For instance, I now live on what used to be the former Bolling Air Force Base. There are one thousand people there. You can build a Commissary, a PX and services that serve those people effectively. Conversely, our people are spread out geographically and don't get the same services. They spend three times as much for child care in Department of Defense as they spend on us, per capita. We got some increases in this year's budget and some billets to expand within the child development centers. Housing is still a concern. The DoD has

moved into something they call public-private ventures. DoD people are living in beautiful homes that make ours woefully inadequate. In comparison, I'm embarrassed for my people. We need to do better."

STEADYING THE SERVICE

Those looking for spectacular, new initiatives from the Coast Guard over the next 3+ years are going to be disappointed. Papp explains, "Since September 11th 2001, we have put this service through multiple stressers. We took on many new responsibilities and in the midst of that, two major things occurred. First, the reorganization efforts by my two predecessors. Reorganization for the right reasons, but they create stress because you've got people who already have day jobs who also have to work to accomplish these reorganizations. ADM Collins did it at the field, tactical mission delivery levels by combining our marine safety offices and our group offices into sectors – that upheaval still hasn't been completed. ADM Allen focused on the strategic level, reorganizing upper leadership structure. That required congressional action to authorize that we never got, so that project was never completed, either. It consumed a lot staff time and energy."

Papp cites deeper concerns. "We need to wrap up these things so that our people can start focusing on their core competencies. I am concerned that we've lost our edge in terms of professional skills. There are warning signals. We've lost 14 aviators in the last two years in accidents, recently lost a Petty Officer in a training accident and a couple of boat collisions have happened in the prosecution of cases. I'm concerned and I want to make sure that I'm doing all I can do to prepare our people for success."

Much of what ADM Papp espouses today is rooted in his formative experiences, rising up through the chain of command. As a mid-grade officer, he commanded a 45 year-old buoy tender, the Paw Paw. At the time, it was nearing obsolescence. "We were desperately in need of new buoy tenders, but struggling along because we could not convince Congress to build new ships. These were old assets that were tough to maintain and it took it out on our people because they had to not only do their work, but also do repairs to keep the ships running. That became deeply engrained in me that when I got to a leadership position, I needed to get the proper tools and resources out to our people. I'm living that today as we try to replace cutters and other assets," adds Papp.

DOING MORE WITH LESS (NOT ANYMORE)

Papp admits that the Coast Guard's FY-12 budget is fatter than most, but he also says that there is good reason for it. And, he promises, the way that the Coast Guard goes about fine tuning its mission set is about to change. It is here where he diverges (sharply) from his predecessors in terms of "doing the best they can with not enough." That's over, says Papp.

"This whole 'doing more with less thing' never set well with me. We've continued to do more and more over the years. But, some of these things – we've done to ourselves. We have a can-do attitude and when we see the need, we try to fill that void. At some point, you have to say, 'Are all of these activities warranted and are there other departments in the federal government that could be doing some of this? Are we trying to do too much?' And that's what we are in the process of looking at right now." He points to U.S. Coast Guard deployable Special Forces as a prime example where the mission set has ramped up over the course of the last ten years.

Papp admits that he has no authority to cut any Coast Guard missions. He does promise that his forces can only do so much, and what they can do, he wants to do well. "Take our aviators. We have task saturated them. It used to be that all they did was Search and Rescue and that was challenging enough. We devoted 40 percent of our flight hours to training; since 9/11 we've added airborne use of force, rotary wing air intercept and vertical insertion. Now, we are up to a point where 60 percent of our flight time is training hours. If the country wants us to do these things, it's my responsibility to go to Congress and say, 'we don't have the resources to do that.' Give me the resources, and I'll do the job. Or, give it to some other agency."

PRIORITIES VERSUS RESOURCES

It wasn't too long ago that NTSB took over certain investigation responsibilities from the Coast Guard. That came with a political battle that involved fears that a lost mission might mean loss of prestige. But, some Coast Guard mission sets have always been in question. The maritime industry's 200,000+ domestic mariners, for example, have long complained about the ability of the Coast Guard to properly administer its mariner credentialing function. Given the realities of the budget battles and continued "mission creep," no options are off the table.

Papp insists, "I'll admit to a bias right up front that the Coast Guard can do anything it sets its collective mind to, better anyone else. Having said that, do we always have the resources to do that? No. On the other hand, I believe that there is a need for the country to do advanced interdictions out at sea. I categorize this as 'short notice maritime response and advanced interdiction.' We started to try and build the resources to do with before even coming up with a concept of how we do it."

He continues, "We need to decide if we're capable of doing this on our own. If we're not, then we need to put forth a

resource proposal through my Secretary, the President and the Congress." He adds, "I'm constantly looking to other places in the government who can accomplish certain missions, because all of us are faced with constrained budgets as we go forward. None of us are going to be able to take on new activities and missions without being circumspect about what that will cost the country."

BUDGET

The current budget situation is simple enough. Papp explains, "The Coast Guard's FY 2012 budget leverages savings generated through management efficiencies and offsets, and allocates funding toward higher order needs to support front-line operations."

From Papp's perspective, things could be a lot worse. "We've seen tremendous growth, from somewhere between 3 and 4 billion dollars in the budget before 9/11; we're up over 10 billion right now. The President's FY-12 budget that I just went up to the Hill to defend asks for a modest increase for the Coast Guard, where most other departments are being cut. The challenge is that it doesn't necessarily keep up with the increased costs that we are incurring. The big gorilla in the room is keeping old ships running. Every maritime professional understands how much old ships cost to run. The National Security Cutter costs nearly three-quarters of a billion dollars to build and you are only getting 1.5 billion every year in acquisition funds. I'd like to be building two per year, but, I can't."

I am concerned that we've lost our edge in terms of professional skills. There are warning signals. We've lost 14 aviators in the last two years in accidents, recently lost a Petty Officer in a training accident and a couple of boat collisions have happened in the prosecution of cases. I'm concerned and I want to make sure that I'm doing all I can do to prepare our people for success.

DEEPWATER: COAST GUARD, NOT BP

Deepwater, for most people, refers to the Gulf oil spill. For the Coast Guard, it also refers to a different (but equally difficult) period where the multi-billion dollar recapitalization program was executed in a less than ideal fashion. According to Papp, the Coast Guard has since grown up to address these needs; developing career paths and synergy between the U.S. Navy's NAVSEA group and beefing up its acquisition billets. Still, the nation's fifth, uniformed and military service was widely criticized for its arguably inept stewardship of billions of the taxpayers' dollars.

ADM Papp sees the issue a little differently. "First of all – I'll defend the Coast Guard. We came upon a perfect storm in the late 1990's. Our ships were old, they needed replacement. The only way we could gain traction was to bring them all together in a system of systems approach because people weren't listening to us prior to 9/11 and if 9/11 hadn't happened, we'd probably still be struggling to get things done. We also were facing something called "streamlining" in the mid-1990's – we lost about 4,000 people. And so, if you are going to continue to try and accomplish traditional Coast Guard missions, you have to make cuts in administrative overhead, acquisition staff, personnel, etc. Acquisition forces were cut back to the bone – rightly so, because we were only getting about $3 million per year in acquisition money. 9/11 occurred and all of a sudden, we got $800 million in acquisition funds. Now, we're building ships and everything else, in a stern chase trying to build acquisition staff. We relied upon a lead system integrator to help us and it did not go well.

Papp fleshed out the solutions. "The current Chief of Staff, John Courier, was previously head of acquisitions. He came up with this blueprint for acquisition reform where we drew people from DoD and hired people away from NAVSEA and other places. We're better for it. And, we work and-in-hand with NAVSEA now, building ships side-by-side at Northrop

Grumman, comparing costs, workloads and everything else so we can get the best deal for the government.

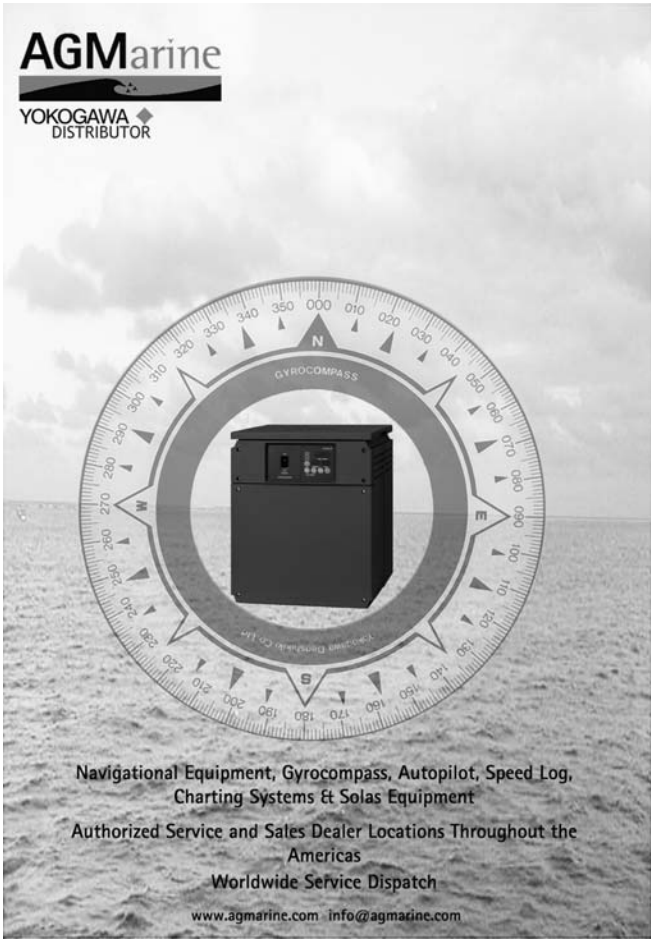
Papp's rosy view isn't shared by everyone. A recent Subcommittee on Coast Guard and Maritime Transportation hearing, chaired by U.S. Rep. Frank LoBiondo (R-NJ), conducted to examine the status of the Coast Guard's major acquisition programs was not nearly as complimentary. According to the Government Accountability Office (GAO), the Coast Guard's management of its acquisition portfolio continues to be less than stellar.

LoBiondo pointed to the National Security Cutters as a prime example. He said, "Both vessels represent tremendous improvements over the 45 year old vessels they are replacing. However, the program is currently two years behind schedule and 38 percent over the revised 2007 budget. In addition, both vessels will require substantial retrofits to meet expected service lives."

LoBiondo also conceded, "The Coast Guard has made great strides to turn the program around in recent years and I commend them for that. But now it is time to deliver results for the taxpayer and for the men and women of the Coast Guard who desperately need these assets to successfully conduct their missions."

THE ARCTIC: NEW COMMANDANT, NEW OUTLOOK

Probably nothing has been more painful than watching the Coast Guard struggle without the resources to ramp up its ice-breaker fleet. That situation might be about to change; for reasons you might expect and couple you might not. First, the President's budget this year brings back money into the Coast Guard's budget that was transferred seven years ago to the National Science Foundation. That will enable Papp to keep one heavy breaker in service, as well as the HEALY, which is a medium breaker. Papp continues, "I have to decommission one of the breakers. We'll decommission POLAR SEA and take those repair moneys and invest those in POLAR STAR. Ten more years out of POLAR STAR gives us time to work on an overall solution." Papp also sheds light on emerging



"If the country wants us to do these things, it's my responsibility to go to Congress and say, 'we don't have the resources to do that.' Give me the resources, and I'll do the job. Or, give it to some other agency."

policy for the Coast Guard in the Arctic. Recognizing the needed cutters and infrastructure, he asks, "What hope do we have of properly addressing our responsibilities in the region without the necessary equipment? For the Coast Guard, it is a zero sum game – I can't take on those responsibilities unless I have the resources to do it." After asking the hard question, he provides his own answer. "We've concentrated the last few years on icebreakers, but some estimates have the cost to build a new one at $1 billion. What we haven't done is the hard work of going up there and saying, 'What are the nation's needs in the Arctic?' Icebreakers may be part of that solution, but there's water where there used to be ice. We have responsibilities – cruise ships, merchant ships, adventurers – they are all there. That means search and rescue. How do you conduct that? The first step is a seasonal sir station. So, we have to come up with a concept of how to carry out our responsibilities – both sovereignty and response. Over the last three summers, we've deployed equipment to see what works and what doesn't."

CAN THE COAST GUARD GET BACK ITS MOJO?

Addressing industry fears that internal Coast Guard expertise is eroding due to outsourcing and that the Coast Guard might not be up to handling marine credentialing, Papp outlined a plan to reverse a worrying trend. "One of the major goals of the multi-year marine safety enhancement plan is to improve the Coast Guard's Marine Safety Capacity and Performance. Included are several initiatives, including expansion of opportunities for maritime industry training; establishment of National Centers of Expertise and 18 Feeder Ports (allowing for streamlined training in marine inspection competencies)." Beyond this, he added, "$10.7 million has been requested for FY2012 to provide us with 99 new marine safety positions." Coast Guard Academy Cadets are currently provided with a path to obtain a domestic officer endorsement, which requires at least one year of service and obtaining the appropriate shipboard qualifications. Holding a credential is not the only requirement; it is more important that such officers have an open view of the requirements so that they are able to understand the needs of industry. Additionally, officers and civilians are being obtained directly from maritime academies and integrating them into the proper programs.

COMMERCIAL SHIPPING & TANKERS:

From ADM Papp's perspective, commercial shippers and tanker operators alike are doing some good things, with notable exceptions. For example, he extols the virtues of the collaborative efforts of the salvage industry, plan preparers, and well as industry associations working with the Coast Guard, that produced the initial implementation phases (plan submittal) of recently implemented Salvage & Marine Firefighting Regulations. Papp reports, "It went smoothly, with only a handful of vessel operations nationwide being interrupted to comply with this new requirement."

Papp also mentions the Towing Vessel Bridging Program. "TVBP enabled me to utilize one of my Guiding Principles – 'Strengthening our Partnerships' – by leveraging our oldest industry partnership, the American Waterways Operators, to collectively improve towing vessel safety and environmental protection in the towing and barge industry." That's not to say that there are not areas for improvement. Scolding the collective U.S. flag fleet, Papp laments, "The US flag has had four cumulative detentions in Paris MOU member nations over the past three years, all but one stemming from the condition of the vessel.

Having a poor port state control record for the US flag hurts all US vessel owners that trade internationally by inciting port delays resulting from increased foreign Port State Control inspections." Staying with the theme of Port State Control, Papp also said, "We continue to discover cases of direct discharge of oily substances into the marine environment that were a result of the circumventing of oily water prevention equipment. The United States will not accept this practice and will pursue these matters through our legal system. The industry as a whole, with the Coast Guard and other regulatory bodies, must do better in order to preserve our fragile marine environment."

ONE THING:

If Papp could accomplish just one thing as Commandant, it would be to make sure that all eight of the National Security cutters are built. Beyond that, he wants to have the replacement for the medium endurance cutters – the offshore patrol cutter – selected and in the pipeline. He explains, "Half of the current ships are forty years old and the other half will rapidly be approaching obsolescence by the time we get the new ships built. Some people accuse me of focusing on ships because I'm a boat driver, but ADM Allen wasn't a boat driver and he focused on it too. We have to get these things behind us so we can focus on other things. It takes a huge chunk out of our budget." ***— MarPro***


PAPP
U.S. COAST GUARD

Quality & Quantity

Data Delivered

The obscure, but arguably most important variable in energy transportation has at long last been standardized. Driven by client demand, Navarik's web-based software brings petroleum inspection into the 21st century.

by Joseph Keefe

It wasn't too long ago that the typical liquid cargo inspection consisted of a couple of bleary-eyed inspectors calculating cargo volumes on ten-key calculators at 0230 hours in the grimy control room of your oil tank vessel. Those numbers, along with a report of laboratory analysis of cargo samples would (eventually) make it to your desk in any number of ways, depending on who was preparing the report and where that was happening. Analyzing that data to determine trading exposure, cargo losses and ultimate profitability for that particular deal was anything but standardized. Thanks to Navarik's web-based petroleum inspection software, that is no longer the case.

Today, the Navarik reporting system enables better loss control and streamlines maritime inspection operations to expedite the delivery and analysis of cargo quantity and quality information. According to Navarik, the data of as much as 40 percent of U.S. seaborne crude oil imports is accounted for using this unique system. Founded in 2000, the privately owned firm has just 22 employees, but boasts global reach. The Inspection software is just one of three applications offered by Navarik, housed with Navarik Claims Management and the Navarik Vetting module, facilitated by the "Common Data Storage" of the Navarik master platform. For commodities traders and staff, the platform repre-

sents a powerful management tool.

A BETTER WAY

Navarik Inspection™ is well on its way to becoming the industry standard for cargo inspection management within the petroleum industry. The software automates, standardizes and provides business intelligence necessary for companies to more effectively identify oil loss claims, reduce off-spec cargoes, speed deal settlement and drive better inspection firm performance. That the software's inception was driven by experienced ship agents, who felt that the agency side of the business could be better organized, was no accident.

Navarik originally focused on operational and documentation issues but eventually grew into the inspection side of the business. Nathan Dobie, Navarik Product Manager told MarPro, "We still support legacy systems for agency and information collections, but we decided that those were customized solutions. We then developed what we call the Navarik platform and data systems. On top of that platform, we have our flagship application 'Navarik Inspection', a system called 'Navarik Claims,' which focuses on claims management. We also have a vetting application. The vetting system supports shipping assurance teams when clearing vessels for specific voyages."

In the beginning, large scale trending of petroleum inspection data was difficult because the four major inspection companies and the 'Mom-and-Pop' outfits all had their own way of reporting the numbers. The original demand for the software came from oil major Shell. Dobie adds, "We knew that there was demand for the collection, organization and standardization of operational data, particularly for global organizations. Shell knew that they had to standardize business processes, especially around compliance issues related to inspections. These included health and safety compliance, or missing inspections because the nomination got hung up in someone's E-mail folder. They knew that there had to be better way."

As the software's standardized format became more widespread, customers began to insist that third party inspection personnel input data, invoices and key data associated with a particular custody transfer. Taking a lead role, Navarik made a substantial investment in traveling worldwide to train people in the system. Dobie insists, "A lot of peo-

ple didn't think it could be done. And, I think that's where we got the jump. We've got inspectors all over the world using our application over the WEB."

At least one inspection company, Camin Cargo Control, already had their own in-house system. Navarik, in an effort to avoid time consuming duplicate data entry, extended the "Navarik Certified Inspection Partner Program." Today, Camin uses their in-house tool to submit results directly into the Navarik Inspection System. Dobie says, "Camin was the frontrunner, a little more agile and using a standardized in-house system. They were the first inspectors to use the electronic web services. The driver is our customers wanting the inspection companies to come to the table. The other option is to input the data into our system manually, which is what everyone else is doing – except Camin."

WHAT IT DOES

Navarik offers the WEB service free-of-charge to inspectors as a benefit to customers. With oil majors – BP, Chevron and Shell – among that group, a substantial volume of the world's petroleum inspection data now simply has to go through the Navarik system. Where no real standards previously existed for the exchange of structured inspection data, Navarik standardized these entries – in accordance with American Petroleum Institute (API) and Energy Institute (EI) guidelines – online.

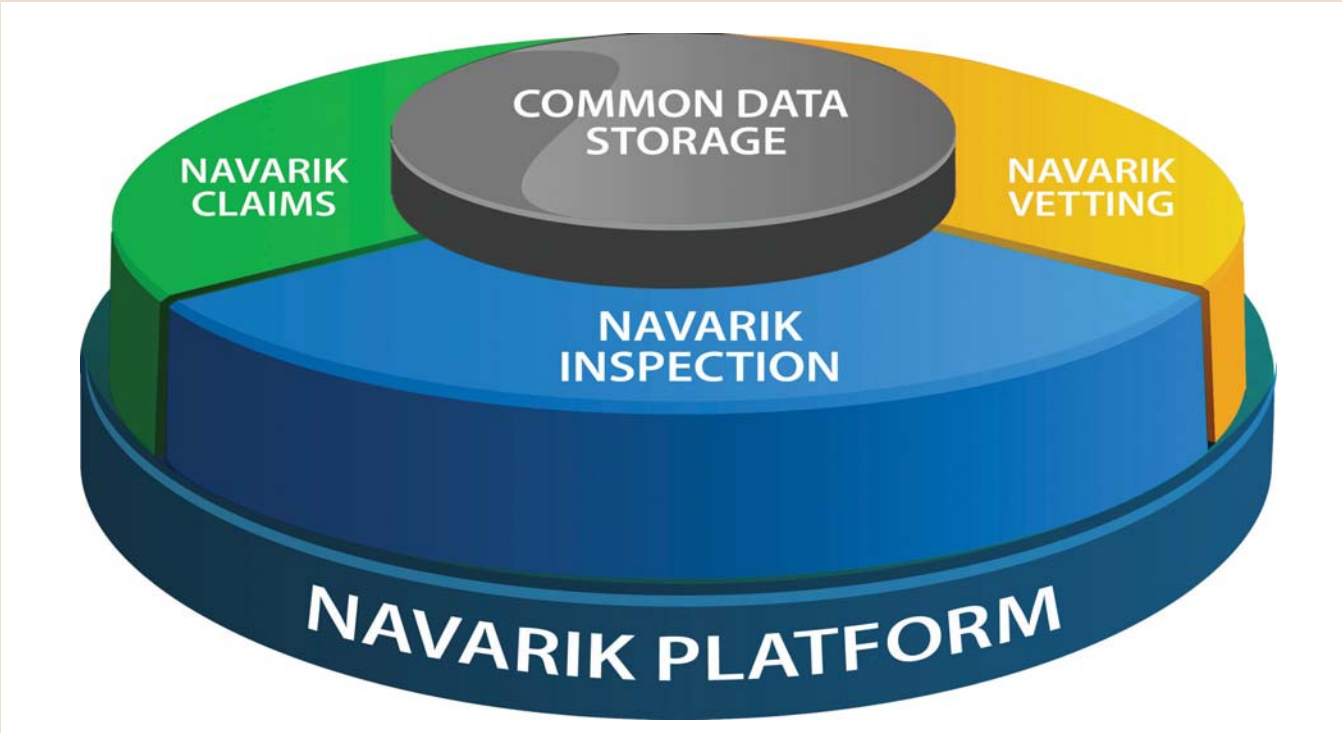
Dobie admits, "That's not a new concept – but the wide dissemination of it, perhaps, is. We make that standard available to the inspection companies and other industry particpants through our membership in LEAP (Leadership for Energy Automated Processing)."

Beyond cargo quality and quantity, Navarik has also pioneered – at the insistence of their customers – the management of Green House Gas (GHG) emissions data. Starting out as a voluntary reporting scheme, the EPA wanted to track what was out there, whether it came from a refinery, flare stack or waterborne cargo. Dobie reports, "The official numbers on an inspection report couched inside the Navarik System platform are well suited to track some aspects of that.

This might include parties of record, and/or the quantity of grade being handled. At any point in time, you can extract and apply emission factors against that data." Clients who choose to do so can now take this enterprise-wide, for their own reporting system. He adds, "Navarik can be a big part – the marine piece, if you will – of how a particular firm might reduce or control their environmental footprint."

THE SOFTWARE – WHAT DOES IT DO?

The software provides trending compilations – VEF, port and terminal data, to name just a few – to help traders make better decisions. These trends that can be tracked over time to give a better understanding of what the front-end risks entail. In other words, better information before the custody transfer starts translates into smarter trading and increased profitability. And, Navarik's utility extends well beyond the world's



"A lot of people didn't think it could be done. And, I think that's where we got the jump. We've got inspectors all over the world using our application over the WEB." – Navarik's Nathan Dobie

oil majors and traders.

For oil producing countries, Navarik Inspection also generates a detailed account of total volume of petroleum exports. In this case, the data supports tax requirements and reporting, but it provides the client state with more than one stream of data from which to reconcile data. Nathan Dobie insists, "It's more important than it sounds, actually." Always expanding, Table A (below) outlines just some of the advantages offered by the system.

NAVARIK, ENERGY TRADING & ETRM SOLUTIONS

Although Navarik decided to focus directly on the physical operations niche, the need for a central repository of petroleum data for ETRM providers was obvious. Dobie explains, "ETRM people look to us as being as the data repository or bridge to third parties for collecting that information. All of this contributes to the big picture and ultimately provides a better understanding of profitability." Last year, Triple Point Technology®, a provider of multi-market commodity and enterprise risk management software solutions, announced a strategic partnership with Navarik™. The move allowed Triple Point to broaden its logistics functionality to manage cargo inspections and operational activities associated with cargo quality management and ship-to-shore transfer. The partnership also introduced Navarik to another subset of potential clients, widening its footprint across the broad spectrum of energy trading and transportation.

Noting the agreement, Patrick Rooney, Navarik's President and CEO, said, "Navarik was the first software company to recognize the critical need for cargo inspection management in the petroleum industry, and the benefits were easy to calculate. If a single cargo of crude oil is understated by just one percent during a shore-to-ship transfer, several hundred thousand dollars can be lost. We are pleased to partner with Triple Point to bring our unmatched technology and expertise in cargo inspection for crude and petroleum products to Triple Point's broad portfolio of customers across geographies, industries, and commodities."

SUPPLY CHAIN SECURITY

Navarik boasts one of the most robust data centers in North America. Dobie adds, Navarik boasts using one of the most robust data centers in North America. Dobie adds, "We are proud of the infrastructure we've set into place – a military / banking grade data center. This is enterprise class software for network infrastructure and data security." Within Navarik, data remains proprietary and segregated. Only the customer itself releases access for user interface – through their own system administrator.

WHAT'S NEXT – WHAT'S POSSIBLE?

Although clients have expressed interest in data sharing, there are rightful fears concerning this practice; among them, anti-trust issues. Navarik, however, spurred by industry demand, is working on a process where Vessel Experience Factor (VEF) data – load and discharge – can be aggregated. Standardizing this information and making it more widely available, in the best possible format and with maximum accuracy, is the ultimate goal. The effort represents a "leap forward" – not necessarily a software, but an adjunct service. And the VEF is just one of a number of areas where sharing data in a secure fashion might someday provide more value.

As Navarik way gathers steam in its quest to become the industry standard

TABLE A

Features	Benefits
Loss Analysis / automated voyage reconciliation	Increase claimable cargo loss recovery
Automated notification of off-spec cargo	Respond immediately to mitigate risks
Standard reports from central repository	Better Trading Decisions based on historical data
Electronic invoicing / approvals / batching	Eliminates over / double-billing from inspectors
WEB services integrate 3rd party systems	Timely data delivery / eliminate manual data entry
Time stamped entries for all major users	Clear audit trail for operations
Port logs collected directly from source	Accurate / timely logs reduce demurrage

Source: Navarik Inspections

for physical barrel accounting and reporting, the software is also seeing interest from banks and trading houses who for the first time might be venturing beyond paper trades into wet barrel transactions. Some customers already use Navarik to move sulfur and petcoke. And, while there are differences in how a dry commodity is handled, the overarching principal of how to organize and report that data does not.

According to Dobie, client interface remains a keystone of Navarik's focus. "We want industry to drive the product – not us. We respond to customer requirements, going out into the field, staying in tune with industry and using that knowledge to improve the software." Dobie continues, "That said, and although our relationships with companies like Triple Point require us to accommodate the dry sectors, our focus does remain on the petroleum side of things." Cargo inspectors are still crunching numbers on grimy tankers at 0230 AM. Today, they upload numbers directly from their laptops in the field. What happens next at Navarik is anyone's guess. For sure, future enhancements will be customer driven, standardized and streamlined business solutions for energy transportation professionals. For petroleum commodity players, this translates into a job well done. At Navarik, they call it "data delivered." ***— MarPro***

The "ABC's" of FFA's

Hedging risk, managing physical freight commitments: With Veson's IMOS Trading Module it's not as hard as it sounds. — by Joseph Keefe

Look it up: FFA is an acronym for Future Farmers of America. As it relates to your bottom line on the water, however, it means so much more. And, because no one can today know tomorrow's headlines, Forward Freight Agreements (FFA's) are fast becoming the vehicle of choice for some charterers to hedge risk and for still others to move from a traditionally defensive position into speculation on today's wildly fluctuating freight markets. That said, the ABCs of FFAs are still a bit hazy for those still watching from the cheap seats. According to John Veson, President of Veson Nautical, It doesn't have to be that way.

SOLID PLATFORM: TRUSTED PARTNER

Veson Nautical provides commercial maritime-oriented management and trading software solutions. The company, based on best practices developed over its 30-year history, is arguably one of the shipping industry's more mature technology providers. Veson's core offerings include IMOS (Integrated Maritime Operations System), which consists of nine core modules: Chartering, Operations, Financials, Planning, Trading, Demurrage, Pooling, Data Center, and Data Services, which can be integrated to build complete solutions for commercial maritime organizations including dry bulk, tanker, LNG, chemical, container, and barge companies.

Increasingly, and because the current environment of increased risk hedging, data complexity and market volatility, shipping companies are turning to Veson's centralized commercial management platform.

The Veson Trading module allows users to manage physical freight commitments, Forward Freight Agreements (FFAs), and options in one integrated system. FFAs can provide flexibility in terms of contract routes and pricing structure. But, what does all of that mean?

MANAGING FREIGHT POSITIONS IN A UNIFIED SYSTEM

Managing and tracking paper trades is still a relatively new skill. With companies in the maritime industry still developing the know-how to monitor, and account for their trades and positions, the need for a blueprint for essential FFA technology that allows for increased management control and profitability is at the heart of the Veson Trading module. That cannot be done in a vacuum. More than four years ago, Veson set out to develop that solution, conducting an FFA Summit in Boston, MA.

FFA trading involves using the proper technology to maximize performance of

"People can tell you what their market view is. Very few of them can actually quantify that market view. With IMOS, you can do that."

+

Evangelos Efstathiou

Director, Trading & Risk Management

TABLE A

Veson Requirements Checklist

- Manage wet and dry FFAs as well as options
- Automatically download market information from Baltic Exchange, Imarex and other sources
- Generate interactive exposure report of overall cargo, TC and Freight derivatives position
- Consolidate long/short position with mark-to-market capabilities
- Track credit levels and monitor exposure to Counterparties
- Deliver batched positions: one unified view of P&L on several trades simultaneously
- Automate the processing of invoices and integrate with corporate accounting
- Security, audit and alert tools

trading departments while mitigating risk. IMOS compiles a unified view of the company's physical and paper freight positions. Evangelos Efstathiou, Director, Trading & Risk Management at Veson Nautical, explains, "In IMOS, every deal is a contract. You define the contract, duration, the counterparty, the face value of the deal you've entered into. Maybe you've got three months of exposure where you've agreed to a particular rate. You can even drill down and see the P&L calculation: how much are we in or out of the money? That ability to roll it all up by strategy or line of business is a pretty powerful tool."

THE ULTIMATE MISTAKE: USING YESTERDAY'S TECH TO TRADE FFAS TODAY

Listening to industry, Veson discovered that organizations were looking to move away from a defensive risk posture and into a position of active control of their FFA portfolio. FFAs are one of the fastest growing areas within commercial shipping industry for many reason reasons. Spot traders, for example, often find themselves in need of liquid instruments offering protection against uncertainty and volatility. FFAs can also assist to mitigate counterparty risk exposure.

Absent a robust system to facilitate FFA operations, however, many outfits still rely on spreadsheets that do not link to accounting or front-office functions. Still others spend inordinate amounts of time creating and manually updating standalone spreadsheets with market data. That's a mistake, insists Veson's Efstathiou.

In fact, FFA operations as practiced today can be time consuming and inefficient. "People need to be able to quantify their exposure. Companies have risk in their commercial contracts, time and voyage charters. We often see companies managing these things in spreadsheets which are prone to manual error and not updated on a timely, automatic basis. So, if I'm in late tomorrow morning because my daughter is sick, then the boss doesn't have the latest Baltic data. What this creates is a lack of transparency around our exposure and access to real time information. The value of having data in real time is tremendous."

MEASURABLE METRICS

The challenge of compiling a unified view of the company's physical and paper freight positions cannot be underestimated. Without this consolidated view, the company actually strips itself from most benefits that FFAs offer. Left with isolated islands of data, the end result is a failure to neither assess margins on volatile freight rates nor utilize

FFAs as a profit center.

Not surprisingly, many companies have outgrown the spreadsheet method and have turned to a much more sophisticated, automated system. To that end, a system that provides a window to its entire portfolio in real time, provides access to analytical tools to make business decisions and reliably evaluates the company's risk exposure and profit and loss expectations would include many variables, as shown in Table A (previous page, lower left).

FFA'S TODAY

First and foremost, skillful traders are key to maximizing FFA profitability. Efstathiou maintains that "there are many ways to enter the market, but you'll never go wrong starting with shipping experience and then layering on the FFA experience." That said, any technology solution should not burden the trader – who may be still learning the game – with more keystrokes than necessary. Above all, tools must continue to evolve along with the burgeoning, but still evolving FFA markets.

Veson touts the ability of its new technology trading module to do what they characterize as "sensitivity" analysis. Efstathiou explains, "If I enter into a new contract, whether it's physical or paper, I can also perform "what if" analysis to see the effect that contract will have on my P&L and on my position, before I've even executed it. So, you have the ability now to define what we call 'opportunity cargoes' or 'opportunity FFAs.' A client who does a tremendous amount of spread trading but also has physical positions would like to know, every now and then, is there a naked trade I could do that would tremendously reduce my exposure at very little cost?"

With the IMOS Trading module, the aggregation of all trades – by type, date, route and period – can be had at the touch of a keystroke. "It's easy to add one trade to your position mix and see what it does, but what would ten more trades do your bottom line? We provide the ability to aggregate and group the cargoes and the positions. There are up to three levels of grouping in our system, filtering, and special reports for comparing movements in the P&L between two days, between two market prices," adds Efstathiou.

Efstathiou saves the best for last: "Our system gives you the ability to define your own internal market view. Let's say management believes that the capesize market is going to pick up and go to $50,000 per day for the rest of the year. You can put that in the system and do a mark-to-market exposure against that view and then you can compare that against a worst or best case scenario. People can tell you what their market view is. Very few of them can actually quantify that market view. With IMOS, you can do that."

Veson Trading Module

Portfolio Report — *Market: Baltic*

Date: 9/3/2010

SEP 2010

Vessel Type	Contract	Contract Info	Days	Tons	Net Exposure	Realized	Net
	CCOA		-360.00	-123,529	-4,799,160	0	-4,799,160
		2 (CHARTER2)	-360.00	-123,529	-4,799,160	0	-4,799,160
	CCOA Option		-60.00	-20,588	-799,860	0	-799,860
		2 (CHARTER2)	-60.00	-20,588	-799,860	0	-799,860
	Cargo		-30.00	-25,000	225,070	0	225,070
		12 (CHARTERER1)	-30.00	-25,000	225,070	0	225,070
	Sub Total		-450.00	-169,118	-5,373,950	0	-5,373,950
AFRAMAX	CCOA		0.00	0	0	0	0
		3 (CHARTERER1)	0.00	0	0	0	0
AFRAMAX	Sub Total		0.00	0	0	0	0
BULK CARRIER	CCOA		-30.00	-31,429	71,499	0	71,499
		5 (MITSUI)	-30.00	-31,429	71,499	0	71,499
BULK CARRIER	TCI		30.00	160,000	143,023	0	143,023
		VES1-I0002 (OWNER1) VESSEL1	30.00	160,000	143,023	0	143,023
BULK CARRIER	TCO		-30.00	-160,000	-293,023	0	-293,023
		VES1-O0001 (CHARTERER1) VESSEL1	-30.00	-160,000	-293,023	0	-293,023
BULK CARRIER	Sub Total		-30.00	-31,429	-78,501	0	-78,501
CAPESIZE	FFA		60.00	0	150,000	0	150,000
		4TC_C	60.00	0	150,000	0	150,000
CAPESIZE	Sub Total		60.00	0	150,000	0	150,000
PANAMAX	CCOA		-360.00	-108,333	-2,802,493	0	-2,802,493
		1 (CHARTERER1)	-360.00	-108,333	-2,802,493	0	-2,802,493
PANAMAX	CCOA Option		-90.00	-25,000	-699,790	0	-699,790
		1 (CHARTERER1)	-90.00	-25,000	-699,790	0	-699,790
PANAMAX	Cargo		-30.00	-12,500	-399,930	0	-399,930
		18 (CHARTERER1)	-30.00	-12,500	-399,930	0	-399,930
PANAMAX	FFA		-87.50	0	-43,953	0	-43,953
		4TC_P	-87.50	0	-43,953	0	-43,953
PANAMAX	VCOA		210.00	280,000	2,799,510	0	2,799,510
		VCOA1 (OWNER2)	210.00	280,000	2,799,510	0	2,799,510
PANAMAX	Sub Total		-357.50	134,167	-1,146,656	0	-1,146,656
Total			**-777.50**	**-66,380**	**-6,449,107**	**0**	**-6,449,107**

OCT 2010

Vessel Type	Contract	Contract Info	Days	Tons	Net Exposure	Realized	Net
	CCOA Option		-90.00	-30,882	-1,206,540	0	-1,206,540
		2 (CHARTER2)	-90.00	-30,882	-1,206,540	0	-1,206,540
	Sub Total		-90.00	-30,882	-1,206,540	0	-1,206,540
AFRAMAX	CCOA		0.00	0	0	0	0
		3 (CHARTERER1)	0.00	0	0	0	0
AFRAMAX	Sub Total		0.00	0	0	0	0
BULK CARRIER	CCOA		-30.00	-31,429	69,249	0	69,249
		5 (MITSUI)	-30.00	-31,429	69,249	0	69,249
BULK CARRIER	TCI		31.00	165,333	147,791	0	147,791
		VES1-I0002 (OWNER1) VESSEL1	31.00	165,333	147,791	0	147,791
BULK CARRIER	TCO		-31.00	-165,333	-302,791	0	-302,791
		VES1-O0001 (CHARTERER1) VESSEL1	-31.00	-165,333	-302,791	0	-302,791

"Enterprise-wide, you can combine some or all of the dashboards so operations and chartering and finance can see the big picture; contracts, bunkers, everything. When this data is isolated – we call them islands – that's where the problem is."

Jamie Sheldon
IMOS Product Director

AS NARROW AS YOU WANT – AS WIDE AS YOUR ENTERPRISE

Beyond obvious market advantages, IMOS Trading (which can be purchased as an add-on module of IMOS) greatly enhances the end user's functionality. Jamie Sheldon, IMOS Product Director adds, "Enterprise-wide, you can combine some or all of the dashboards so operations and chartering and finance can see the big picture; contracts, bunkers, everything. When this data is isolated – we call them islands – that's where the problem is. It happens frequently in manufacturing companies. These are the same problems – different domain."

Sheldon goes on to explain how IMOS seamlessly integrates with other software, including financial packages such as Oracle and SAP. "We integrate with all of these systems, and more. It depends on how the client wants to manage their accounting and voyage P&L. We need to understand their financial model and then configure interfaces that facilitate their work processes. For example, invoices can be raised in IMOS and the synchronized with the appropriate system used by the client. We plug into financial systems on the backend, as well as into trading systems. The IMOS trading system is server-based and operates behind the firewall."

In March, Oslo-based Stenersen Chartering AS joined the fold of Veson clients and purchased IMOS6. The software will manage chartering, operations, and voyage accounting related functions for a fleet of 17 product tankers. "We selected Veson Nautical over the competition because IMOS most effectively fulfilled our requirements for a configurable, flexible commercial marine system. Further, IMOS6 is designed to connect seamlessly with our existing software systems, which will dramatically improve our organization's ability to work effectively across departments," remarked Lars Rinde, Managing Director for Stenersen Chartering.

A GOOD OFFENSE: THE BEST DEFENSE?

Evangelos Efstathiou says simply, "Some use our system to mitigate risk; others to identify new trading opportunities. There are always companies with a strong degree of sophistication, but many hadn't thought about trading and risk management as something that a shipping company ought to do." He cites the example of one client who traded just one FFA and later had to pay out $1 million to cover the deal. He continues, "The key thing for these companies to understand is that it is perfectly fine NOT to trade in FFA's, and in not doing so, you are choosing a market view. You have to understand the risks you're choosing to take."

WHAT'S NEXT?

At Veson, the journey continues. More than 30 years after rolling out their first piece of maritime software, they continue to look towards the next step. Evangelos Efstathiou elaborates, "We've talked about interfacing our trade data with the exchanges, but that's the next step. Right now, we are focusing on P&L management, trading and risk management, and the next dimension is really a trading platform."

Another item on the agenda is helping companies better manage exposure to counterparty risk. IMOS allows the user to track who the counter parties are, how much exposure you have to each in dollars, days and tons and contract type. Efstathiou adds, "One of the things we hope to roll out this year – and we've just designed it – is a counterparty risk rating. You'll be able to run a risk report: How do we rate our counterparties, how did we rate them a year ago, have any been notched down since?"

FFAs, unlike the old bubble gum rock-and-roll song, might not be as simple as "do-re-mi, ABC and 123." At least, not yet. If anyone can get you there, it is probably Veson. And, you can bet on that.

— MarPro

Maritime Professional

The Essential Quarterly Magazine

Ad Closing:
August 1, 2011

• Q3 Edition
Security and Training

The American Employment Perspective:
Shortsea shipping, wind power and the future of the bluewater Jones Act fleet.

Shipboard eLearning:
Can it work and if so, is it affordable?

Port Security:
Infrastructure & economics.

TWIC:
Are we any closer to using these credentials?
Do they provide any security?

STCW After 50:
Cutting edge training that (actually) produces better mariners.

Piracy:
The good, the bad and the ugly- what will work; what won't and why.

Ship Management:
Taking back the ship from the office.

Mariner Retention:
Still important even in a down shipping market.

Security Training:
Beyond ISPS

Services & Product:
Security Services, Training

Special Directory: Maritime & Professional Training
Compiling the leading companies and institutions taking charge of keeping personnel up-to-date on necessary skills, licences, and certifications.

Bonus Distribution:

OFFSHORE TECHNOLOGY CONFERENCE BRASIL

October 4-6, 2011
Rio De Janeiro, Brasil

Reach a global audience of 18,919 high-level subscribers

For info, contact: Rhoda Morgan 212-477-6700 morgan@marinelink.com

THE ARCTIC

Out in the Cold? Arctic Spill "Response Gap" Under the Microscope

by Joseph Keefe

Make no mistake about it: the Arctic is open for business. The cumulative environmental footprint of oil exploration outfits, merchant shipping, mining, eco-tourism and the cruise ship trades is thus far minor, but the potential for an exponential increase in commerce – especially if the climate trends now affecting the region continue – is seemingly limitless. For the maritime industry, the down side to this is as big as the most promising business opportunity to come along in decades.

The utility of a Northern Sea Route that follows the Siberian coastline, producing impressive time and fuel savings, a reduced emissions footprint, and elimination of canal transit fees for shippers moving goods between Europe and Asia has already been proven. Also being discussed for similar purposes is the exploitation of the Northwest Passage. Some are even trumpeting the route as a way to avoid the risk of piracy.

As Arctic traffic begins to grow, the lack of preparedness to support such an influx is becoming apparent. Underscoring the political reaction to last year's oil spill in the Gulf of Mexico, the oceanographer for the U.S. Navy recently stated that only a matter of luck had thus far prevented a "Titanic-scale disaster". As the rapidly melting ice converges on the escalating price of oil and other precious commodities, that luck may be quickly running out.

Commerce in that Arctic is yesterday's news. Unfortunately, it will also yield tomorrow's tragic headlines unless the international community can gear up to (a.) slow the growth of commerce to reflect the region's ability to handle a potential crisis, and (b.) rapidly build spill response capability and technology in the region. Both efforts – undoubtedly tall orders – are well underway in a number of different venues.

POLITICS, RISK & SOVEREIGNTY, TOO

The extent of Arctic sea ice reached a historical low in 2007 and some scientists predict ice-free Arctic seasons within a decade and a perennially ice-free region in the late summer by the late 2030s. According to Naval Affairs Specialist Ronald O'Rourke, at least "five Arctic coastal states – the United States, Canada, Russia, Norway, and Denmark (Greenland is a territory) – are in the process of preparing Arctic territorial claims for submission to the

Oil mixed with slush and pancake ice off the Canadian East Coast in 1986

Photo Credit: DF Dickins

Commission on the Limits of the Continental Shelf. The Russian claim to the underwater Lomonosov Ridge – also claimed by Canada and Denmark – would grant Russia nearly one half of the Arctic area." O'Rourke's report to the U.S. Congress, entitled "Changes in the Arctic: Background and Issues for Congress," details other "unresolved Arctic territorial disputes," most of which will be debated at a meeting in 2013.

The United States also has critical energy and security interests in the region. As such, the Bush Administration released in January 2009 a National Security Presidential Directive 66/Homeland Security Presidential Directive 25 (NSPD 66/HSPD 25), establishing new U.S. policy for the Arctic region. Former USCG Commandant Thad Allen has since warned that the U.S. does not have enough operational icebreakers and equipment to handle an oil spill in Alaskan waters. Today, two of the Coast Guard's three polar icebreakers sit in layup and prospects for their repair or replacements has been tied up in a political turf war because icebreaker funding is considered a National Science Foundation appropriation.

Current international guidelines for ships operating in Arctic waters are being updated, with a targeted completion date of 2010. Also at issue is the Northwest Passage which, although contained in Canadian territory, is being treated as an international strait by others. Canada last year moved preemptively to require all traffic to report their movements. The decision – one which underscores the need for caution and safety improvements – was widely criticized by shipping organizations and various flag states.

O'Rourke's report to Congress also addresses the existing framework for international governance of maritime operations in the Arctic region. He asserts that what is currently in place is not legally binding, adding, "…the Safety of Life at Sea Convention (SOLAS) and other International Maritime Organization (IMO) conventions include provisions regarding ships in icy waters, the provisions are not specific to the polar regions." The IMO has Guidelines for Ships Operating in Arctic, but these are considered inadequate by many flag states. Finally, a NOAA report pans the non-binding IMO provisions as "inconsistent with the hazards of Arctic navigation and the potential for environmental damage from such an incident."

As the IMO seeks to establish a new Polar Code and ship classification societies coordinate ice rules for ships, the need for pollution response capabilities for the Arctic is a clear vulnerability. The lack of salvage capabilities, repair yards and navigational aids is an immediate concern, not only to regulators, but also by insurers scrambling to meet the rising demand for cover. Exacerbating the situation is the claim by the International Hydrographic Organization that at little as 10 percent of Arctic waters were adequately charted. The current situation points to a sce-

Sampling oil on the surface of pancake ice during a 1986 field experiment off the Canadian East Coast.

Photo Credit: SL Ross and DF Dickins

nario of not if, but "when" the first really big environmental disaster will strike in the Arctic.

SPILL RESPONSE: REALITIES & CHALLENGES

How much do we really have to worry about? Dagmar Schmidt Etkin of Environmental Research Consulting, in her report entitled 40-Year Analysis of US Oil Spillage Rates, says, "Forty years after the 1969 Santa Barbara, California, well blowout that was a major impetus for the US environmental movement, and twenty years after the 1989 Exxon Valdez spill, which spurred regulatory changes and industry initiatives to prevent oil spills, a comprehensive analysis of US spillage rates shows significant progress in reducing spills." In the wake of that report, she also acknowledges the now-infamous Deepwater Horizon spill skews the data. She adds, "You'd need to add in another 4.9 million barrels of oil, though that is just a guess right now."

Etkin's report describes how the average annual total petroleum industry spillage has decreased consistently over the last 40 years. The report says, in part, "Seventy-seven percent less oil is spilling since the 1970s and 46% less since the decade previous to the last decade." Until Deepwater Horizon that is. Table 1 (below) shows Estimated Total Average Annual US Oil Spillage (tonnes).

Response time is the critical factor during an oil spill recovery operation because, with each passing minute, spilled product becomes more difficult to contain, and recover and track. In polar or icy conditions, oil can also migrate and become mixed with ice.

Fast response in the Arctic cold weather conditions presents logistical challenges because of the lack of existing infrastructure from which to launch these efforts. This is referred to as "the response gap." In Ronald O'Rourke's report to Congress, response gap is defined as the period of time in which oil spill response activities would be unsafe or infeasible. Although O'Rourke also says that the response gap in the Arctic has not been quantified, for northern latitudes, it is likely to be higher due to extreme weather conditions. And, a recent NOAA report concluded that "there is a clear need for emergency response equipment for SAR [search and rescue] and pollution response throughout the Arctic." There are many other problems, as outlined in Table 2 (next page).

In a 2008 report addressing oil spills and response in the Aleutian Islands, the Transportation Research Board of the National Academy of Sciences reported, "The past 20 years of data on response to spills in the Aleutians has also shown that almost no oil has been recovered during events where attempts have been made by the responsible parties or government agencies, and that in many cases, weather and other conditions have prevented any response at all." Beyond this, the Coast Guard's 17th District commander (Alaska) said in 2008, "We are not prepared for a major oil spill in the Arctic environment. The Coast Guard has no offshore response capability in Northern or Western Alaska and we only dimly understand the science of recovering oil in broken ice."

REDUCING THE RESPONSE "GAP"

As human and industrial activities in the region increase, private industry and governments are more seriously addressing the risk of oil pollution, formulating policy and initiating research and development (R&D) efforts. In February, the Arctic Technology Conference (ATC) was held in Houston. The conference (an OTC event) addressed cutting-edge technologies

Table 1
Estimated Total Average Annual US Oil Spillage (tonnes)

Source Type	1969-1977	1978-1987	1988-1997	1998-2007	% Total 1998-2007
Production	4,491	1,243	2,169	1,420	5.07%
Offshore Platform Spills	3,694	192	259	182	0.65%
Offshore Pipelines	640	495	1,161	373	1.33%
Offshore Supply Vessels	14	35	7	1	0.00%
Inland Production Wells	143	521	742	863	3.08%
Refining	429	502	2,145	1,734	6.19%
Refinery Spills	429	502	2,145	1,734	6.19%
Transport	69,809	43,092	27,250	13,770	49.16%

Courtesy: Dagmar Schmidt Etkin, Environmental Research Consulting

and innovative practices needed for exploration and production in the Arctic. It also provided a venue for those engaged in the science of fighting pollution and responding to spills in the Arctic environment. Numerous papers were presented at the Conference and a sampling of efforts now underway to respond to those events when they do occur is included in this article. These included:

SPILL EXERCISES

Kurt Hansen and Marion Lewandowski, US Coast Guard R&D, advocated the use of exercises to advance approaches to response for oil in ice environments. According to Hansen, the effects of climate change appear to be occurring in the Arctic but are also apparent in the Great Lakes. This includes the potential for a lengthening of the shipping season and lower water levels, both of which could increase the risk of an oil spill. As part of the Great Lakes Restoration Initiative (GLRI) with additional funding from the Coast Guard, aspects of response to oil spills in ice are being evaluated simultaneously in the Arctic and Great Lakes. The emphasis for this project was to develop exercises that could integrate approaches and provide the Federal On-scene Coordinator (FOSC) with trained personnel and the tools needed to complete a response. Hansen's paper outlined a great number of ongoing efforts involving workshops, drills, cooperative partnerships and exercises.

Table 2

- Poorly charted waters.
- Lack of Oil Spill Technology Focused on Arctic & Deepwater Exploration Response.
- Lack of Infrastructure.
- Excessive Response Gap.
- Absence of Harmonized International Polar Code.
- Colder water temperatures translate into fewer organisms to break down the oil through microbial degradation.
- Slower evaporation rates for oil in colder water (evaporation removes lighter, more toxic hydrocarbons)
- Oil trapped in ice, evaporating only when the ice thaws, remaining in ice for years.
- Icy conditions enhance emulsification – or creating what has been described as "mousse."
- Emulsification increases the volume of the oil/water mixture and its viscosity, impeding conventional cleanup methods.

Photo Credit: DF Dickins

Burning oil in a slush filled lead during an experimental spill on the Canadian East Coast in 1986.

RADAR SENSOR TECHNOLOGY

Per-Arne Isaksen & Arnstein Havro of Sea-Hawk Navigation AS presented a paper outlining the Application of New Radar Sensor Technology for Enhanced Safety and Oil Spill Detection through all Phases of Operations in the Arctic Environment. Highlighting the imminent need to secure early warning of oil spills, the paper asserted that by application of new and revolutionary radar sensor technology, industry can take a quantum leap in direction of safeguarding all these marine, drilling and production activities in the Arctic region and thereby avoid costly operational delays, accidents and limit oil spill recovery operations. According to the paper, "Radar picture processing has little real value unless supported by high quality input data. The Sea-Hawk technology represents the high end of radar sensor performance." It goes on to assert that Radar is the only dynamical instrument which can provide a true real-time description of its 360° surroundings. On the WEB: ***http://www.sea-hawk.no/***

IN SITU BURNING

A paper addressing the Development of High Speed Aerial Ignition Techniques For In Situ Burning was given by T. A. Preli, Shell International E & P and A. A. Allen, Spiltec; D. Glenn, of Grasshopper Aviation. According to the paper, In Situ Burning (ISB) is a key oil spill response tactic, proven in open water conditions and recently proven effective in Arctic conditions. The safe and effective ignition of spilled oil with gelled fuel has been well documented and used successfully over the past few decades in many parts of the world. However, the need has been recognized to expand aerial ignition capabilities from a helicopter deployed system, to one that can deliver large payloads of ignition material safely and effectively from fixed-wing aircraft. The paper described a research and development project involving the field testing of a concept and equipment for the ignition of gelled fuel released from the air at speeds that are two or three times faster than those commonly used when igniting with a helicopter. This "proof of concept" field test is the first step toward the final goal of developing a system that could be operated from a fixed-wing aircraft. Aerial ignition techniques have wide application for a number of spill scenarios, including the ignition of surface oil far from shore. This capability could significantly enhance the ability to eliminate large quantities of oil in remote locations that are beyond the safe flying distance of helicopters.

PREDICTION OF OIL SPILL BEHAVIOR

Presenting a paper entitled "Numerical Prediction of Spilled Oil Behavior in the Sea of Okhotsk Under Sea Ice Conditions" were Hajime Yamaguchi, University of Tokyo; Kay I. Ohshima, Hokkaido University; and Naoki Nakazawa, Systems Engineering Associates Inc., Japan. The paper described a numerical prediction system for sea ice and spilled oil, developed specifically for the Okhotsk Sea. The method enables prediction of the behavior of oil spilled in an ocean with sea ice present using PCs to obtain high resolution results; a one-week forecast of spilled oil behavior can be obtained in a few hours of computation. The method used a Distributed Mass/Discrete Floe (DMDF) model for sea ice computations that can predict the behavior of spilled oil on both open water and ice-covered seas. The DMDF model combines the advantages of a continuum model and a discrete element model: the shorter computation times found in continuum models as well as being able to express the discrete nature of sea ice. In addition, this combined model can treat a larger number of floes in much shorter computation times than previously developed discrete element models. The paper also described the need for up-to-date information of spilled oil drift for the development and implementation of an effective response. In particular, shorter computation times would be advantageous for timely implementation of oil-spill equipment deployment and cleanup procedures. The methodology can be applied to other Arctic sea areas and would be useful in ice management for ship navigation and emergency evacuations.

IMPLICATIONS FOR RESPONSE

David Dickins of DF Dickins Associates, LLC gave a paper outlining Behavior of Oil Spills in Ice and Implications for Arctic Spill Response. He reviewed the history of research into the behavior spills in ice covered waters and documents the current state of knowledge, drawing on the findings from a number of milestone field experiments conducted over the past 40 years. In particular, the paper focuses on the aspects of spill behavior in different ice regimes that can both hinder and benefit spill response, depending on the timing and type of release. With increasing interest in exploiting Arctic oil resources, the knowledge base summarized in this paper can be used to identify priority topics for future research and development. Also highlighted was Dickins' belief that "Future advances in our ability to respond to spills in ice will require a new approach to permitting experimental spills." Dickins adds, "The record shows that it is entirely possible to plan and execute experiments safely with no harm to the environment. Continued regulatory intransigence could jeopardize industry's ability to develop credible and effective contingency plans to permit future Arctic exploration and development activities." Dickins also says that one remaining area where our knowledge base is deficient involves the

behavior of oil spilled under multi-year or "old" ice. As exploration moves into deeper water, spill scenarios involving this much thicker, less porous ice will become increasingly important. Noting the barriers to obtaining necessary permits, he advocates finding a way to work with regulators and special interest groups to encourage future experimental spills in different regions. DF Dickins on the WEB: ***http://www.dfdickins.com***

FORWARD THINKING – LOOKING BACK

Perhaps the most interesting of all the oil spill research papers presented at ATC was that given by David Dickens. Although some conference presenters would have us believe that despite all of the ongoing research, the maritime and oil industries have a long way to go to catch up in terms of response capabilities in Arctic waters, Dickens paints a somewhat rosier picture. He also couldn't agree less with Retired Coast Guard Commandant Thad Allen, who recently insisted, "The R&D done in the wake of EXXON VALDEZ was what I call tanker-centric. Along the way, we've lost track of the fact that the oil drilling industry had gone deep offshore."

Dickins, a veteran of many years of oil spill research and testing, says that the current situation isn't as dire as it first looks and that the real issues involve regulatory roadblocks to developing new technologies. "Actually, our knowledge base is quite high – 40 years worth. Some of most important work is being done overseas in Canada and Norway because the United States makes it so difficult to obtain permits to conduct experiments." He also insists that the call for massive amounts of infrastructure to support oil spill response is overblown. "Infrastructure is not the answer – we don't need tens of thousands of folks and associated infrastructure to fight spills. We need to approach the response to spills in more innovative ways." Finally, Dickins asserts that many of the variables particular to attacking spills in Arctic waters can actually be used to the advantage of responders. Among these, he points to the fact that slower evaporation rates also allow for more oil to be recovered. That oil that gets trapped in ice provides the extra time to gather that oil, as well as preventing it from eventually reaching land.

The need to better prepare for the disaster that will eventually come in Arctic is undeniable. But, more is being done than meets the eye and a tremendous amount of work has already been done. Bringing that together to catch up with the rush to exploit previously unreachable trade routes and regions will take local and international cooperation. That said – and when it comes to Arctic spill response – we're not necessarily out in the cold anymore. *– MarPro*

HOT TECH (in Cold Weather)

ACT BioRemediation Products (www.actcleaners.com) has a revolutionary one step technology that aims to make bioremediation available to everyone. ACT Terra Firma Cleaner employs specially engineered microbes, mixed to provide the ideal environment for a dry and waterless none oxygenated bioremediation.

According to its manufacturer, this bioremediation product that can sustain colonization in subzero tempters at -20 degrees Celsius, operating as if it was at room temperature and is able to keep colonies a live to -69 degrees Celsius. ACT Terra Firma has the ability to draw moister to itself from the atmosphere and the contamination in extreme conditions, making it an ideal choice for remediation in subzero temperatures as well as high heat. ACT Terra Firma Cleaner can penetrate surface spills without tilling and is applied dry, needing no water or nutrients.

ACT Terra Firma in Action:

- **32 acre site with a contamination level of 1500 ppm to 30,000 ppm. This site was certified as clean within 1 year of using ACT Terra Firma.**
- **10,000 yards^3 that was going to cost $2,000,000 to haul away, but only cost $132,000 to clean up using ACT Terra Firma cleaner.**
- **2000 yards^3 of contaminated soil that had contaminations levels of 2800ppm reduced to less than 38 ppm in only 74 days. It also saved $360,000 for the cost of cleanup and reduced liability.**
- **1500 yards^3 of contaminated soil with contamination levels of 3000ppm were reduced to only 30ppm in 62 days.**
- **Spill 38 inched beneath the surface and 120 feet long. A recalculating ground injection system was installed following a nine month cleanup program resulting in a 99.5% degradation of the contaminants.**
- **32,000 yards^3 of contaminated soil. This case study is still ongoing; however, contamination levels have been reduced from 4800ppm to 125ppm in the most contaminated areas, and from 1400ppm to below 100ppm in lesser contaminated areas.**

S

Stats

Statistics

Inland Waterways Rule on Transport Efficiency

No Contest: the Backbone of America's Marine Highway is its Inland Waterways

Inland Waterways: They've beaten Rail & Trucks in virtually every measurable category comparing the modes for safety, fuel efficiency, stack emissions and economy of scale. In fact, it isn't even close. And, while the Obama Administration seems intent on spending more than USD $50 billion in the next five years on high-speed rail, to the ultimate detriment of the nation's intermodal system and the domestic waterfront itself, the numbers just do not add up. It just makes more sense to move bulk commodities, including all manners of petroleum and fuels, on the water. See for yourself using the chart below:

WATERWAYS COUNCIL, INC.

U.S. Inland Waterways Statistical Comparison

	Barge/Inland Towing	Rail	Truck
Economy of Scale	One 15-barge tow	216 railcars / 6 locomotives	1050 Large Semi Tractor-Trailers
CO2 Produced tons (per million ton miles)	19.3 tons	20.8 tons	71.6 tons
Fuel Expended (ton miles per gallon)	576	413	155
Injuries per accident (adj. for quantity moved)	1	125.2	2,171.5
Fatalities per accident (adj. for quantity moved)	1	22.7	155
Emissions (grams/ton-mile) NOx	0.469	0.654	0.732
Emissions (grams/ton-mile) Particulate Matter	0.01164	0.01624	0.018
Emissions (grams/ton-mile) CO2	17.48	24.39	64.96
Large Spills Across Modes (Number / 2001-2004)	25	115	643
Large Spills Across Modes (Amount in Gallons)	470,579	1,147,105	2,698,490

Source: Modal Comparison of Domestic Freight Transportation Effects on the General Public. Report Prepared for: U.S. Maritime Administration and National Waterways Foundation.

No Contest!

The Backbone of America's Marine Highway is its Inland Waterways

Stats

BigOil Trading Company Takes a Bath: *Where Did all of the Oil (and the $) Go?*

BigOil Trading lifted nearly 2.3 million barrels of Heavy Waxy Crude Oil in the Middle East. Three months later, however, and waving goodbye to their poorly chosen VLCC in the Gulf of Mexico, they find themselves short more than $1 million of crude oil (based on a price of $90 per barrel) on their original NSV Bill of Lading, plus freight and demurrage. As they contemplate an insurance claim on the cargo, their internal technical staffers also wonder: Where did all the oil – and the money – go?

- **A poorly chosen vessel:** Direct from the shipyard where it had been undergoing modifications to its cargo system, the vessel was also clean as a whistle and gas free on the inside before loading commenced. As a result the easily calculated loss of almost 900 barrels to ROB was likely three times that figure, given the waxy nature of the cargo. The next charterer is already licking his chops in anticipation of a healthy gain.
- **Loading:** The apparent load port TCV shortage is somewhat abated by the vessel's VEF, but that comparison is void because it was the ship's first voyage after drydock. The VEF-corrected loss of about 5,287 barrels is inflated by the lack of OBQ oil residues clinging to the vessel's internal structures. And, that meter-driven Bill of Lading? Any time you see one measured to the even 100 barrels, it was likely thrown together by the shoreside accounting team and is probably worth the paper it is printed on.
- **Transit Loss:** Did the ship steal it? Not likely in 2011 with ECA's to navigate and expensive repairs to diesel engines (burning the wrong mix) as a possible result. No, in this case, the disport inspector didn't ensure that the vessel was upright during the arrival survey. The port list with starboard gauge points produces a "paper" loss – a real one nevertheless. The poor survey leaves the charterer with little recourse for after-the-fact adjustments. At less than 0.25 percent, it is well within C/P parameters and the tolerances of marine measurement.
- **Discharging:** The VEF-corrected discharge reconciliation shows an apparent 4,000 loss which would have been even more had the vessel been gauged correctly upon arrival. Still, at least 2,000 barrels of that apparent loss is unmeasurable ROB and since that which was measureable was also deemed unpumpable/unreachable by ship's equipment by our rocket scientist cargo inspector, the charterer has no recourse against the ship for this amount, either.
- **Shore-to-Shore Accounting:** Just about the only thing that did go right for BigOil Trading was that B/L S&W declarations closely approximated disport accounting, hence this accounted for only a small portion of the overall NSV loss. At 0.51%, the NSV shore-to-shore loss qualifies for an insurance claim, but BigOil will have to decide whether to eat the loss or risk a blemish on its insurance track record. And the ~ 3,000 barrels of ROB? Poof! Gone into thin air. Better inspection and ship selection would have paid handsome dividends – and perhaps left BigOil with a more palatable voyage loss closer to 0.25 percent. ***– MarPro***

Voyage Accounting

	TCV	GSV	NSV
Bill of Lading	2248000	2248000	2242380
Outturn	2236503	2236503	2230781
Difference	-11497	-11497	-11599
Percentage	-0.51	-0.51	-0.52

Reconciliation	**TCV**	**GSV**	
Loading	-3022	-3663	
Transit	-1298	-2113	
Discharging	-6280	-4824	
OBQ/ROB	-897	-897	
Totals	**-11497**		**-11497**

Loading	**TCV**	**Water**	**GSV**	**S&W**	**NSV**
OBQ	0	0	0		
After load	2244978	341	2244337		
Receipt	2244978	341	2244337		
Bill of Lading	2248000		2248000	5620	2242380
Difference	-3022		-3663		
Percentage	**-0.13**	**n/a**	**-0.16**		

Transit Diff.	**TCV**	**Water**	**GSV**
Arrival	2243680	1,456	2242224
Difference	-1298	815	-2113
Percentage	**-0.10**	**n/a**	**-0.19**

Discharging	**TCV**	**Water**	**GSV**	**S&W**	**NSV**
ROB	897	0	897		
Discharged	2242783	1456	2241327		
Outturn	2236503		2236503	5722	2230781
Difference	-6280		-4824		
Percentage	**-0.06**	**n/a**	**0.05**		

VEF: Vessel Experience Factor. In this case, 1.00101
NSV: Net Standard volume.
S&W: Sediment & Water. B/L Declaration: 0.25%
TCV: Total Calculated Volume.
Outturn: total oil measured as receipt at disport.
GSV: Gross Standard Volume.
ROB: Remaining on Board (Cargo after discharge).
OBQ: On Board Quantity before loading.
Bill of Lading: Volume delivered (allegedly) by supplier at loading.

Sherwin-Williams Coatings: Protect Brazil's First Oil Tanker in 14 Years

At a time when the shipbuilding industry is undergoing a renaissance in Brazil, Sherwin-Williams is playing a strategic role in the fortunes of the shipbuilder Atlântico Sul, which this summer launched Brazil's first ship in 14 years, João Candido, under the Brazilian government's Program for Modernization and Expansion of the Fleet (PROMEF).

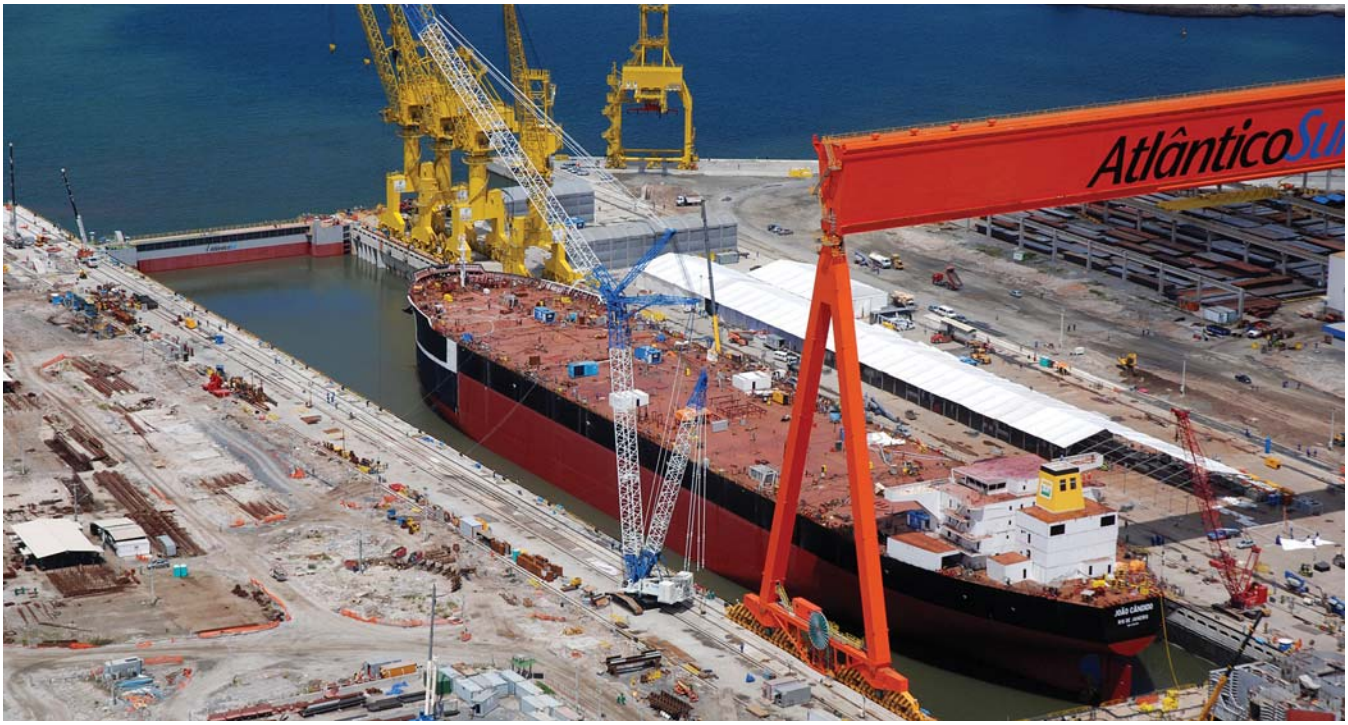
In a ceremony attended by Brazilian president Luiz Inacio Lula da Silva, the 150,000 dwt tanker left drydock following the closure of its hull and was rolled out to sea to finish for December delivery. It is the first of a series of 22 ships that are already on the shipyard's order book, along with the hull of the P-55 platform of Brazilian oil giant Petrobras, according to Angelo Alberto Bellelis, Atlântico Sul president.

Sherwin-Williams' Euronavy ES301 coating system is protecting the new ship's ballast tanks, and the coating is a significant factor in the shipyard's productivity as it fulfills its contract to build ten Suezmax (able to carry up to one million barrels of oil) tankers under PROMEF for Petrobras.

Atlântico Sul is the first of a number of new shipyards coming on line to meet Petrobras' surging demand for ships. Keeping up with that demand requires innovative approaches to shortening building schedules, and Sherwin-Williams has been driving that innovation. Using the ES301 coating technology, Atlântico Sul has been able to double its productivity in terms of square meters of surface prepared. Construction of João Candido occurred while the shipyard itself was being completed.

Typically secondary surface preparation at the block stage involves abrasive blasting to prepare steel surfaces and weld seams prior to topcoating. Euronavy ES301 can accomplish the same task using ultra-high-pressure (UHP) water jetting, or hydroblasting, which saves shipbuilders time and money. Petrobras pioneered the concept of combining hydroblasting and coatings that are solvent-free and tolerant of humidity across the operations of Transpetro, its shipowner subsidiary. Now Transpetro considers ES301 hydroblasting the new standard for coating in the shipping industry.

A further advantage is the chemistry of the Euronavy pre-construction primer, which is zinc-free. The primer is applied before undertaking block construction as a precaution against flash rust on the steel following its initial pass through an automated abrasive blasting system. Typical primers contain zinc dust; zinc primers are more expensive than epoxy primers because zinc is a commodity so its price fluctuates, making it difficult for shipyards to project costs. Euronavy PE 31 PCP has a lower cost projection and was the first non-zinc product to be IMO PSPC-type approved.



D

Directory

Energy Product & Services Directory

From capital to cargo, to pollution abatement and legal advice, all the way to safety, security and software. It's all here to help you run and optimize your energy-related enterprise.

ACT BioRemediation

ACT BioRemediation Products are changing the way the world cleans. ACT Terra Firma Cleaner is a blended product with specially engineered microbes that are mixed into a formulation which provides the perfect environment for a dry and waterless non oxygenated bioremediation. The only Bioremediation product that can sustain colonization in subzero tempters at -20 degrees Celsius, ACT Terra Firma also has the ability to draw moisture to itself from the atmosphere and the contamination in the most extreme conditions. The product is applied dry, needs no water or nutrients and in most cases will not need tilling. ACT Terra Firma Cleaner can penetrate surface spills without tilling up to 12 inches. ACT Terra Firma Cleaner is an industrial formulation having a high level of petroleum and protein based microorganisms, along with its use on petroleum based spills the formulation is also designed for animal waste using the process of bioremediation to decompose the waste in soil and on hard surfaces and has a natural ability to eliminate odors stopping air pollutants by the remediation of the gases. The immediate encapsulation process stops Rain Water Runoff and reduces the animal waste to a compost material that can be used in gardens, flower beds, and promoting the growth of plant life and returns the soil to a healthy state. The ACT BioRemediation Product line safely removes Petroleum and Protein contamination from soil, concrete, asphalt, wood, plastic, metals, and water. Website: www.act-cleaners.com / telephone: 866-919-2872

Amarcon

Amarcon is the creator of OCTOPUS, a suite of hardware and software products that form a unique solution for the improvement of safety and efficiency for ships operating at sea. This leading to significant cost reductions for the industry. OCTOPUS-Onboard is a state-of-the-art modular decision support system for ships and other floating structures. Shipping companies and offshore contractors have used OCTOPUS-Onboard since 2003 for route and operation planning and optimization of speed, heading and fuel consumption in every weather condition. One of the extensions within OCTOPUS-Onboard is the Dynamic Positioning capability forecast function, DP for short. The OCTOPUS-DP functionality gives offshore vessels the possibility to make optimum use of a safe time window for their weather-sensitive operations. Where traditional DP systems try to keep the vessel's position during an offshore operation, OCTOPUS-DP takes it one step further. A forecast is given if the vessel is capable of maintaining her position and heading in changing environmental and weather conditions, hours and days ahead. With DP capability the crew can easily see if it is sensible and efficient to start or go on with the operation at sea. The benefits are clear: A clear and complete indication of the operational windows for weather-sensitive operations at sea, Better and efficient preparation and execution of projects, Less damages and stress to the vessel, Optimal use of man and machine in a safe environment, leading to significant cost reductions.

Telephone: +31-529 436 876
www.amarcon.com
E-mail: tim.ellis@marcon.com

BC CAPITAL GROUP

BC CAPITAL GROUP represents 800 lenders who provide commercial financing of all kinds. The economy may be in trouble but financing is still on the rise which allows Maritime Companies to expand and grow their businesses even in an ever changing economy. BC Capital finances everything from Yachts to Ships and to Shipyard deals. Representing several hundred non bank lenders who obtain their funding, not from depositors but rather, by selling various financial instruments through the capital markets or through private investors or hedge funds, BC CAPITAL is able to be far more aggressive and entrepreneurial than banks. With integrity and honesty as the cornerstone of their business philosophy, and with over 100 years of combined lending experience with every type of conceivable loan, BC CAPITAL GROUP along with its partners are here to help your company get the financing or funding it needs. BC CAPITAL GROUP is the broker to get the job done.

Telephone: 646-355-3282 or 561-271-5662
www.bccapfunding.com
E-Mail: kevcav@bccapfunding.com

Blank Rome Maritime

Blank Rome Maritime was founded in 1946 in Philadelphia by a small group of entrepreneurial corporate and commercial lawyers, Blank Rome LLP has grown to be ranked 86th in the Am Law 100 and is among the fastest growing law firms in the country. Blank Rome Maritime serves the shipping industry around the world and regularly handles complex, multi-jurisdictional, and international maritime and admiralty matters. Strategic mergers with the maritime practices of Dyer Ellis & Joseph in 2003 and Healy & Baillie in 2006 gave Blank Rome Maritime a solid foundation as the largest maritime and admiralty law practice in the United States. With offices in Shanghai, Hong Kong and Los Angeles, Blank Rome is well positioned to assist clients with maritime-related matters in China and throughout Asia and the Pacific. Blank Rome's maritime practice is consistently ranked at the top by Chambers Global, Chambers Asia, Asia Legal Pacific, and Chambers USA. To learn more about Blank Rome Maritime, please visit

www.BlankRome.com/Maritime

GMATS

The Global Maritime and Transportation School (GMATS) provides world-class professional education and training programs (including content design, development, and delivery), instructional services, research studies, and technical assistance that enhance the safety, security, efficiency, and environmental soundness of maritime operations and global transportation systems. GMATS is currently divided into 4 divisions Nautical Science and Military Training, Marine Engineering, Transportation Logistics and

GMATS

Global Maritime and Transportation School

Management, and Research and Special Projects. Together these divisions offer more than 140 professional education and training programs. In addition, GMATS specializes in developing customized education and training programs that meet the specific needs of any transportation organization. With nearly 4000 students annually attending its programs, GMATS has become an important supplier of maritime and transportation training for personnel from numerous government, military, and commercial entities. GMATS is co-located with the U.S. Merchant Marine Academy (USMMA) on 82 acres overlooking Long Island Sound in Kings Point, New York.

Telephone: 516-726-6100 (6158)
http://gmats.usmma.edu
E-mail: registrar@gmats.usmma.edu

Intertek

Intertek reduces commodity cargo trading risk around the world through independent inspection and testing services. Intertek helps protect high value bulk commodity cargos, significantly reducing risk of loss exposure to the trading parties involved. Intertek has been providing cargo inspection services since 1885, having started under the name Caleb Brett. Intertek is a member of IFIA* and performs inspection services to global industry standards and other recognized criteria. High value bulk commodities like crude oil, fuels, grains, edible oils and many other product are measured, analyzed and verified for shipment and inventory quantity and quality. Inspectors survey and sample representative product from bulk storage tanks, tankers, cargo ships, barges, shore storage and transfer facilities, railcars and warehouses. Intertek's experienced chemists follow accepted industry and regulatory methods and practices to obtain accurate, reliable and repeatable results.

Intertek

Valued Quality. Delivered.

Telephone: 713 407 3533
www.intertek.com/inspection/cargo
E-mail: erik.holladay@intertek.com

Jeppesen

JEPPESEN
A BOEING COMPANY

Jeppesen Maritime Suite integrates products and services in a unique way that allows them to use and share information for consistent and streamlined interaction across the enterprise. As products and services are used together, data is transformed into intelligent, actionable information, giving companies more visibility into their businesses, which leads to better decision making and improved bottom lines. Jeppesen Maritime Suite integrates three essential components to deliver intelligent information, which allows commercial shipping companies to more efficiently run their businesses and make smart investments for the future.

- Planning and Navigation Data products such as official ENCs, industry-leading, proprietary global chart database, weather service and piracy data
- Optimization and Performance solutions, including shore side tools for fleet tracking and performance management and advanced analysis, and on board tools for optimized routing, efficiency and performance monitoring and deck and engineering logging.
- Professional Services, including deployment and training, reporting and analysis and industry-best routing and naval engineering and consulting services .

Telephone: +47 51 46 47 00
Website: www.jeppesen.com/marine
E-mail: marineinfo@jeppesen.com

Mariner

MARINER

Mariner is committed to helping maritime enterprises, government agencies, supply chains, and nations avoid threats to their safety and security, and to making them better prepared to respond when emergencies occur. Identifying legitimate security threats from the flood of information available today is a vital concern. CommandBridge, Mariner's flagship technology, provides users with a highly configurable, security-based, situation-awareness software platform. Its Web-based technology allows watch-standers, command-and-control centers, intelligence analysts, and others to collaboratively interpret information and make actionable recommendations, rather than merely collect and display data. Users can configure the system to create automated rules-based situation management; highly-visual, interactive geospatial, timeline, and dashboard visualizations; and intelligent workflow-based response tools. CommandBridge's "Interconnected Awareness" permits real-time situation collaboration within and among organizations and across multiple locations and partners. Together with anomaly detection, configurable rules with tailored alerts, and role-based workflow, CommandBridge provides users with true collaborative situation awareness. Web Site: www.marinergroup.net / Telephone: 800-341-2755.

Navarik

navarik™
Data Delivered.

Navarik's mission is to be the leading provider of physical operations software and information services for the commodity trading industry. Our on-demand software services automate physical trade operations and maritime shipping logistics for crude oil, refined products and bulk commodities and we are the global leader in cargo inspection management. Many of the world's largest oil companies rely on our flagship product, Navarik Inspection TM, for business process

automation and data intelligence to help them achieve better performance from their inspection firms, terminals and vessels; and to help them quickly determine the actual quantity, quality and status of cargos. Recognizing the critical need for cargo inspection management in the energy space, Navarik's early focus helped to achieve a dominant market position – managing data representing over 40% of the U.S. seaborne crude oil imports – in the oil industry. Navarik is committed to delivering software and data services to support other energy and commodity areas, such as coal and bulk agriculture products, as well as helping our customers manage Green House Gas (GHG) emissions data and maintain compliance with new government regulations. Navarik actively participates in several industry conferences and associations, including the Leadership for Energy Automated Processing (LEAP), the National Petrochemical & Refiners Association (NPRA) and the American Petroleum Institute (API).

Telephone: 604-633-0018.
Website: www.navarik.com

Transas Marine

Transas Marine, a leading global maritime electronics company, offers an extensive range of offshore solutions aimed at increasing safety even in the most demanding environment.

Transas provides complete Offshore bridge solutions including NAUT-OSV Bridge. The solution is based on Transas Navi-Sailor 4000 Multifunction Display incorporating ECDIS, Radar, Conning and Alarm Monitoring System. Offshore Monitoring Solution tracks vessel movements in a guarded area around subsea installation and provides full situational awareness for field operators. It ensures reliable asset and environment protection and personnel safeguard. Transas Offshore Monitoring Solution provides security on a number of oil & gas platforms and wind farms all over the world. Full-mission Liquid Cargo Handling Simulator provides training of personnel responsible for cargo operations onboard gas and liquid carriers. Training in operations on VLCC/LCC, FPSO, chemical, LPG, LNG-m and LNG-s tankers is available.

Transas award winning Navigational simulator NTPRO offers dynamic positioning system training which is in full compliance with the Nautical Institute standards and equivalent class notations. Major training centers all around the world admit high level of realism and professionalism of Transas simulators.

Telephone: 425-486-2100
Website: www.transas.com
E-mail: info@ransas.com

Coming in the Q3 Edition:

- TRAINING & EDUCATION
- MARITIME SECURITY

Bonus Distribution: OTC BRAZIL

Opportunities

Positions, Services, Business Opportunities

Director-Washington Operations Office

Job ID: 104701 at www.MaritimeJobs.com

Austal USA is seeking to fill the position of Director for our Washington Operations Office located in Washington D.C. This position will provide coordination, guidance and direction to the liaison office team, including managing customer relationships, while maintaining visibility and tracking of customer issues, ensuring customer awareness of Austal issues, promoting regular communication and interaction with the supported government and Austal program staffs to address production, schedule, material & engineering issues and report status of issue resolution. This position will also coordinate and participate in required Washington area meetings, briefings and discussions and provide mediation to resolve conflicts. The Director will establish business intelligence networks to anticipate customer needs and proactively position the company to respond to those needs, as well as, develop capture plans for emerging markets and provide assessments of potential for success and competitive positions. In addition, the Director will act as Austal's advocate during meetings, briefings & visits. **Please apply at: http://www.austaljobs.com**

Assistant Safety, Quality and Environment Manager

Job ID: 104710 at www.MaritimeJobs.com

Roymar Ship Management Inc. maintains a diverse and flexible fleet of multipurpose cargo ships and bulk carriers. Roymar is based conveniently in Scarsdale, NY, and is seeking an experienced professional for the position of Assistant Safety, Quality and Environment Manager. The position involves acting as Fleet FMSO (DP) and responsible in the implementation and maintenance of the Safety/Quality/ Environmental Management System; and acting as Fleet Company Security Officer and responsible in implementation SSP/ISPS Code. Must have a Master Mariner's experience of at least 3 years. Must be familiar with ISM Code, ISO 9001/QMS, ISO 14001/EMS & ISPS Code. Requires strong organizational/interpersonal skills and computer literacy. We offer a competitive salary and benefits package. Send salary requirements with resume to recruiting@roymar.com or fax (914) 793-2519 with the heading AM2 on all transmissions. **Email: recruiting@roymar.com**

Vessel Manager Ships Agency

Job ID: 104745 at www.MaritimeJobs.com

Purpose: To ensure the daily vessel operations are handled in the proper and professional manner that our principals expect.

Main Responsibilities/ Essential Functions

- Execute all duties prior, during, and after vessel's port call, up to and including terminal notification, berthing instructions, cargo operations, departure arrangements, and appropriate documentation.
- Ensure timely and cost efficient turn around of the vessels while in port or at the lightering area.

- Keep principals regularly updated on vessel activity as per customer requirements and ensure same from staff.
- Acknowledge appointment and send pro-forma and office full style
- Monitor Ships Agents compliance with Government regulations and related documentation filing and compliance with Principal's requirements.

Wilhelmsen Ships Service
Contact: Human Resource
9400 New Century Drive, Pasadena, TX 77507 USA
Phone: 281-867-2000; Fax: 281-867-2831; www.wilhelmsen.com

Program Coordinator-Risk Management

Job ID: 104736 at www.MaritimeJobs.com

This position will be responsible for maintaining/managing the Risk and Opportunities Database Program, support the Risk Management Board and presentations associated with Risk Management and set priorities, mediate and resolve work sequence conflicts. Chosen candidate must be familiar with the shipbuilding specification and Shipbuilding processes/procedures. Chosen candidate will possess a BS or BA degree plus 3 years overall shipbuilding or similar/relevant experience and training and experience with US Navy Supervisor of Shipbuilding activities, and/or ship. Candidate must be very proficient in Microsoft Office applications and the development/use of Databases tools (Access & Excel) and have the ability to read, analyze and interpret contracts, contract specifications and major equipment specifications. Previous experience working with Risk-Opportunity management is a plus.

Please apply at www.austaljobs.com

Advertiser Index

Page	Company	Website	Phone#
37	AG Marine	www.agmarine.com	Please visit us online
7	American Bureau of Shipping	www.eagle.org	(281) 877-5861
37	American Cleaning Technologies, Inc.	www.actcleaners.com	(866) 919- 2872
62	Commercial Marine Expo	www.comarexpo.com	(207) 799-1356
1	Delta Wave Communications, Inc.	www.deltawavecomm.com	(866) 650-9283
9	Drum Cussac	www.drum-cussac.com	44 (0) 1202 853 109
C4	EPD Electronic Power Design, Inc.	www.epdltd.com	(713) 923-1191
C3	Faststream	www.faststream.com	(954) 467-9611
C2	GMATS	http://gmats.usmma.edu	(516) 726-6100
11	International Registries Limited	www.register-iri.com	44 20 7638 4748
25	Intertek	www.intertek.com	Please visit us online
41	Jeppesen	www.jeppesen.com/marine	47 15 46 47 00
31	Navarik Corporation	www.navarik.com	(604) 633-0018
11	NorthCore Security & Logistics LLC	www.ncsecure.com	(877) 450-8592
15	Oasis Security Group USA	www.oasissecuritygroup.com	(804) 677-5760
13	Seut Maritime AS	www.seutmaritime.no	47 69 34 50 60
7	The Mariner Group LLC	www.commandbridge.com	Please visit us online
3	Transas	www.ecdisfit.com	46 31 769-5600
23	UK P&I Club	www.ukpandi.com	44 (0) 20 7283 4646
13	Wavebraakker	www.wavebraakker.com	(281) 384-6222

THIS IS NO PLACE TO LOSE POWER

EPD - Designing power systems for *any environment.*

World Leader in Integrated Diesel / Electric Power Systems

Electronic Power Design, Inc. (Houston) and **EPD Asia Group (China)** are considered among the top design/engineering and manufacturing companies in the world for marine diesel/electric power systems. With the expansion of **EPD Singapore Services (Singapore)** and the new **EPD do Brasil (Rio de Janeiro)**, the EPD group of companies manufacture and support customer equipment worldwide.

Our Range of Services:

- Engineering
- Design
- Programming
- Manufacturing
- Commissioning
- Field Service

For more information contact Sales@EPDLtd.com

EPD ELECTRONIC POWER DESIGN, INC.
ELECTRICAL SYSTEMS INTEGRATOR

EPD ASIA GROUP, LTD.
ELECTRICAL SYSTEMS INTEGRATOR

EPD SINGAPORE SERVICES, PTE. LTD
ELECTRICAL SYSTEMS INTEGRATOR

EPD CHINA GROUP, LTD.
ELECTRICAL SYSTEMS INTEGRATOR

EPD DO BRASIL, LTDA.
EPD do Brasil Indústria e Serviços Elétricos Ltda.

Houston: +1 713 923 1191 | Asia: +1 0086 514 8752 7700 | Singapore: +1 65 3156 3646 | Brazil: +1 55 21 3738 9887 | www.epdltd.com