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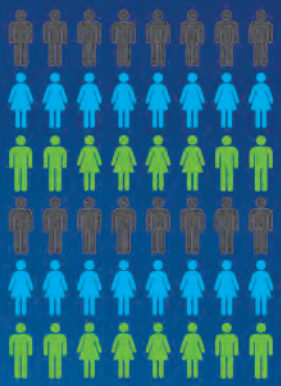

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1st Quarter
2015
Volume 5
Number 1

Maritime Professional

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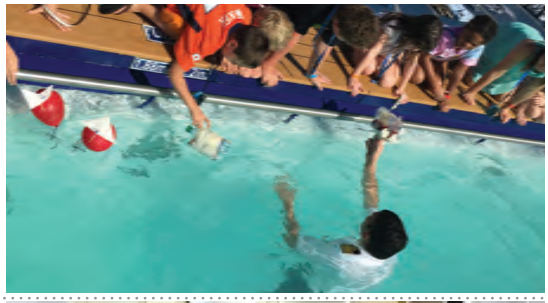

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ON THE COVER

The bridge management team closely monitors the progress of the Crowley managed vessel "Sunshine State" while underway. At Crowley – like every quality ship manager – the human element of shipping receives top priority. Find out why and how, starting on page 32.

Photo by Brian Gauvin

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Website: www.shipping2015.com

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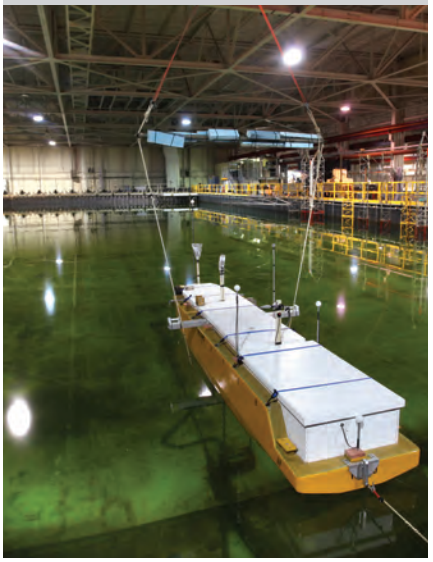

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USPS # 005-893

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Managing the Human Element

Too many times, we are simply not aware of what we do not know. That said; if the first quarter of 2015 brings only one thing into crystal clear focus, then that would probably involve the reality that the human element of maritime operations is the glue that holds the entire business model together. At the same time, any flaws or faults in this aspect of your far flung, waterborne enterprise are sure to take you down. The days of merely finding someone to wander up your gangway to meet minimum crewing requirements is certainly over. The advent of the Standards of Training, Certification and Watchkeeping (STCW) is a big part of that equation, but it is by no means the only variable in play.

The right seafarer won't be cheap, he or she won't be easy to find and once here, that individual will need to be trained and verified as competent. If only it were that easy. You may find, more often than not, your (considerable) investment in human resources walking back down that gangway and onto someone else's platform. Beyond this, it probably won't be for the usual reasons. Within this issue of ***MarPro***, we examine the ins and outs of recruitment, retention, training and what makes all of that tick. You might just be surprised at what you did not previously know.

Separately, and even in a precarious energy environment that has impacted if not upset some previously solid business models, the white knight known simply as LNG is still in the mix. Coming and already enforceable environmental standards for the maritime industry are (slowly) moving some players towards LNG as a fuel. The ever changing, geopolitical landscape will make sure of that. Through it all, innovation is the key, bolstered by a 50-year safety record unmatched in any other sector. Once peeled away, the misconceptions that remain about LNG, its transport and technology, will eventually evaporate like the boil-off consumed by a ship from its transocean liquefied cargo. That story begins on page 46.

Because not all "maritime professionals" work at sea, this edition also profiles the necessary (and enormously interesting) work done by marine insurance professionals everywhere. In particular, a look at the role of the marine surveyor in the realm of marine underwriting is a fascinating journey into a curious, but entirely necessary career path. But, what PJ Jacquelin does for Barney and Barney – a Marsh & McLennan Agency LLC Company since 2012 – cannot necessarily be described in the context of simple survey work. Addressing marine risk from all angles, and leading his firm's Global Marine Practice Group, Jacquelin weaves an interesting mix of office and field work into a career built on many layers, including but not limited to, at sea commercial experience, U.S. Coast Guard service and even time spent as an instructor at the California Maritime Academy. As you turn the pages, you'll come to understand that, for this maritime professional, there is 'no risk in a curious career path.'

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

THE LIST People & Companies in This Edition

Insights

Middle Market Mergers and Acquisitions: *A Primer*

By Harry Ward

Over the past few years, we have provided regular analysis of the maritime and offshore industry mergers and acquisitions (M&A) markets. But what goes into those decisions and transactions? This quarter, an overview of the basics of mergers and acquisitions – the players, the process and the terminology – will simplify the language of M&A.

Buyers

In simple terms, there are really two types of buyers in the M&A world: Financial Buyers and Strategic Buyers. A 'strategic' is generally a larger company with operations that are similar to those of the 'target' company, and the acquisition is intended to capitalize on the synergies between the two entities. The prototypical financial buyer is a private equity group, which is likely to buy and hold the target for some period of time before pursuing another sale or IPO.

Strategic buyers tend to employ internal 'corporate development' staff members to seek out, evaluate and execute transactions. Acquisitions are funded both through cash on hand as well as credit lines and other debt instruments, and publicly-traded companies have the additional advantage of offering company shares as transaction currency. Two examples of prolific public company acquirers in the maritime and offshore industries are Kirby Corporation (NYSE: KEX), and more recently Teledyne Technologies (NYSE: TDY). Kirby made a number of strategic acquisitions in the liquid tug and barge transport market, particularly between 2010 and 2012, while Teledyne has added a number of strategic subsea technology holdings since 2013 including Bowtech and Bolt Technology.

Financial buyers come in many different forms, but the most common type is called a "Private Equity Group." PE groups are formally established investment firms with a full-time staff and committed capital from several investors, with a mandate to seek out and acquire companies. Most often, a private equity group will acquire "platform" companies, followed by smaller "add-on" acquisitions of companies that complement the platform. After a period of time, perhaps five years or so, the fund will pursue a follow-on transaction with the (hopefully) larger and more profitable portfolio company. This transaction will return capital and profits to the fund and its investors and may be in the form of a fully company sale, a recapitalization through borrowing against profits, or in rare cases, an initial public offering (IPO) on a stock exchange.

Private equity investors have proliferated in the past couple of decades and there are now thousands of firms in the U.S. which vary widely in terms of fund size, staffing and formal commitment of capital. According to the private equity database provider PitchBook, there are more than 17,000 formally-established private buyout and venture funds in the United States – this doesn't include thousands of "angel" investors and small, highly-focused acquisition funds.

Sellers

For every buyer in an M&A transaction, there must be a seller. Companies enter the M&A market from a number of ownership structures including closely held family businesses, divisions and subsidiaries of larger companies, and of course from the portfolios of private equity firms. Perhaps even more diverse than types of sellers in the market is the variety of motivations and goals of owners entering into M&A transactions.

Owners of smaller, closely-held companies will often contemplate a transaction for many years prior to reaching a decision to pursue a transaction, but very few actually develop a formal transition plan for their company. This dynamic is often a result of the same entrepreneurial qualities that made the owner successful in the first place: he or she is too consumed with managing a successful business every day, and may not be too biased toward giving up control to others. Sometimes owners are pushed toward a transaction process due to outside forces, such as health issues, divorce or lack of a clear successor when retirement becomes imminent.

Larger corporate and financial sellers tend to be more calculating in their decisions to go to market with a business entity. Corporations may divest subsidiaries and divisions that no longer fit within their strategic plan, and the capital raised in a sale process can be redeployed for a higher long-term return. In the case of private equity sellers, the impetus to go to market is ideally driven by the fund's investment goals and desired holding period, though outside market forces may sometimes dictate the timing of a sale. Alternatively, in an economic climate such as today with favorable debt terms, owners of cash-flowing companies may prefer to recapitalize rather than sell outright, thus taking cash "out" of the business and shifting some risk to one or more lenders.

The M&A Process

Regardless of the type of business ownership, most sophisticated sellers in the middle market will seek out knowledgeable

"Company values are determined through intricate review of company financials and hundreds of other documents, but in the end there must be a compelling investment thesis for a buyer to complete the transaction. Final company valuation reflects the confidence that a buyer has that an acquisition will contribute to future company earnings or return to private equity investors."

advisors to help guide them through the long and challenging M&A process. Investment banks provide services to owners, from evaluating the company's market value to laying out exit options and running a full M&A "auction," which despite the name is typically a tightly-controlled and confidential market process with a targeted list of potential buyers. For companies that aren't quite suited for the large, recognizable wall street firms, there are many smaller "lower middle market" investment banks in the U.S. that tend to have strong experience in certain market niches. The lower middle market has many definitions, but a common range might include businesses with market values of around $10 million to $200 million.

Often, a business owner will engage advisors to explore exit options a year or more before going to market. During this early phase, owners will get a sense for the expected range of value that the company will bring in the market and evaluate whether a full sale, recapitalization or other ownership transfer best fit his or her goals. If a company sale is the chosen path, a process begins which takes an average of six to nine months though it can certainly extend beyond that time frame and in some cases can be expedited quite a bit. In simple terms, the seller and M&A advisor will build an agreed-upon list of potential buyers for the company, often a mix of strategic and financial buyers. The deal team assembles a very comprehensive confidential memorandum or "book" that is designed to detail everything a potential buyer would need to know in order to formulate a valuation.

The seller's M&A advisors reach out to the buyer list with a basic, anonymous description of the opportunity and interested parties sign a non-disclosure agreement in order to gain access to the book. At this point, an involved process begins in which buyers and sellers exchange information, meet and negotiate letters of interest and work toward detailed offers for the company. Offers on the same business may vary widely in terms of total value and especially deal structure, so the deal team negotiates with the top few prospective buyers and eventually enters a period of "due diligence" with the chosen buyer. Due diligence runs an average of about 60 days, during which time the buyer and their team of advisors closely examine the business, legal and accounting details of the target company, and draft the final purchase documents.

Company Valuation

Company values are determined through intricate review of company financials and hundreds of other documents, but in the end there must be a compelling investment thesis for a buyer to complete the transaction. Final company valuation reflects the confidence that a buyer has that an acquisition will contribute to future company earnings or return to private equity investors. It's worth noting that the value resulting from an M&A transaction is the true "market value" of the company, in contrast with values that might result from a formal, written valuation. Specialized firms provide formal valuations for purposes such as stock option valuation, litigation and estate planning, among many others.

In the world of middle market mergers and acquisitions, company valuations are most often expressed in terms of a multiple of earnings. Typically, financial reports in the U.S. will refer to a company's multiple of 'EBITDA' (Earnings Before Interest, Taxes, Depreciation and Amortization) as a measure of M&A deal value. In simple terms, EBITDA is a measure of cash generated by a company and excludes financial items such as taxes and deductions that can vary widely. By way of example, Braemar Shipping Services acquired ACM Shipping Group in 2014 for $87.8 million, which reflected a 12.2X multiple of the target company's approximately $7.2 million of EBITDA over the preceding 12 month period.

Multiples of EBITDA and other deal metrics are far from perfect and by their nature they mask important differences between companies as well as variations in deal structure. However, these multiples provide a common framework from which to begin a discussion of the marketplace for private companies.

The market for mergers and acquisitions of private, middle market companies is highly-developed and requires some study to grasp the many facets and terms involved. Buyer types and deal structures vary almost as widely as the target companies themselves, to say nothing of the diversity of business owners and their motivations. Though financial publications attempt to simplify the market and categorize deals by assigning multiples, the world of M&A is really composed of thousands of individual stories, each of which is resolved through a rigorous and in the case of closely-held businesses, a very personal process.

Harry Ward leads the transportation and logistics practice at The McLean Group, a middle-market investment bank based in the Washington, DC area. Mr. Ward has executive management experience in the marine industry and focuses on mergers and acquisitions for mid-sized companies. He is a US Naval Academy graduate and earned an MBA at San Diego State University.

Insights

Shipping Under Pressure

Improving Revenue-to-Operating Costs Ratio will be the Key

By Richard Greiner

AFTER enjoying a continuing boom for four years up to late 2008, the international shipping markets hit a wall, and thereafter started to slide down it. Although there has been a recovery from that freight market nadir, the six years from 2009 to 2014 have been very challenging in terms of trying to achieve a reasonable return from the tanker, dry bulk and container ship sectors.

Over the same period of time, some of the volatility has gone out of ship operating costs, with a small decrease (the first for six years) recorded in respect of 2009, prior to two years of small increases. Operating costs then fell by a small margin in the following two years, but are thought to have risen again in 2014 and are predicted to increase once more this year.

So where does this leave the industry now, in terms of measuring revenue against costs? The latest year for which comparable figures are currently available is 2013. According to the latest OpCost study (**www.opcostonline.com**), which Moore Stephens uses uniquely to benchmark ship operating costs, total annual operating costs in the shipping industry fell by an average of 0.3 percent in 2013. This compares with the 1.8 percent average fall in costs recorded for the previous year.

Operating Costs

Total operating costs for the tanker sector were up in 2013 but down in the bulker and container ship sectors. The tanker index was up by 2 points, or 1.1 percent, while both the bulker index and the container ship index were down by 2 points, or 1.2 percent, on a year-on-year basis. The corresponding figures for 2012 showed falls of 5 points, 7 points and 3 points respectively in the tanker, bulker and container ship indices.

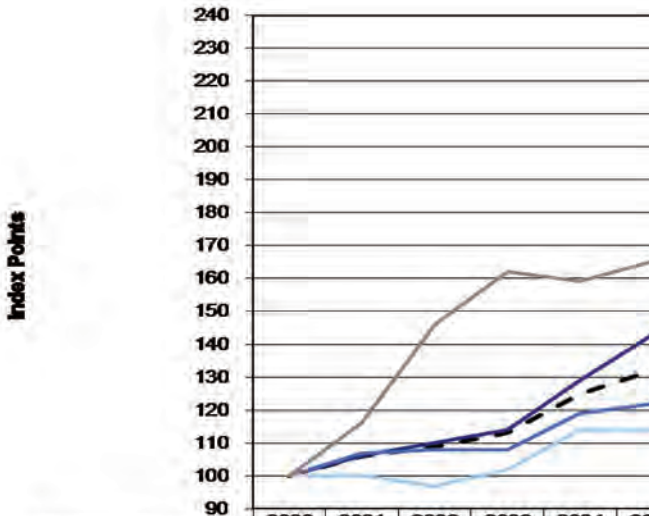
Daily operating costs in 2013 were up for all categories of tanker included in OpCost. The following are the daily operating costs for certain categories of tanker, with the corresponding reported average time-charter rates for the year, as reported by Clarksons, shown in parentheses. Handysize product tankers: $7,964 per day ($13,063 per day); Panamaxes: $8,482 ($14,981); Aframaxes: $8,272 ($13,288); Suezmaxes: $9,378 ($16,014).

In the bulker trades, meanwhile, operating costs were down in 2013 for all categories of vessel. The daily operating cost for Handysize bulk carriers was $5,222 (with an average time-charter rate for the year of $8,106 per day). Other figures were those for Panamax bulkers: $6,118 ($10,099); and Capesizes: $7,303 ($15,760).

The operating cost for a Feedermax container ship in 2013 was $4,491 per day, as against average time-charter earnings for the year of $4,842. The corresponding figures for 1,000-to-2,000 teu container ships were $5,300 and $7,096, and for main liner vessels of between 2,000 and 6,000 teu, $7,389 and $7,021.

Freight Rates

Freight levels may never recover to reach the heights achieved in their mid-2008 heyday, when it was reported that some Panamax vessels could earn up to $100,000 per day. Owners and operators, however, will clearly be looking to improve significantly on the returns achieved in 2013. Indeed, figures from Clarksons show a definite improvement in 2014 average time-charter rates in the crude tanker market for 2014, with a near-42 percent improvement for VLCCs, for example. Average time-charter rates for 2014 in the bulker sector were also significantly improved, with rates for Capesize bulkers, for example, up 38 percent on the previous year.



	2000	2001	2002	2003	2004
Tanker total	100	106	109	113	125
Crew costs total	100	106	110	114	129
Stores total	100	107	108	108	119
R&M total	100	100	97	102	114
Insurance total	100	116	146	162	159

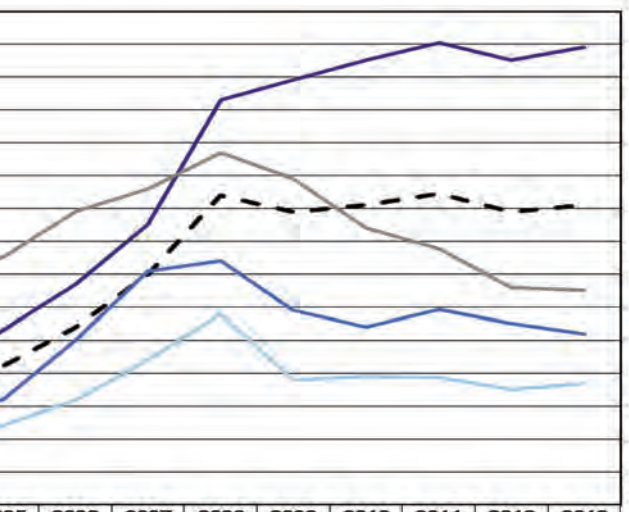
Some of the gloss may have come off those improved figures in the early part of this year, but the real taking point at the moment is the Baltic Dry Index which, having nudged towards 12,000 in mid-2008, was hovering at around 770 in January 2015 and, at the time of writing, was very close to an all-time low. The market is very volatile, and likely to remain so for some time. Confidence in the shipping industry was at its highest level for six years in first-quarter 2014. Sadly, however, it closed the year on a two-year low.

One needn't be a rocket scientist, or even a naval architect, to appreciate that overtonnaging is a significant factor in depressing freight rates, which in turn impacts adversely on industry confidence. Despite increased scrapping, and despite the paucity of traditional bank finance, there are still too many ships on the market to carry the cargoes available. For as long as this is the case, freight rates will remain under pressure.

OpEx: Crew Costs in the Spotlight

So far as operating costs are concerned, it is instructive to see where the industry is spending its money. Once again, crew costs were the headline figure in 2013, when they were the only category of expenditure to show an increase over the 12-month period. This time it was a comparatively small rise for an in-

OpCost tanker indices



005	2006	2007	2008	2009	2010	2011	2012	2013
32	144	160	184	179	181	184	179	181
43	157	175	213	219	225	230	225	229
22	140	161	164	149	144	149	145	142
14	122	134	148	128	129	129	125	127
65	179	186	197	189	174	168	156	155

Year

dustry which had seen increases of more than 20 percent at their peak. The fact that such costs were the only category to show an increase for 2013 is perhaps a reflection of a diminution in the number of owners and operators exiting the industry and a reminder that investment in good people is a must.

There was a 0.2 percent overall average rise in 2013 crew costs compared to the 2012 figure. By way of comparison, OpCost revealed a 21 percent increase in this category in 2008. Tankers overall experienced an increase in crew costs in 2013 of 1.8 percent on average, compared to the 2.3 percent fall recorded in 2012. Within the tanker sector, Handysize product tankers reported an overall increase of 3.3 percent in crew costs, while for operators of Suezmaxes and product tankers the increases were 2.5 percent and 1.9 percent respectively. The only tanker category to show a fall in crew costs was VLCCs, down by 0.9 percent.

For bulkers, the overall average fall in crew costs was 0.5 percent, the same as in the previous year. The operators of Panamax bulkers paid 2.3 percent less in crew costs than in 2012, but there was a 1.2 percent increase in this respect for Handysize bulkers, this following a 4.8 percent reduction for 2012. Expenditure on crew costs remained unchanged over the 12 month period in the container ship sector, although operators of vessels of between 100 and 1,000 teu did record a 1.7 percent increase in such costs for 2013.

All Costs, at a glance ...

Expenditure on stores was down this time by 1.9 percent overall, compared to the fall of 2.1 percent in 2012. The biggest fall in such costs was the 5.5 percent recorded by VLCCs. For bulk carriers overall, stores costs fell by an average of 4.1 percent, while in the tanker and container ship sectors the overall reductions in costs were 2.1 percent and 3.4 percent respectively. The most significant increase in stores expenditure was that recorded by the operators of tankers in the 5,000-to-10,000 dwt range (6.0 percent).

There was an overall fall in repairs and maintenance costs of 0.4 percent, compared to the 1.9 percent reduction recorded for 2012. The most significant cost reduction here was that recorded for bulkers of between 10,000 and 20,000 dwt (7.2 percent), while the highest recorded increase was that for 40,000-to-50,000 dwt chemical tankers (3.6 percent). This reduced expenditure on repairs and maintenance is the sort of development one would expect to see at a difficult time for any industry, but one which will hopefully not mean that owners and operators will stop pursuing the sort of sound husbandry which competition and regulation demand.

The overall drop in costs of 0.3 percent recorded in respect of insurance compares to the 6.2 percent fall recorded for 2012, and was the lowest in this category for a number of years. The operators of all categories of bulkers paid less for their insurance in 2013 than they did in 2012, in the case of Handysize bulkers to the tune of 4.1 percent. In the tanker category, all but two types of vessel – 5,000-to-10,000 dwt tankers and Handysize product tankers – paid less than in 2012, while operators of 100-to-1,000 teu container ships paid 2.7 percent more in 2013 than in 2012. The fall in insurance costs in 2013 is significantly down on that for the previous year, suggesting that underwriters in the hull market are taking a harder line.

Expected cost increases for year ending 31 December 2015

Mean	Bulkers	Tankers	Container Ships	Offshore	Total
	%	%	%	%	%
Crew wages	2.7	2.6	2.6	2.7	2.6
Other crew	2.0	2.2	2.0	2.2	2.1
Lubricants	1.8	2.2	1.8	2.2	2.0
Stores	1.7	2.2	1.7	2.4	1.9
Spares	2.0	2.4	1.8	2.7	2.2
Repairs & maintenance	2.0	2.6	2.3	3.2	2.4
H&M insurance	1.4	1.9	2.1	2.5	1.8
P&I insurance	2.0	2.2	2.1	2.6	2.2
Management fees	1.2	1.7	1.4	2.1	1.5
Dry docking	1.8	2.5	2.3	2.9	2.2
Total costs	**2.8**	**2.9**	**3.0**	**3.5**	**2.9**

> One needn't be a rocket scientist, or even a naval architect, to appreciate that overtonnaging is a significant factor in depressing freight rates, which in turn impacts adversely on industry confidence. Despite increased scrapping, and despite the paucity of traditional bank finance, there are still too many ships on the market to carry the cargoes available. For as long as this is the case, freight rates will remain under pressure.

Crystal Ball

Looking ahead, vessel operating costs are thought likely to have risen by almost three percent in 2014, and are predicted to rise by the same margin in 2015, according to the Moore Stephens Future Operating Costs survey. Crew wages and repairs & maintenance are the cost categories deemed likely to increase most significantly, the former by 2.4 percent in 2014 and by 2.6 percent in 2015.

P&I insurance costs are expected to go up by 2.0 percent in 2014 and by 2.2 percent in 2015, this compared to the increases of 1.6 and 1.8 percent respectively predicted in respect of the cost of hull & machinery insurance. Drydocking costs are expected to rise by 2.1 percent in 2014 and by 2.2 percent in 2015, while expenditure on spares is expected to increase by 2.1 percent and by 2.2 percent over the same period. Increases of 1.7 percent and 2.0 percent respectively are also anticipated in the cost of lubricants in the two years under review. The cost of stores is expected to increase by 1.7 percent and 1.9 percent respectively for 2014 and 2015.

The three factors considered most likely to influence the level of vessel operating costs over the next 12 months were finance costs (20 percent), followed closely by competition (19 percent). Crew supply (18 percent) was in third place, followed by demand trends (17 percent) and labour costs (13 percent). Lastly, the cost of raw materials was cited by 11 percent of respondents as a factor that would account for an increase in operating costs.

Management fees were deemed likely to produce the lowest level of increases in both 2014 and 2015. There are those who argue that outsourcing management to an external provider can help to reduce operating costs. There is no definitive answer to this question. All that can be said with any certainty is that, the greater the number of services which are outsourced, the greater the amount of due diligence required.

In 2008, overall operating costs rose by 16 percent, so the level of increases anticipated for 2014 and 2015 are unlikely to panic serious industry players. But the cost of existing and impending regulation is a major cause for concern. Sulphur emissions regulations will encourage the development of more eco-friendly tonnage, but they come at a hefty price. Even that, however, may be small beer compared to achieving compliance with the BWT convention which is now very close to ratification.

Sensible owners with adequate funding are planning for the future by investing in eco-friendly ships and by weighing up the advantages of LNG propulsion. Such initiatives will bring long-term benefits but are likely to increase costs in the short term because new technology and associated research and development costs do not come cheap. On the plus side, oil and gas prices are falling, which should translate into savings for owners and operators.

Meanwhile, shipping continues to attract new money from both internal and external investors. Over the past twelve months or so we have started to see some of the banks rediscover their appetite for shipping. They are now re-entering a much-changed ship finance market, one in which private equity has invested significant amounts over the past two years, and is likely to invest more in the next couple. This is stake money that shipping, with a mortgage to pay and engines to feed, badly needs.

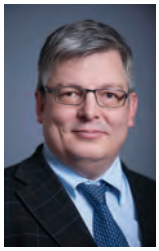
In summary, the projected increases in vessel operating costs for the next two years will be difficult for owners, operators and managers to absorb. The industry remains under pressure to manage and reduce such costs wherever possible, whilst making suitable budgetary provision for achieving forthcoming regulatory compliance. Revenues earned in the freight markets must ultimately be sufficient not only to cover operating costs but also to generate a reasonable return on investment, and shipping will need all the resilience and inventiveness at its disposal to improve net operating cashflow.

The Author

Richard Greiner is a partner at the Shipping Industry Group Moore Stephens in London.

Ethane Transport & Technology

The export of ethane will eventually happen, in concert with market conditions. When that happens, specialized tonnage will be needed to fill that growing market niche.



Patrick Janssens **William Sember**

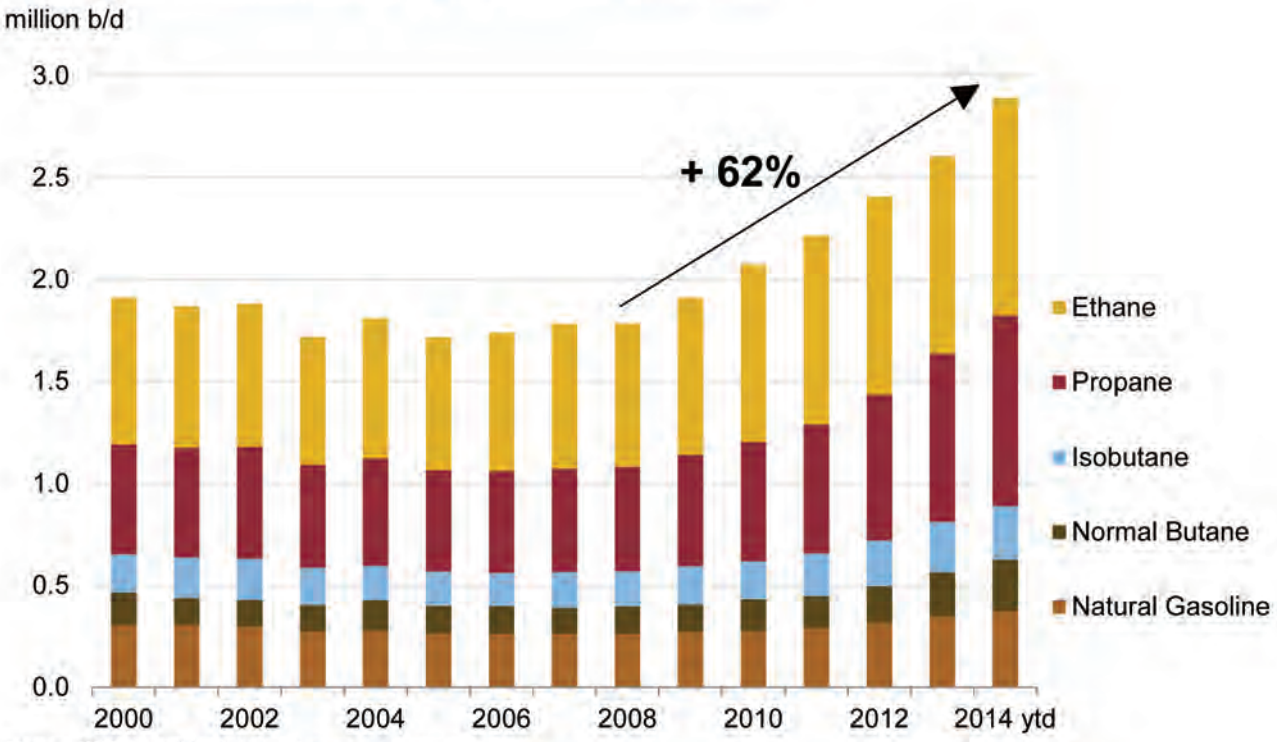
This past summer produced an order for the world's first very large ethane carrier (VLEC), shining the industry spotlight on a traditionally niche gas sector whose promise had grown to require a dedicated fleet of ships for intercontinental trade. Classed by ABS, the ships were ordered at Samsung Heavy Industries by India's largest private-sector enterprise, Reliance Industries, which is aiming to capture the export opportunities presented by the shale gas boom in the United States.

At the time of the order, the commodities sector had published many reports about how the U.S. shale boom was generating an abundant supply of comparatively cheap ethane, a byproduct of natural gas.

Exports were "imminent," according to Bentek Energy, an analytical offshoot of Platts, which recently forecast US ethane production to reach 2.5 million barrels per day by 2024, a volume that would see supply exceed demand in the U.S. Other forecasts were even more bullish.

However, since Reliance's July order for six 87,000m3 VLECs at Samsung, the price of oil has undergone a well-publicized decline, which has injected a degree of uncertainty into the market for natural gas liquids (NGL) such as ethane. That is not to say the ethane export market from the U.S. has seen an erosion of its potential; it has not. But the exact timing of when its potential will be realized has become less clear. Most analysts expect the price of oil to eventually rebound, but they differ on whether the present market conditions will last six months, a year, or beyond.

Figure 5. HGL production from U.S. gas processors, 2000—2014



Note: 2014 ytd includes January-August.

Source: U.S. Energy Information Administration, annual and monthly U.S. Natural Gas Plant Field Production data.

> Unlike LNG carriers that burn a portion of their cargo for fuel, burning ethane is presently not permitted by the IGC Code. However, the new gas code that will enter into force in 2016 contains provisions for considering alternative low flash-point fuels. At present, any ethane-as-fuel option for commercial shipping would have to be explicitly approved by the flag state, and would typically need to be accompanied by a comprehensive risk assessment carried out under the provisions of the new IGC.

NGL's

NGL's have evolved within a few short years from being seen as secondary byproducts of gas production to valuable co-products that can drive the economics that dictate gas-production growth.

This is particularly so of 'wet' gas, natural gas that has a higher level of NGLs present; typically, wet gas can provide as much as 10 times the amount of recoverable liquids than comparable volumes of 'dry' gas. The additional revenue potential has forecasters predicting that liquid-rich fields will help to determine the natural gas production levels in the U.S., primarily because the cost of gas production in liquids-rich areas is significantly lower -- and the profits significantly higher -- than in areas that are drilled solely for dry gas.

Shale gas production from areas such as Eagle Ford Shale, in Texas, is rich in NGLs – products that, in addition to ethane, include propane, butane and pentanes. These products are separated from the gas at a processing plant. A typical NGL barrel consists of 40-45% ethane, 25-30% propane, 5-10% normal butane, 10% isobutene and 10-15% pentanes. Each product has its own market. But ethane is mainly used by the petrochemical industry as a feedstock for ethylene (naphtha can also be used, but it is much more expensive).

According to the International Energy Agency, in the first eight months of this year, the United State's production of Hydrocarbon Gas Liquids reached 3.65 million barrels per day (1.07mbpd of which was ethane), putting it among the very top non-OPEC liquids producers. Declining oil prices may have since slowed fracking activities, but the industrial value of ethane to petrochemical manufacturers remains high. The challenge is in transporting it, particularly overseas, in volumes that make economic sense. At its core, that challenge is a technical one.

Transporting Ethane

Because ethane is relatively difficult to liquefy and transport in bulk, it has traditionally not been traded in global markets, finding a home instead in facilities adjacent to where it is processed.

Ethane must be refrigerated to a low temperature, compressed to a high pressure, or a combination of both to be transported by sea. These factors limit the types of vessels that are capable of transporting the product in its liquid state.

To liquefy petroleum gases for maritime transport their temperatures need to be lowered; lighter gases require lower temperatures. For example, a heavier gas such as Butane is cooled to just below 0^{o} C, propane is cooled to about -50^{o} C, ethane to about -90^{o} C and methane all the way down to -162^{o} C.

The more the temperature of the gas has to be lowered to reach its liquid state, the greater the number of technical challenges that arise to cool and transport it, making ethane one of the more technically difficult gasses to ship.

At present, ethane-capable ships suitable for long-haul transport are in very short supply, and none of those currently operating would offer the kind of economies of scale sought by overseas traders.

Of the existing gas-carrying fleet, only ethylene carriers are equipped to transport ethane; generally, these types of ships are equipped with Type 'C', semi-pressurized containment systems.

Because ethane has historically been delivered in relatively small parcels, many of that class of ships are relatively small by today's gas-ship standards. But they remain in demand: about 70% of the existing fleet of 160-odd ethylene-capable carriers offers a cargo capacity of 10,000 cubic meters or less. This, however, puts economic constraints on multinational petrochemical manufacturers that would like to move ethane on the long-haul trades, such as those from the U.S. to Asia or Europe.

Typically, the world's fleet of Very Large Gas Carriers, those

with cargo-carrying capacity that exceeds 75,000 cubic meters that are typically designed to transport LPG, feature single-hull, Type 'A' prismatic tanks that are fully refrigerated and utilize the ships' hulls as secondary barriers to contain any cargo leak.

However, regulations don't allow that type of design to be used for the carriage of cargoes (such as ethane) that need to be transported at temperatures below -55^{o} C. Accordingly, the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code) generally requires ethane to be transported in a double-hulled vessel when adopting prismatic tanks.

The present options for ethane containment systems include: Pressure vessels (cylindrical, bi-lobe or tri-lobe type "C" tanks), membrane tanks (as used for many LNG carriers), spherical tanks, prismatic tanks with a partial secondary barrier, or prismatic tanks with a full secondary barrier that is independent from the ship's hull structure. Several versions of the latter category are presently under development in northern Europe.

The ethane-carrying fleet is showing the potential for incremental growth, both in the number of ships and their unit carrying capacities: there are more than 40 ethylene-capable ships with cargo capacities in the 10,000 to 36,000 cubic meter range presently on order. But these ships will not offer the same potential economies of scale that could be available to VLECs exporting U.S. ethane. As of Feb 1, the only ships on order above 70,000 cubic meters are those classed by ABS and being built by Samsung.

ABS was awarded the class contract for a series of four 35,000 cubic meter ethane/ethylene gas-ships to be built at China's Jiangnan Shipyard for the UK-based Navigator Gas. These LNG-fuelled ships, which will feature bi-lobe type cargo systems, will be the largest gas carriers capable of carrying ethane upon their delivery.

The VLECs under construction for Reliance in Korea will feature a GTT Mark III membrane system, insulated with reinforced polyurethane foam, similar the Mark III membrane system used for LNG carriers. From a design and construction perspective, the VLECs are a rather straight-forward application of existing technologies. The cargo-containment systems are generally based on existing LNG systems presently being used, and the reliquefaction equipment and processes are likewise based on existing ethylene carrier designs.

Where it becomes a bit more complex is if a shipowner or operator also wants their new ships to burn the ethane cargo as fuel. Unlike LNG carriers that burn a portion of their cargo for fuel, burning ethane is presently not permitted by the IGC Code. However, the new gas code that will enter into force in 2016 contains provisions for considering alternative low flash-point fuels. At present, any ethane-as-fuel option for commercial shipping would have to be explicitly approved by the flag state, and would typically need to be accompanied by a comprehensive risk assessment carried out under the provisions of the new IGC.

A Type C Tank being installed

The engine manufacturer MAN Diesel is developing their ME-GI engines to burn ethane and recently have taken the first orders for ethane-burning engines, with first production units in 2016.

Logistics & Other Challenges

Another present constraint on the potential for ethane exports from the U.S. is domestic production capacity; nearly all the capacity of US chemical companies to process ethane is being used, delaying the development of long-term demand.

Some relief could come from proposed ethane export terminals slated for the Houston Ship Channel and near Marcus Hook, Pennsylvania, which are designed to provide an annual export capacity of more than 100 million barrels when completed. Enterprise Product Partners is behind the Texas endeavor, a fully refrigerated ethane export facility designed to have an aggregate loading rate of up to 240,000 barrels per day. It is expected to begin operations in the third quarter of 2016.

With individual VLECs costing in excess of US$100 million per unit, speculative ordering is unlikely in the present market. Even though ethane gas is a potentially promising niche sector, most owners are likely to seek to lessen the risk by having confirmed export contracts, at least in the short term.

Patrick Janssens is Vice President for Global Gas Solutions at ABS; **William Sember** is a Senior Consultant Global Gas Development at ABS.

LNG tank for ships with cradle

No Risk in a Curious Career Path

Identifying, understanding and mitigating risk are all at the heart of PJ Jacquelin's unique career. Where he came from first has made all the difference.

By Joseph Keefe

IOWA Chain Inspection

PJ Jacquelin joined Barney and Barney – a Marsh & McLennan Agency LLC Company since February 2014 – in 2012 and today leads their Global Marine Practice Group. With more than 25 years experience in the maritime industry, he is perhaps uniquely qualified for that position, with a career trajectory that few can duplicate. You might say that salt water runs through his veins, having grown up in Hawaii, competitively sailing and then, attending the California Maritime Academy. After that, armed with a Bachelor of Science degree in Marine Transportation and an Unlimited 3rd Mate's license, he spent almost two years at sea as a deck officer aboard a variety of tankers, containerships, RoRos, tugs and crew boats.

Jacquelin's career took a curious turn in 2004 when he accepted a commission in the U.S. Coast Guard and eventually served as a Marine Inspector, Command Duty Officer and Public Affairs Officer. There, he inspected hundreds 500 commercial vessels, ensuring compliance with regulations and treaties. Convinced he could do more to help companies in the private sector, he left the Coast Guard to become a regulatory consultant, during which time he worked with spill response contractors, terminals, port authorizes, boat builders and vessel operators to help reduce costs through improving operational efficiencies and reducing losses.

Since then, he has headed up the U.S. West Coast Ocean Marine Risk Control Department for another insurance company before landing his current role at Barney and Barney. But, there is more to risk than just regulations. Perhaps this is why Jacquelin's deep and varied background serves him so well today.

A Day in the Life

A typical day in the office can consist of overseeing claims, preparing presentations, meeting with service teams and communicating with his carrier partners on any number of issues. On the other hand, a day in the field can vary greatly but it's always about seeing operations first hand in order to get the full picture. Jacquelin, who is on call 24/7 and regularly spends as much as 70 percent of his time in the field, explains, "Given the complexity our industry and the fact that every client has different needs you have to see it for yourself. I can't properly serve my clients from behind an office door."

According to Jacquelin, time in the field is well spent. "By getting to know our client's operations, we are able to offer effective and common sense suggestions and recommendations that help to minimize accidents, reduce claims and ultimately save money. Beyond this, by reducing the frequency and severity of accidents, clients benefit from reduced premiums on a long term basis. In turn, carrier partners can be more comfortable underwriting clients at lower rates when they know a proactive effort is being made to improve performance. And, says, Jacquelin, the effort produces improved regulatory compliance without even trying. He adds, "This makes life easier for everyone both financially and operationally."

Jacquelin ultimately becomes 'a part of the client's risk management team.' For example, says Jacquelin, "One of my client's vessels was badly damaged during a recent New Year's Eve storm and even though I was taking some time off, by being in touch we were able to get the claims process started right away. It also enabled me to be the first person to assess the damage in order to help the carrier's claims team and USCG inspectors get their work done."

A Curious Path

Jacqueline has literally done it all. This includes time spent in the Coast Guard as a marine inspector, at sea commercially and with MSC PAC, as a marine surveyor, a college professor and now, heavily invested in the insurance side of the game. One aspect of that progression – the decision to join the Coast Guard after having already sailed commercially, is an interesting one. Jacquelin's decision to join the Coast Guard, influenced in part by the events of 9/11, was also a function of having dealt with the Coast Guard on the mariner side.

Also having come to a realization that a long term seagoing career wasn't the best path for him, he explains, "I noticed that there weren't that many marine inspectors who truly understood the industry so I liked the idea of being able to bring some real world insight and knowledge to the main regulator of our industry." Having a grandfather who had spent time as a Coast Guard officer during WWII also swayed his decision. "I decided that I wanted to carry on the family tradition of service in the Coast Guard while trying to give back to our industry," says Jacquelin. Ultimately, however, that decision would also yield dividends for a young mariner who would eventually end up preventing what the Coast Guard regulates on a daily basis: risk.

While there were many key 'take aways' that Jacquelin got from years in the Coast Guard, he came to understand that professional mariners and commercial operations managers need to continually self-police, to re-invest and do the right thing, which sometimes costs money. As someone who can see both sides of the equation, Jacquelin insists, "All of us in the industry have had moments of extreme frustration with the Coast Guard because we feel that they don't understand what we do and that we are in business to be profitable. And I would say that more times than not, we are correct in that belief. I've also seen it from the other side where the Coast Guard can get extremely frustrated at us for some of the decisions that we make. Sometimes those decisions lead to operations that are unsafe. From their perspective, they are also correct and in the end what results is an adversarial relationship that takes away from our bottom line and 'forces' them to be the bad guys."

All of that said, and while Jacquelin values his Coast Guard experience, he also feels that his work today is influenced by the sum total of his resume. "Having sailed, regulated and insured, you have a very unique understating of your client's day-to-day operations and you can better cater to their needs by providing insight, resources and guidance to prevent incidents and costly claims. One of the largest challenges a broker can face in the marine industry is being able to properly represent their clients operations and exposures to insurance carriers. Having done all of the things I have, the underwriters I work with know that I know what I'm talking about and clients know that their money is being responsibly spent," Jacquelin told ***MarPro*** in February.

On the Waterfront

Properly managing risk involves having an accurate understanding of what clients deal with on a daily basis and knowing what they are talking about. Jacquelin adds, "One of the most common comments that I hear from CEOs, CFOs and controllers that their broker doesn't understand what their company does. The first thing we do is spend time at the operation to really get to know it. If it's a shipyard we spend at least a day walking the facility, watching the work and just observing. If it's a vessel operator we go through each vessel, get underway and again observe. I take hundreds of pictures." From all of that, a narrative is submitted to underwriting along with a standard application. By doing it this way, underwriting doesn't have to make any assumptions about what's going on and they can better underwrite the risk at a cost savings to the client."

Jacquelin's job involves risk: identifying it, quantifying it and of course, eliminating or mitigating it. How that role is fulfilled depends on the client. In practice, some clients have complex and effective risk management programs in place. In those cases, Jacquelin and his team work more towards quantifying risk, in order to lower costs. Other clients, however,

Jacquelin – who wears many hats – recently volunteered to skipper an 80 foot research vessel from LA to the California Maritime Academy after it had been transferred from another state agency.

> "Having sailed, regulated and insured, you have a very unique understating of your client's day-to-day operations and you can better cater to their needs by providing insight, resources and guidance to prevent incidents and costly claims. One of the largest challenges a broker can face in the marine industry is being able to properly represent their clients operations and exposures to insurance carriers. Having done all of the things I have, the underwriters I work with know that I know what I'm talking about and clients know that their money is being responsibly spent."
>
> – PJ Jacquelin, Client Executive, Barney and Barney

need expertise to help them identify risks in order to develop or improve their risk management program.

For Jacquelin, and reflecting his broad experience, there are two schools of thought when it comes to risk management. The first involves preventing accidents and incidents from occurring in the first place. The second is the administrative approach that ensures that the proper coverage is purchased, contracts are properly worded and appropriate indemnifications are in place. Jacquelin explains, "You have to approach it from both directions. While we can do everything right operationally, unforeseen accidents happen, so the correct coverage and contracts have to be in place."

One of the biggest benefits that this job description brings to the table is that, as outsiders, every operation is viewed with a fresh set of eyes. For example, misunderstanding about a client's operations can lead underwriters to make assumptions and either declining to quote an account or charging for exposures that simply don't exist. But, it takes experience to properly represent the client's operations and then help them to get the coverage they need at the most favorable terms.

A different kind of maritime experience: PJ Jacquelin and teammates racing on a Farr 40 in the 2011 North American Championships in Long Beach, CA.

Before You Go

For those interested in a career on the marine insurance side of the ledger, Jacquelin advises candidates to first get some real life experience in the industry and only then look for an opportunity with a major carrier. Being able to accurately translate the nuances between vessel operators and carriers will, he says, fill a need in the industry that is currently experiencing a void. He adds simply, "When I tell a tug company owner that I can operate one of their boats, they know that they're with a broker that understands them and knows how to lookout for their best interest."

Yacht racer, marine surveyor, Coast Guard veteran, college professor and professional mariner: it's not your typical career path and perhaps, not too many will ever get to duplicate that set of credentials. Nevertheless, and at its most basic level, it is experience that counts. PJ Jacquelin has that, and a whole lot more.

**All images courtesy PJ Jacquelin*

Tamara Ellis

Director, Talent Acquisition – Carnival Cruise Line

By Joseph Keefe

In the maritime industry, there is probably no other oceangoing sector that has the need for such a diverse set of skill sets, multicultural input and customer driven employees than that required by today's passenger cruise vessel industry. That's where Tamara Ellis, Carnival Cruise Line's Director of Talent Acquisition, comes in. In this role, she is responsible for all aspects of shoreside talent acquisition for Carnival Cruise Lines and Carnival Corporation & plc. Specifically, she serves as a strategic partner to the organization, its leaders and the HR team, overseeing recruiting and onboarding, external agencies/vendors, contract labor, careers site and related systems and policies.

Coordinating all of that – as well as collaborating to ensure that strategies are aligned with overall organizational objectives – is no small task. Carnival Cruise Lines is a British-American owned cruise line, based in Doral, Florida. Originally an independent company founded in 1972 by Ted Arison, the company is now one of ten cruise ship brands owned and operated by Carnival Corporation & plc. The company has the largest fleet in the group, with 24 vessels currently in operation that account for 21.1% of the worldwide market share. And with that reality, the need for quality talent, and plenty of it, comes, as well.

Previously the Managing Director, Americas for Faststream Recruitment Group, Ellis brings a diverse skill set and an eye for matching the right individual to the right assignment. With other human resources and recruiting experiences along the way, she brings 20 years of experience – much of that spent in recruitment and talent acquisition – to Carnival. A Bachelor of Arts in Psychology and a proficiency in Conversational Spanish augment those work experiences, combining to give Carnival the edge in identifying and attracting the right candidates.

Carnival's People

Ellis told ***MarPro*** in February, "We are always looking for top talent for all the areas of the business. That having been said; we also seek future leaders. The business is changing and evolving and so that lends itself to a wide scope of searches, both in the operations of the business and emerging talent areas and so it is exciting to be a part of this direction." She added, "We look for people who will bring value, are passionate in what they do, who challenge themselves and seek continuous improvement. We are unique in that what we do is hugely dynamic. We operate ships, but not just any ships, the FUN ships. So there is the element of fun in what we do."

The Carnival recruiting strategy is aligned with corporate

goals. Ellis is therefore tasked with regularly assessing deliveries against those goals, and realigning strategy as needed. She explained, “Carnival’s brand is widely recognized and so attracting talented people is not difficult. Further, the company has a history and is supportive of promoting from within, as well as interbrand, shipboard transfers and fostering ‘home grown’ talent.” She points to a competitive advantage for Carnival that takes its roots in an attractive corporate culture that provides exciting career opportunities. All of that, she says, adds up to a robust EVP (employee value proposition). Hiring practices at Carnival take on many forms, including but not limited to participation in industry events, specialized trade shows, social media, job fairs; working with universities, veterans groups, and other relevant organizations as part of the overall strategy.

Carnival’s talent acquisition strategy, according to Ellis, involves four basic principles that call for her to Align, Understand, Differentiate and Deliver. She explains, “Talent Acquisition is about proactively building a candidate pipeline regardless of need, it is about strengthening the organization’s ability to identify and attract talent which will be most successful in helping the company achieve its goals.”

Ellis defines those four pillars by saying, “We align through ensuring our talent strategies are designed in conjunction with short and long term objectives. We understand by analyzing needs, having a fact based understanding of the talent market and the supply and demand of that talent, both externally and within the organization. We differentiate ourselves by designing solutions that drive the talent strategy toward those company objectives.” Lastly, she says, Carnival ‘delivers’ by using all available methods to bring top talent to the organization.

Recruitment 101

For Tamara Ellis, recruitment wasn’t necessarily a career goal from the outset. She says, “My degree was in Psychology. I have worked mostly in sales, or service related roles. After several entrepreneurial ventures, I fell into recruitment, per se, and found it to be a very natural fit. I consider my background to be a sales/leadership background. Recruiting is about listening and understanding both business drivers, but also a candidate’s driver. It is about “selling” opportunities and potential, with integrity, of course. Combining the sales background with my entrepreneurial spirit I gravitated to-

wards leadership and do enjoy leading and managing a team."

Ellis currently leads a team of 12 that consists of a recruiting manager, recruiters, recruiting coordinators, a recruiting operations supervisor, and a vendor and contractor specialist. Divided between Carnival's Corporate Miami location and Miramar, FL office, Carnival recruiters rarely sit still. Recently, they visited Duke University, UNC Chapel Hill and many other top flight southeast schools, looking for just the right talent. Those efforts are part of recruiting efforts for a two-year Rotational Program, designed to attract future high performers, new graduates from top schools with an interest in analysis. Ellis explained, "The program allows the students to work in three verticals of the business over a period of two years. They have an opportunity to work in Finance, Marine Operations, Hotel Operations, Revenue Management and/or Commercial Planning. We are thrilled to be offering such an exciting opportunity."

Ellis reports that Carnival sees an ongoing need for analysts in all areas including finance, IT, and guest operations. And, she says, finding top talent in the emerging technology space can be challenging in today's market. She continues, "Naturally, as a ship operator, there are ongoing needs in technical operations around particular initiatives, which might be green technology, fuel efficiency as well as any roles tied to health, environment, safety and security."

We asked Ellis if there were big differences between her past role as Managing Director, Americas at Faststream Recruitment Group and her current position. She replied, "There are some similarities. The business, like clients, expects us to deliver the best matched talent. I view the hiring managers as internal clients and treat our roles as consultative and service oriented. But, corporate recruiting tends to be more strategic. I am regularly involved in recruitment strategy meetings. Because my role here oversees all shoreside recruiting, it is not focused on the marine sector only (as it was in Faststream), so the methods and resources used are much more are widely varied."

In the cruise business, perhaps more so than any other, the multicultural aspect of team building is a critical aspect of human resources. A global business naturally attracts global talent. Ellis adds, "We often transfer people from our ships, from sister brands, and so on. Therefore, we have a diverse workforce. I do believe that attracting a talented and diverse workforce is a key to any company's success. We certainly strive to ensure our practices align with that."

Beyond this, Tamara's responsibilities at Carnival are now much broader. These include the university recruiting program, a global relocation program, immigration management, a careers website, and training programs for her team. "I am much more involved in the operations. As part of a larger HR department, I work collaboratively and am mindful that we are part of a greater group and delivering success is a team effort. Naturally, that is very different than the agency side, where it is really laser focused on one task."

That's not to say the Faststream experience wasn't valuable – it was. Ellis says, "The main 'take away' was the understanding and knowledge of Marine Operations. Having come to Carnival with that understanding, and knowing how to work with the population certainly has been helpful, particularly because ship operations and marine technical operations is a large part of the business, as we are a ship operator." Nevertheless, the marine side of the business is just one aspect of what Ellis deals with on a daily basis. And, she had to hit the ground running.

When Ellis first came to Carnival, central HR was a fairly new function. That was just one of many challenges, however. She explains, "The recruitment team had mostly left, and so my initial obligation was to hire right, build a team, and help shape the work flow, while at the same time earn and build trust from the business. This is not dissimilar to how I had to regain clients trust and rebuild relationship when I first arrived at Faststream, following a major reorganization in the Americas. Today, I am extremely proud of my teams measured success."

Earning the Business

Sounding much more like an entrepreneur than perhaps a corporate recruiting leader, Ellis isn't one to sit back on her laurels. "I have become accustomed to feeling wholly accountable for mine and my team's success. For example, I have concern for the way we present candidates to hiring managers, treating our communications with internal hiring managers as if we have to 'earn' their business. In corporate recruiting, my sense is that this is not always the case. Therefore, my team pre-screens, pre-qualifies, asks agency type questions and sends summaries of why the candidate is a good fit for the position, for the department, for the manager, for the company and the culture, she says, adding quickly, "I always say the devil is in the details, and I attribute that to my background."

For Ellis, the job is a natural fit. "I enjoy people, I enjoy hearing their stories, understanding why they are where they are, how they got there and where they are headed. It was a satisfying to be placing someone in a role, getting someone their dream job, changing lives. It feels good." And that does sound like fun.

Carnival Careers Website:
[**http://www.carnival.com/careers.aspx**]

All images courtesy Carnival Cruise Line

A Different Kind of Cruise Career

Mass. Maritime's Marine Safety and Environmental Protection graduates are on board and on guard in the Cruise industry.

By Joseph Keefe

Mass. Maritime MSEP graduate Richard Bryan goes about his many duties on board a Celebrity cruise ship.

In the air cargo industry, the pilots who drive the planes have a saying: "*Freight doesn't complain.*" On the other side of the modal spectrum, however, today's cruise ship industry is a multi-billion dollar enterprise that provides fine dining, spas, concerts and a myriad of recreational adventures. And, customers can and do complain if things aren't "just right." Balancing the needs of those demanding passengers aboard today's cruise liners against the need to protect the environment can, therefore, be a tall order. Environmental Officers, especially trained for the task, are the ticket to making that happen. One school, the Massachusetts Maritime Academy, has been producing this kind of talent since the early 1990's.

Celebrity Cruises, and its sister brands are in the serious business of providing entertainment and fun. Along with that goes the commitment to protect and preserve environmental resources and prevent pollution. To that end, Environmental Officers are employed on every one of Celebrity's vessels. And, in what has become somewhat of a tradition for the well-known cruise provider, many of those environmental officers hail from Massachusetts Maritime Academy's Marine Safety and Environmental Protection (MSEP) program.

What Makes an Environmental Officer?

In 2009, 15 of Royal Caribbean Cruise Lines (RCCL) environmental officers hailed from MMA. Although it varies from year to year, as many as three are hired each June. Richard Bryan, a 2014 MMA MSEP graduate is one of them. Bryan told ***MarPro*** in February, "I graduated June of 2014 and signed on my first ship at the end of July after a month of training in Miami."

The MSEP major at Mass. Maritime, originally formulated (in part) as a response to the need for those skills in the wake of the *Exxon Valdez* spill, has since branched out into so many more places. And the cruise industry has been a prime benefactor. Before that can happen, MSEP students study subjects that include environmental science and law, environmental health and risk, hazardous materials management, waste management, personal protective equipment, oceanography, and conservation biology. Book learning is augmented on a sea term on board the academy's training ship as well as cooperative programs with cruise outfits. MMA has, over time, had co-op opportunities with Prestige Cruise Line and employer relationships with Carnival and Princess Cruises.

Image: Massachusetts Maritime Academy

Cadet Jamison Walz, MSEP major, on a Carnival Cruise Ship in the winter of 2011.

Because working as an Environmental Officer involves interaction with a wide variety of nationalities and cultures, good communication skills are also paramount. MSEP students at Mass. Maritime present their co-op projects to faculty and other cadets as part of their training. The regimentation of a quasi-military environment also helps to instill a certain amount of discipline and leadership skills, something many professionals don't learn until it is far too late.

The Academy has two exchange programs that MSEP students can participate in. These include the Shanghai Maritime University semester-long program where students study and live in China with Chinese students, as well as a month-long co-op program at the International Maritime University of Panama. Students live and study with Panamian cadets and learn about the businesses along the canal. All of these opportunities serve MSEP students well as they prepare for the next step.

On the Job

Francis Veale, an environmental attorney and now Associate Professor at the Massachusetts Maritime Academy, teaches

both environmental law and environmental science to the cadets. Veale, formerly with Texas Instruments, says of the program, "These are unique graduates who take applied science and engineering and put it use in the real world."

MSEP graduates often go out into the workplace and work in marine spill response, environmental cleanup companies, the U.S. Coast Guard, NOAA and other government agencies as health and safety officers. Bryan, for example, was offered other positions that ranged from management positions for environmental companies to working as an on-site Safety Officer for construction projects. But, he said, he already knew exactly what he wanted to do.

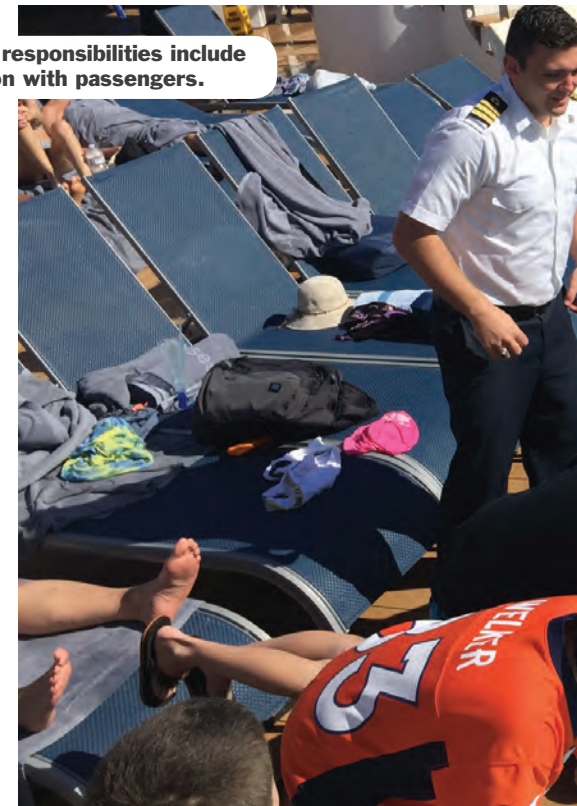
"While applying to MMA I learned of the Environmental program they offered and immediately took interest. Once on Sea Term, I was able to see the things I enjoyed and those that I didn't care for," said Bryan, continuing, "At first, I wasn't sold on the major, but while on board the training ship, we were able to visit an MMA Graduate who was working on board a RCCL Ship that docked with us at the time. After talking to him and seeing the job and what it entitled, I knew the MSEP program was exactly what I wanted to do."

Environmental officers are non-watchstanding, senior officers who report directly to the Master, and have the equivalent rank of First Officer. They also serve as the front line for environmental protection and awareness aboard the vessel. The days are long and filled with a longer list of duties that include enforcement of environmental policies and procedures, training the crew (as many as 60 nationalities can be represented across an entire fleet), and keeping logs of every environmental aspect of the ship.

Celebrity's Richard Bryan explains, "On board, I work directly for the Captain. I am considered Senior Management and a Department head. I work closely with the Chief Engineer and the Second in Command (Staff Captain) and mostly deal directly with other heads of departments and other senior management." It is a lot for anyone to take in, never mind someone just out of college.

Celebrity Environmental officers typically work 4 months on and 2 months off. And, the opportunity to extend one's contract is always there. Bryan has taken advantage of that, more than once. The list of duties is daunting and Bryan says that it can change, depending on the day of the week and/or where the vessel is operating. "One of my biggest responsibilities on board is managing and finding the best methods to dispose of the garbage – finding vendors that are properly recycling and disposing of waste and then overseeing the offloading operation, Bryan said, adding, "I check all appropriate environmental documentation and work with the bridge officers on a daily basis to make sure all logs pertaining to the environment are correctly filled out and completed. And then, I meet with the Master to discuss the different things going on around the ship. Beyond that, I work with each department throughout the day, helping to make sure everything is in compliance."

Bryan also serves as the adviser for all chemical management and is responsible for the daily testing of the ship' Advanced Wastewater Purification System. "Day to day, there is always a new challenge but it's always exciting and rewarding, we have the flexibility to reach out and interact with different countries and help give back to the communities. For instance, on board the Celebrity Summit, we have started clothes and shoes drives to donate to the islands we are going to, and have coordinated educational outreaches to Schools in St. Lucia. I give presentations to children from the island, and schedule beach cleanups to help out the communities we are visiting."



Richard Bryan's many responsibilities include frequent interaction with passengers.

Along with the goodwill, however, this is serious business. Bryan is on call 24/7 to advise any licensed officer on regulations and protocol. Moreover, he reports, "I am the last set of eyes on all important Environmental documents before the Master is signing them. This includes the Oil Record Book, Sewage/ Greywater Book, and Garbage Record Book." In an age where the federal government likes to invoke the Migratory Bird Act when prosecuting for environmental crimes, it is critical that ships stay in compliance with company and international regulations. That's especially true in the cruise industry, where every customer is likely to be carrying a video camera on their way to the pool. To that end, says Bryan, "The licensed officers and I always work close together and always have a great working relationship. We all work as a team."

Graduates such as Bryan only strengthen the relationship between the Academy and Celebrity Cruises, Azamara Cruises and RCCL. As cruise lines and hiring managers get familiar with and comfortable with the product (people) being produced by the academy, they naturally come back for more. The alumni network in the cruise industry also helps, as prospective environmental candidates can and do turn to graduates already on board these vessels. ADM Richard Gurnon, the Academy's President, said from the program's outset, "The cruise industry has been a great fit and a significant beneficiary of MSEP graduates' unique skill sets. These alumni have helped make their fleet excellent examples of "green ships."

Stepping Out: the New Environmental Officer

The new Environmental Officer, stepping into his or her first billet, can expect to earn as much as $60,000 annually. There is a price for that. Working seven days a week and always being on call can take its toll, but Richard Bryan says that the rewards go deeper than pay, explaining, "I have made great friends from all over the world. And, I've been to over 50 different ports and seen things that most people don't get to see in a lifetime. The Job is rewarding and enriching, I am always learning new things and experiencing new situations that not only progress my professional career, but improve me as a person." Arguably, you can't ask for much more from any job. And in this case, when it comes to Mass. Maritime MSEP graduates, the cruise lines get far more than they pay for.

Images: Richard Bryan

The Human Element of Ship Management

The best third party ship managers employ technology, good business practices, economies of scale and a customized approach for each client. None of that will succeed without first addressing the human element of the equation.

By Joseph Keefe

Ship managers Crowley Maritime, Thome and Bibby Ship management companies all manage tonnage for others, in sometimes dissimilar sectors and different regions and world trades. Those differences set the three groups apart in terms of the skill sets necessary to manage different classes and types of ships. What brings them all together is a common belief that the human element of ship management is a critical piece of the equation. As it turns out, it may actually be the most important.

Crowley: at home and abroad

Privately held Crowley Maritime's global ship management team has been on a roll of late, with several notable awards in the ship management arena. A significant award from the U.S. Navy's Military Sealift Command brought a fleet of seven T-AGOS/T-AGM vessels into the Crowley fold in December. Todd Busch, Crowley senior vice president said of the award, "The very nature of the T-AGOS/T-AGM missions demand sophisticated top management solutions and talented crews that Crowley offers." The award creates job opportunities for existing crew members with experience on these types of vessels, as well as shore side positions, such as engineers and contracting professionals.

Closely following that award was the February 2015 news that Crowley Accord Management Pvt. Ltd., the international ship management venture managed globally by Crowley Maritime Corp.'s ship management group, was awarded full technical management contracts for five new tankers. These tankers will be joined by three more, bringing Crowley's international ship management fleet to more than 70. Best known locally as one of the nation's largest Jones Act operators and employers, Crowley's reach extends well beyond the Americas.

"Crowley Accord draws on its pool of experienced resources, which are at its disposal both ashore and afloat," said Sanjay Shesh, managing director, Crowley Accord. "We utilize proven systems based on internationally recognized quality management principles and have the flexibility to meet all owners' needs for periodic technical and accounting reports – all things our new customers indicated were of importance to them."

The Crowley Accord acquisition, which took place in April 2014, immediately increased the size and scope of Crowley's technical ship management group and supported the company's expansion into the international ship management market with a foreign crewing presence. The acquisition also made Crowley a rare U.S. company – one that provides third-party international crewing and technical ship management. Today, Crowley owns 86 vessels and manages 75 vessels.

According to Mike Golonka, vice president, ship management

for Crowley, at the top of the list for qualities that a ship owner should look for when shopping for a ship management company is the search for another ship owner. He adds, "The best ship management companies are usually those who also own and manage their own fleets." Also on that list are transparent and open communications with principals and, of course, a safety-oriented manager who will not only help to keep employees and property safe, but will also help to reduce claims and costs.

According to Golonka, the decision to outsource is typically financially driven. In most cases, outsourcing ship management services means that the owner can conduct business at a fraction of the cost, primarily due to the reduction in in-house staff and resources. He explains,

"Another factor that helps to drive down the cost is the ship manager's economies of scale, gained from the sheer volume of ships managed. As such, services and equipment are often acquired at cheaper bulk rates – savings that a transparent ship management company will pass on to the customer."

Touting Crowley's 120 years of varied experience, Golonka offers that Crowley is able to bring expertise to many different areas of operations and sectors – a benefit few others can offer. To ensure efficiency with all of this in-house expertise, Crowley dedicates commercial managers and a specialized staff to each customer, therefore offering tailored ship management services across nearly any sector.

In the case of Crowley, however, it is the attention given to the quality of its seafarers that may be their strongest suit. Although most of the hires in the Crowley managed fleet are direct referrals from unions, when they do recruit externally, they look for people who are a good fit culturally and want to find a place they can grow their career. Golonka adds, "One of the advantages of our diverse ship management operations is that we can hire individuals who want to work in a variety of fleets and gain a breadth of knowledge that will help them in their advancement. Alternatively, for the individuals who do prefer to 'homestead' with a specific fleet, and we can also offer this opportunity and promote from within."

At Crowley, however, the offer of a job doesn't constitute the final hurdle to walking up the gangway. "Our most critical and innovative vetting element is our Navigation Assessment Program, which requires all deck officers to complete a simulator assessment before they stand a navigation watch," says Golonka, adding "Other post-offer vettings include physicals, drug and alcohol testing, and DOT-required previous employer checks."

The final piece of the process, says Golonka, involves establishing clearly understood, high-quality operating procedures leave little room for interpretation and higher levels of consistency from ship to ship. As a bonus, high-quality ship management attracts and can help keep the most talented mariners, which often translates into even lower claim costs and proper maintenance on the vessel.

Thome Group

Both Thome and Crowley manage ships and are considered quality operators in their chosen sectors. Where they diverge in terms of business models is that Thome prefers to concentrate strictly on providing third party service. Thome's Ashish Malik, Deputy Chief Operating Officer, Tanker Division, explained, "Ship management is a core competence that we have focused on and would like to continuously improve on, further strengthening our systems and procedures in order that these are also adaptable to accommodate the ever changing requirements of the industry." He adds, "Owning vessels would involve a lot of focus on the commercial aspects of running the owned vessels and may lead to dilution of the focus on the continuous improvement of ship management capabilities."

Like Crowley, Thome values integrity and transparency with its principals, but also insists that profitability varies inversely with the cost of operations. Malik told ***MarPro*** in February, "In a competitive market, the normal OPEX, as budgeted, may not vary much between one established ship manager and the other. However, the quality of ship management and crew competence influences the safety of operations, and consequently plays the essential role in prevention of incidents. That eventually makes a difference in the costs of operating the vessel."

There are many reasons to outsource ship management. The Thome model calls for a good partnership between shipowners and the ship manager, which in turn can allow for costs to be reduced and operations improved, capitalizing on the expertise, experience and economies of scale (offering lower fixed cost / ship) that a big ship management company is able to offer. Thome's Malik adds, "This allows the shipowner to focus more on the commercial aspects."

Beyond all that, the shipowner gets to share the experience and learning from other vessels being managed by the ship manager, and it here that the quality of the crewing process is important. In fact, Thome manages more than one type of vessel. Malik says that different types of vessels involve various common requirements, while there are also various aspects for which the requirements are typical to the particular kind of vessel. And, he adds, "A ship management company that realizes this and is able to differentiate between the common and typical different requirements and able to address these accordingly, can be successful in different sectors at the same time; while also improving on efficiency by capitalizing on resource and knowledge sharing between different sectors, wherever this is applicable."

> "Our most critical and innovative vetting element is our Navigation Assessment Program, which requires all deck officers to complete a simulator assessment before they stand a navigation watch."
>
> – Mike Golonka, vice president, Crowley ship management

And, because Thome Ship Management operates out of offices all around the globe, it gives them global reach but also cultural diversity. To that point, Malik insists, "Cultural diversity, is, in fact, our strength. We do not focus on a passport / nationality but rather our focus is on competence and attitude. With the world getting more and more connected with each passing day, it is essential for a business, particularly like ship management which involves operations all around the world, to have a 360 degrees approach in all respects. The cultural diversity enables us to understand the requirements and solutions from all angles and in general also prepares the employees better for dealing with different cultural groups outside the company."

To that end, Thome's Human Element drive is well recognized in industry and focuses on Quality and Safety; which Malik says go hand in hand. For example, Thome Group recently announced that it had become self-sufficient in recruiting junior officers, thanks to its in-house cadet training program.

Launched in 2005 under Thome's "Human Element" initiative, the Thome Global Cadet Program has already trained in excess of 1,350 cadets from at least 12 countries in Asia, Europe and the Far East. Currently there are 650 cadets at various stages of training on the program with another 200 due to join soon as deck, engine, electrical or catering cadets. The success of this scheme has enabled Thome Group to fill all of its 2014 junior officer vacancies from within its own pool of trained seafarers.

Michael Elwert, Director of Group HR, HSSEQ & Crewing, said "We place a great deal of importance on our cadet program and are delighted that it is proving so successful, adding, "He added: "We at Thome Group recognize the importance of providing quality training to our seafarers and the difference it makes towards them and ultimately the performance of the vessels they operate. We believe that training is the key to operating safe and efficient ships on greener seas. The level of training we provide is specialized and is over and above the standard recommended by STCW."

As Thome Group continues with the expansion of its fleet, the requirement for suitably trained officers to serve onboard its tankers, bulkers, gas carriers and offshore has increased exponentially. The cadet program has a robust selection process to ensure that Thome recruits well rounded candidates who benefit from quality coaching. The multi-national and multi-cultural cadets match up well the diversity with Thome Group.

Notable in the long line Thome Global Cadet Program graduates is Chief Engineer Jonathan Duenas who graduated from the very first program in 2005 and has since become Thome Group's youngest Chief Engineer. Duenas reported, "Being able to be part of the Thome Cadet Program has not only given me an amazing opportunity, it has also given me a career that I'm passionate about. It shaped me to be a better decision maker and critical thinker."

The 'Philadelphia Express' is a Marine Transport Management controlled vessel. MTM is a Crowley Company.

Andrew Rodden, UK Regional Managing Director for Bibby Ship Management

Industry Calls, Bibby Responds

UK-based Bibby Ship Management is seeing a near 20% increase in inquiries for its services from the offshore sector as ship owners and support vessel operators look to reduce costs and recruit the best crews for their vessels. But, those two seemingly dissimilar goals can be hard to achieve in the same fleet. Not so, says Bibby. Predictably, the trend towards lower costs is being fueled by oil majors as the slump in oil prices weighs on their bottom line.

Can managers improve service and crew quality while reducing costs? Andrew Rodden, Bibby Ship Management's UK Managing Director says that they can, explaining, "There is a calculable commercial advantage to be made and there is a partnership between owner and manager which can benefit and improve the overall quality of the service delivered to the oil company," he said.

In the midst of the price downturn, support vessel owners are still operating in high cost areas. Many are now looking to see if they can introduce cost savings without jeopardizing the level of service. Rodden adds, "They are looking at the OpEx of their vessels to see if they can save money from the crew employment perspective. We had one enquiry from an owner who traditionally employed high cost officers and who is now open to alternatives to man his ships while retaining their focus on quality."

The drive to improve cost efficiencies is not just limited to the North Sea offshore sector, other high cost operators are being pressured to cut costs while maintaining operating efficiency. That's easier said than done. But Rodden says that Bibby has the answer.

According to Bibby, the key benefit is the operational economies of scale that managers can offer, especially where there are owners with small numbers of vessels within a geographical region. They will have a shortage of options in terms of what economies of scale they can draw on to help them drive costs down, they cannot really cut their crewing costs nor can they drastically trim their travel expenditure or vessel procurement.

"Bibby Ship Management's strength lies in its door to door, end-to-end service which will add value to the supply chain. Any ship owner can go to any company in the Philippines to get a Filipino crew, but the reality is being able to offer the security of doing all of that in-house. We manage and control

Another Crowley managed vessel.

that process, and we can add value at each step of the way," Rodden said.

Rodden also says that ship managers have the ability to leverage whatever cost-efficiencies and performance improvements they are building into their shipping and marine operations onto the offshore business. Rodden adds, "An obvious area here, for Bibby Ship Management, is Mumbai in India where it has set up a strong crew recruitment, training and management operation."

Different Ship Managers: Same Human Resources Philosophy

The decision to outsource ship management to a third party is typically a financially driven solution. And yet, a sub-standard manager can depreciate the assets, adding to the costs of outsourcing, and negating any advantage there. Often, the owner's reputation relies on the manager's performance, which eventually boils down to who is manning those vessels, where they came from, how they were recruited and trained. But, crew quality and financial savings need not be mutually exclusive concepts. This much, the world's best ship managers can agree upon.

Crowley, Thome and Bibby might operate in different sectors, global regions and employ different strategies when it comes to best practices when it comes to managing their far flung fleets. The one thing that they can agree on is the need for quality mariners, a structured recruiting process and continual vetting of these personnel. Without addressing the human element first, the rest is certain to fail.

Safe Manning Practices

By Captain
Jeff Cowan

MarPro contributor Captain Jeff Cowan addresses Overriding Operational Conditions and asks simply, "What were they thinking?"

The International Maritime Organization (IMO) together with the International Labor Organization (ILO) collaborated in 2006 to formulate the Maritime Labor Convention of 2006 (MLC 2006). This convention was ratified on 20 August 2012 and is now enforceable. MLC 2006 states that "nothing in this Standard shall be deemed to impair the right of the Master of a ship to require a seafarer to perform any hours of work necessary for the immediate safety of the ship, persons on board or cargo, or for the purpose of giving assistance to other ships or persons in distress at sea." At the same time, it stipulates that any seafarer who has performed work in a scheduled rest period is provided with an adequate period of rest."

Simply stated, this means that if safety is a concern, then the Master will ensure that crewmembers are rested after the safety issue has been resolved. For example, cargo becoming loose on board may present a safety hazard. The Master may task crew with securing that cargo if possible, and once secured, that crew would then have compensatory rest afterwards. This standard provides ship Masters with options in what should be rare, unusual or occasional situations. But in a time when economic conditions dictate staffing at minimum levels, is also fair to ask who is going to take over watchstanding and other duties once the emergency has been addressed. This is the essence of the problem.

The Regulators & Overriding Operational Conditions

IMO Standard of Training, Certification and Watchkeeping (STCW) also addresses fitness for duty and prevention of fatigue. It also states that in observing the rest period requirements, "overriding operational conditions" should be construed to mean that only essential shipboard work which cannot be delayed for safety, security or environmental reasons or which could not reasonably have been anticipated at the commencement of the voyage.

Since the United States has yet to ratify the MLC 2006, in order for Port State Control (PSC) to enforce the sections, they have been included in the Code of Federal Regulations, which says that the requirements of paragraphs (a) and (b) of this section need not be maintained in the case of an emergency or drill or in other overriding operational conditions. The CFR compiles the various sections of the MLC and STCW into a concise format. The IMO and CFR standard allow Masters to call out crew even if rest requirements cannot sustain the event under the MLC 2006 convention, if the term "Overriding Operational Conditions" can be used. But it is minimal staffing itself that creates situations that allow Masters to create these conditions for which they then call upon MLC 2006 2.3/14 and 46 CFR 15.111(c) to justify shorting crew rest periods. Most of these conditions are very typical and occur regularly. Hence, the "reasonable anticipation" component of this regulation is ignored.

Garden Variety "Overriding Circumstances"

Ship Masters also often claim "overriding operational conditions" to relieve crew of their rest periods in situations that are called 'Contingencies of the Trade.' Containerships in particular typically travel between the same ports and experience the same problems upon every port stay. In practice, this involves a port giving an arbitrary sailing time which ignores the regular realities of cranes working less than optimum due delayed maintenance, limited truck/chassis availability, work stoppages and/or pilot and tug availability. Nevertheless, the Master proceeds to schedule crew accordingly until a last minute notification that a pilot is not boarding for another four hours. The crew stands down awaiting further clarification of sailing.

This is an example of trade contingencies that must be taken into account while claiming "overriding operational conditions." When this occurs repeatedly, how can the Master in good conscience still claim overriding conditions? After several such instances, the crew is clearly not getting rest, something that one P&I Club cites as the reason for 58% of all mishaps.

Moreover, STCW further allows that "Parties may allow exceptions from the required hours of rest … provided the rest period is not less than 70 hours in any 7 day period. Exceptions shall not be allowed for more than two consecutive weeks. The intervals between two periods of exceptions shall not be less than twice the duration of the exception." In other words, the ship Master shall ensure the rest hours are met and that only so many exceptions are allowed.

The most egregious example for "contingency of the trade" is the (not uncommon) voyage schedule when time between ports is less than 24 hours. In these cases, crews will not attain adequate MLC-mandated rest. Six hours alongside the berth for cargo operations after a two-hour passage both ways with pilot is then followed by another six hours transit to the next port, only to begin the cycle again. In this case, a minimally manned vessel cannot possibly meet minimum rest periods,

and the Master claiming overriding circumstances knew that to be the case, well before the transit began. Rarely does port state control intervene, however.

When a scheduled bunker barge is late, the designated oiler/wiper (usually assisting two ship engineers) whose duties were to attend the ship bunker pipe header while fueling, is typically placed on standby awaiting the barge's arrival. This crewman will most likely have been up for the entire pilotage into the berth from arrival at the pilot station, and then will be tasked with standing by the ship fuel oil header until the barge casts off between 6 to 8 hours later. At the completion of fuel transfer, this person will have been up a full 18 hours with only relief for meals. Certainly due compensatory time off next day, this is unlikely to happen since there is no one else available to perform his watch or maintenance functions.

Separately, and in the first 24 hours after a long sea passage and before arrival alongside, it is not unusual for the Captain and Chief Engineer to be up and performing duties in excess of twelve hours respectively. For example and when entering the North American Emissions Control Area, the fuel switch must be monitored and so too must navigation, weather routing, traffic and Customs forms properly entered. Elsewhere, the rest of the crew is preparing to fuel (bunker), checking cargo stability, set up for engine maintenance that cannot be done at sea, and/or preparing for stowage of stores. Beyond this, senior officers spend a large proportion of their time culling, answering company e-mail, filling out forms, updating logs, and various computer-based for the shipping company, all of which are considered work within the confines of IMO. These hours are not to be considered rest and need to be reflected in the Work/Rest Hour log. Ideally, ship's officers would accurately track their hours and Port State Control could effectively mandate accurate Safe Manning goals.

The elimination of ship's Pursers was done with the assumption that computers would make paper obsolete. In reality, this has been anything but the case. The burden of forms went from a few simple items, increasing to satisfy a list of regulatory acronyms that include but are not limited to, VGP, IAPP, ISPS, ENOA, OPA 90, Rest Logs and MARPOL. In practice, it is not unusual for a Master to spend most of his time in the office answering e-mails and filling out forms, with few interactions with the wheelhouse.

A tentative IMO resolution (FAL.5/Circ.3918; April 2013) that would facilitate e-acceptance of documents is helpful, but is not yet mandated. If enacted, this would allow Port State Control time to preview before boarding the ship and afford more time for other pursuits during the inspection process. Given the present scenario, PSC spends one to three hours going over ship paper certificates; time that could be better utilized on deck or in the engine room. Beyond this, it potentially reduces the amount of time necessary for the visit itself.

Addressing Safe Manning: Before it is too late

In the interest of a safer environment aboard ship, as of January 01, 2015, the International Safety Management Code has been amended to reflect the MLC 2006 requirements for safe manning. This stipulates that a vessel shall be appropriately manned in order to encompass all aspects of maintaining safe operations on board. Separately, the Shipowners' Club, an international mutual insurance association, states, "The onus of assessment of safe manning for any vessel is on the company who operate it as it is privy to the actual facts of the prevailing operation. Therefore the company would be liable for not having made a proper assessment or for not re-assessing a change in circumstance of the vessel."

In response, some companies have increased their complement; typically hiring an additional Third Watch officer (at a reduced pay scale) who relieves the Chief Mate of standing a watch. Still others will pay all of the overtime possible, as it is still cheaper than hiring another crewman since extra crew means everyone will make less money. And, in these cases, seafarers are not necessarily employed for experience, but for monetary concerns.

The typical watch system utilized aboard merchant ships over the course of the last century is the 'four hours on, eight hours off' schedule. The new MLC rest guidelines have prompted some operators to try other systems. The most prominent of these alternatives involves the so-called "Swedish Watch" system, which employs a staggered modified schedule, except when transiting pilotage waters and mooring the ship. At this point, the ship Master is still faced with upset rest periods performing common ship/shore/drill scenarios, especially if the ship remains minimally manned. For these situations, the employment of two third mates is probably the best answer, but universal acceptance of this is unlikely without regulatory enforcement.

Companies and regulators alike appear to have learned little from the mistakes of the past. Without a doubt, the term "overriding operational conditions" needs to be better defined when it comes to deciding what constitutes adequate rest and what does not. And since fatigue has been proven to be the cause of most accidents, the need to do this sooner rather than later is most important. Failing that, we need only ask: *Who is going to be next and how bad will it be?*

Captain Jeff Cowan graduated from the California Maritime Academy, ultimately earning and sailing on his Master's license. He remains involved in maritime issues and is a regular contributor to Maritime Professional and MarineNews magazine(s).

Stepping Up for the Mariner

By Walter J. Brudzinski

U.S. Coast Guard and Maritime Law Association attorneys coordinate training to promote pro bono representation of mariners at Coast Guard suspension and revocation hearings.

Mariner-respondents in Coast Guard suspension and revocation (S&R) proceedings may be represented by professional counsel, but many choose to represent themselves because they cannot afford to retain an attorney or are unable to locate one willing to represent them at no cost or at reduced cost. In response, attorneys from the Maritime Law Association of the United States (MLAUS), Coast Guard Administrative Law Judges and Investigating Officers participated in a joint, continuing legal education (CLE) session during the MLAUS Fall Meeting in Philadelphia to inform and encourage volunteers to represent mariners of limited means in S&R proceedings.

Training in Mariner S&R Proceedings

Attorneys David H. Sump and H. Allen Black of the MLAUS Committee on Regulation of Vessel Operations, Safety, Security and Navigation organized the CLE session. They presented a mock S&R scenario from the viewpoint of the respondent-mariner's attorney. Commander Christopher Coutu and Mr. Pat Fink of the Coast Guard National Center of Expertise (S&R NCOE) for Suspension and Revocation presented the Investigating Officer's viewpoint. Chief Administrative Law Judge Walter J. Brudzinski and Administrative Law Judge Michael J. Devine provided the view from the bench.

The Coast Guard initiates 500 to 600 S&R cases each year with the overwhelming majority resolved by settlement. These cases are adversarial, administrative actions procedurally similar to non–jury civil actions in Federal Court. The purpose of S&R proceedings is to promote safety at sea. These administrative actions are remedial and not penal in nature. They are intended to help maintain standards for competence and conduct essential to the promotion of safety at sea. Participating in and supporting this CLE session was part of the Coast Guard's continuing efforts to partner with stakeholders in the maritime community such as MLAUS in the interest of promoting safety at sea while protecting mariners' due process rights. Promoting professional representation of mariners is an important component in protecting those rights.

For many years, Coast Guard Administrative Law Judges have been identifying attorneys and legal clinics in their local areas of responsibility that were willing to represent mariners of limited means. These efforts continue to be very successful but are limited in geographic area, and attorney availability. To supplement local "pro bono" programs, a larger, nationwide system was needed.

Nationwide Pro Bono System

With the help of MLAUS and its member-attorneys from across the United States interested in representing respondents of limited means, the Coast Guard's Office of the Chief Administrative Law Judge has developed that nationwide system. The Administrative Law Judges' website, ***www.uscg.mil/alj***, now contains a state by state list of attorneys willing to represent mariners of limited means. The website enables additional attorneys to enroll and also allows attorneys on the list to have their names removed. It contains references to laws, procedural regulations, and relevant articles to assist attorneys and mariner-respondents, as well as templates to assist mariner-respondents and their attorneys in the preparation and submission of the most commonly used motions in S&R proceedings.

At or about the same time the Office of the Chief Administrative Law Judge initiated this nationwide pro bono program, the Coast Guard established a policy providing for the appearance of Coast Guard attorneys in all contested S&R proceedings. Coast Guard policy has long prescribed that non-attorney Investigating Officers represent the Coast Guard in these proceedings. The Coast Guard's S&R NCOE would assist the IO's in the cases and depending on the type case, or the IO's need, and attorney from the S&R NCOE would represent the Coast Guard at the hearing. When no NCOE attorney is available, a Coast Guard attorney from outside the S&R NCOE might present the case but only if made available by their local commands which occurred infrequently. Now, under the Coast Guard's new policy, the S&R NCOE has the responsibility to ensure a Coast Guard attorney is made available on all cases and is present for all S&R proceedings.

Knowledgeable, professional counsel on both sides of S&R proceedings provides the best opportunity to protect the due process rights of mariners. It also enhances the public's understanding of maritime safety and security and increases confidence in the fairness of the process.

Chief Judge Brudzinski was initially appointed U.S. Administrative Law Judge in 1996 with the Social Security Administration. He was previously an Assistant and later Deputy Commonwealth's Attorney for Virginia Beach. Prior to his prosecutorial career, he served in the U.S. Coast Guard as a commissioned officer both afloat and ashore and in various legal assignments as a judge advocate.

Maritime Professional

2015 Editorial Calendar

Q1 LNG Transport & Technology

Ad Closing: March 1

Publish: **March 2015**

- **Floating Production Systems:** Inside Shell Prelude
- **Risk & Cyber Security:** At sea, in port and in your office
- **Insurance & Finance:** Keeping your financial house in order
- **Regional Port Focus:** Cruise Port Logistics
- **ROI Salvage & Response:** Risk of inadequate preparation

MarPro Recruiter: Cruise Careers

The TOP 20 Ship Management Companies

A strong ship management team is essential to efficient operations.

www.maritimeprofessional.com

- CMA Shipping 2015
  March 23-25, Stamford
- Cruise Shipping Miami
  March 16-19, Miami
- Arctic Technology
  March 23-25, Denmark
- Marine Money Houston
  April, Houston

Q2 OSV Operator

Ad Closing: May 1

Publish: **May 2015**

New Energy Finds, Jones Act Rules Impact OSV Operations

- **Risk & Marine Fuels:** Fueling the fleet to and through 2020
- **Marine Electronics & Communication**
- **Regional Focus:** Norway, Denmark, Finland & Sweden
- **ROI Crew Training:** Ensuring your investment is paying off

MarPro Recruiter: Offshore Energy Jobs

The TOP 20 Energy Employers

The energy job market is hot. MarPro reviews the 20 best global energy companies for gainful employment.

www.worldenergynews.com

- NorShipping
  June 2-5, Oslo
- Marine Money Week
  June, New York

Q3 Shipbuilding

Ad Closing: September 1

Publish: **September 2015**

MarPro tracks the most interesting shipbuilding projects worldwide

- **Software Solutions:** Risk & reward of monitoring & control
- **Classification & Registries:** Helping to navigate new regs
- **Port Focus:** Rotterdam: The World's First Robotic Superport
- **ROI Marine Propulsion:** Repower, Scrub or Change Fuel?

MarPro Recruiter: Shipyard Jobs

The TOP 20 Shipyard Employers

The ship & boatbuilding job market is hot. MarPro reviews the 20 best U.S. shipbuilding companies.

www.maritimejobs.com

- Europort
  Nov. 3-6, Rotterdam
- OTC Brasil
  Oct. 26-29, Rio

Q4 Workboats

Ad Closing: November 1

Publish: **November 2015**

The workboat market continues to drive the North American market

- **Offshore Energy Production:** Floating Production Systems
- **Short Sea Shipping:** From concept to reality
- **Regional Port Focus:** U.S. Gulf of Mexico
- **ROI Training & Security:** Life after MLC 2006

MarPro Recruiter: Workboat Jobs

The TOP 20 Ship Owning Companies

As the domestic commercial shipping market takes off, so too do job opportunities.

www.maritimejobs.com

- Workboat Show
  Dec. 2-4, New Orleans

** The publisher reserves the right to alter this calendar. All features are subject to change in light of industry trends and developments.*

Arctic Smarts

Newfoundland and Labrador is preparing the next wave of ocean technology experts.

When it comes to the Arctic, the world still has a lot to learn.

With just 10% of its vast expanse having been charted to date and much about its environment still unknown, the Arctic remains as one of the most mysterious places on Earth. As a new frontier with natural resource potential, the Arctic is also an area of increasing international interest and economic activity.

As activity in the Arctic increases and new opportunities emerge, Newfoundland and Labrador's academic and training institutions are poised to respond to the rising demand for innovative technology solutions, information, and highly skilled workers. With a successful history of exploring new frontiers, including the Arctic, Newfoundland and Labrador is leading the way in Arctic education and training that will prepare the next generation of innovators and explorers, and that will enable northern communities and Aboriginal peoples to benefit from emerging opportunities.

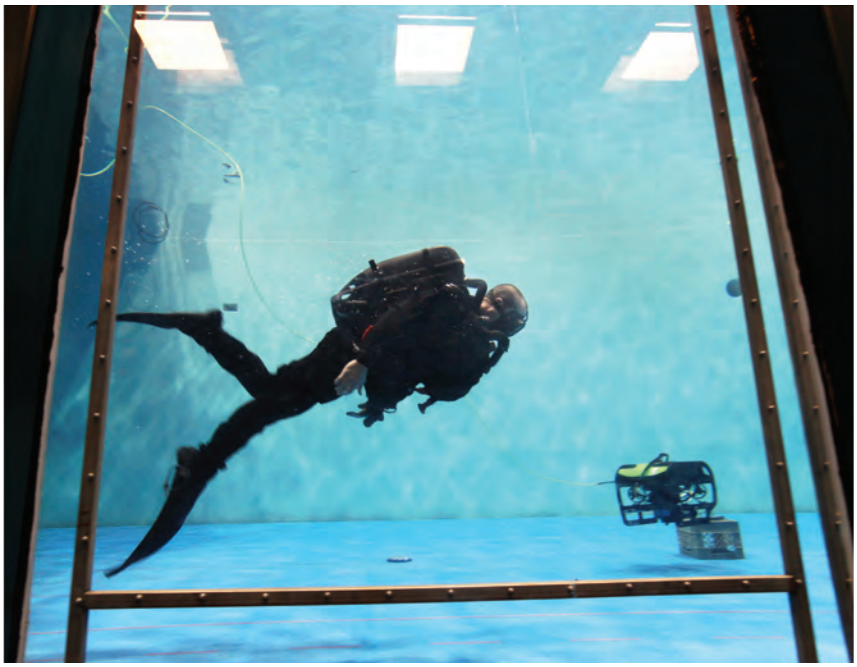
At the forefront of this grand undertaking are the Arctic academics, and the best of them can be found on – and off – Newfoundland and Labrador's shores. Memorial University and its Fisheries and Marine Institute (Marine Institute or MI for short) is home to world-leading cold ocean experts, facilities, and education programs.

"The Marine Institute is unique in Canada," says Memorial University Vice President (Marine Institute) Glenn Blackwood. "It is Canada's Marine Institute. We produce about 70% of all English-speaking seafarers in the country."

The Marine Institute, currently celebrating its 50th anniversary, is essentially a polytechnic within Memorial University, offering Diploma, Degree and Masters Degree programs, emphasizing applied research and development and advances in ocean technology, and collaborating with industry and others on the development and application of ocean technology products for all sectors of the maritime community.

MI is home to the School of Ocean Technology (SOT), Cen-

Image above: Marine Institute's Flume Tank



NRC – Offshore Engineering Basin

ter for Applied Ocean Technology (CTec), Center for Marine Simulation, Center for Sustainable Aquatic Resources, Safety and Emergency Response Training Center, as well as the Offshore Safety and Survival Center.

"We're at the early stages of oil and gas development in the province," says Blackwood. "Especially going deeper in the ocean and further north, which will be largely driven by our ability to access and utilize those resources."

This capacity grows day by day, thanks to leading-edge research and development being led by some of the world's foremost marine technology experts, using some of the world's most advanced equipment and facilities. MI is home to the largest collection of marine simulators in North America (and perhaps, the world) – 16 in total, including the iconic Full Mission Ship's Bridge simulator and a seventeenth soon to be added – a deepwater anchor handler simulator.

Also adding to this growing capacity are ocean technology experts at OCRE (Ocean, Coastal and River Engineering), a division of NRC (National Research Council of Canada). NRC-OCRE is home to world-leading expertise, equipment and facilities, including the world's longest ice tank, a tow tank, and an offshore engineering basin, along with complex numerical and model testing systems.

"We're physically located on the campus of Memorial University, so we draw a lot of our expertise from Memorial," explains NRC-OCRE General Manager, Terry Lindstrom, who says that it is this access to qualified people and the facilities in which to nurture them that allows the relatively small province to punch well above its weight in the ocean technology arena.

"We have a very small footprint, but we have the capabilities, tools, educational background, and the physical bricks and mortar of world-class facilities."

With these and other education and training entities operating within the province, collaboration is of the utmost importance. This applies not only to academic institutions, but also extends to government, which plays a key role in facilitating and promoting the province's advancements, and to industry, where these advancements are utilized.

"I see it as a propeller with three blades…it doesn't work without the three of them," says Glen Blackwood.

"Industry supports us in many, many ways, through scholarships for students, with a piece of equipment, or a problem we're working on jointly with them. But the collaborative piece is with government and industry."

The Province is very much a part of this combined effort. Through its Arctic Opportunities Initiative (AOI) launched in 2010, the Government of Newfoundland and Labrador is working with local stakeholders and those in other northern jurisdictions to facilitate partnerships and promote collaboration, environmental responsibility, sustainability and respect, with an overall goal of creating an environment in which all stakeholders can benefit from emerging opportunities in the Arctic, northern communities can thrive, and that will further attract global industry leaders.

Industry and academia should – and will – continue to take the lead when it comes to progressing interests in the Arctic, while the Provincial Government seeks to provide support, improve international awareness, and facilitate relationships and partnerships.

Newfoundland and Labrador's Research and Development Corporation (RDC) is another key asset, working at an arm's length from Government to assist private enterprise in developing and expanding new technologies for operating in the world's harshest environments. Through leadership, strategic focus, and investment, and working with R&D stakeholders in business, academia, and government departments and agencies, RDC seeks to strengthen and improve the research system throughout the province. It serves as a catalyst for innovation with the goal of creating economic growth in Newfoundland and Labrador for future generations.

When it comes to Professional Recruitment:

EXPERIENCE PAYS

It is official: Salaries for employees in the Maritime and Offshore sector in North America are steadily increasing. Whatever your trade, there's a chance that employers will be willing to pay more for your services compared to last year, especially if you possess the right amount of experience. Research conducted by the Faststream Recruitment Group's Fort Lauderdale office, based on data collected from placements in North America over the last two financial years, shows an average rise of 9.7% in salaries across the board.

Faststream, a global maritime and offshore recruiting specialist group, says it is not as straight forward as the average numbers may suggest. That's because, in part, while the top end of salary brackets has increased, the bottom end has remained similar to the 2013 / 2014 financial year. Eric Peters, Faststream's U.S. Managing Director told ***MarPro*** in February, "The top end of the salary ranges for many positions has increased over the last 12 – 18 months. Changes in regulations from federal agencies, new legislation and an overall sense of urgency due to environmental impacts have put many positions at a premium and there just isn't enough talent to go around."

Beyond this, the entire shipping industry is feeling the gap in experience, what many characterize as 'the lack of successors' in the industry. For this reason, candidates with 7 to 15 years of industry experience are in the highest demand, but at the same time, they are also the most difficult to find. As a direct result, they are being paid more based on where they are at in their career and what they can offer to a business.

Peters explains further, "When you look at starting salaries, there has not been a significant change in years. The main difference in 2014 and what we'll see in 2015, compared to the previous financial year, is that employers are beginning to stretch the limits of what they can pay if the right candidate comes along. In a candidate short marketplace, companies are recognizing that they will need to pay more to get someone in who can hit the ground running. Shipping companies are dealing with an aging fleet and/or an increased number of vessels. They do not have the luxury of time to train and develop their staff to get them up to speed. This has, in turn, led to a shift in attitude for employers who have been reluctant to extend their salary bands in the past."

In certain sectors, the changes in metrics are particularly pronounced. For example, the demand for Naval Architects and HSEQ professionals in the Maritime and Offshore markets has increased significantly due to the rise in newbuild tonnage, refits and recent ISO/ISM regulation changes. For HSEQ professionals, high demand looks to continue through 2015 and beyond due to the ever-evolving development of

POSITION	2013-14 Low	2013-14 High	2014-15 Low	2014-15 High	PCT Change
HSEQ	$75,000	$120,000	$87,500	$140,000	+ 14.3
NAVAL ARCHITECT					
Maritime	$80,000	$130,000	$80,000	$140,000	+ 4.5
Offshore	$110,000	$170,000	$110,000	$185,000	+ 5.1
VESSEL OPERATIONS	$65,000	$85,000	$80,000	$95,000	+ 14.3
TECH. SUPERINTENDENT	$100,000	$120,000	$110,000	$140,000	+ 12
COMMERCIAL SALES	$80,000	$95,000	$80,000	$110,000	+ 7.9
TOTAL AVERAGE					+ 9.7 %

Eric Peters, Faststream's U.S. Managing Director

pending rulemakings. These include, but are not limited to the U.S. Coast Guard's pending Subchapter "M" standards for uninspected vessels (such as tug companies). And, the gap in salaries between Naval Architects working in the Maritime industry versus those in the Offshore sectors continues to widen, with the Offshore sector benefiting from professionals who are looking to make a move based purely on money. Separately, Technical Superintendents could potentially earn $15 to $20,000 more per annum if they have 7-15 years' experience and Vessel Operations specialists could earn an extra $10 to $15,000 annually if they can demonstrate at least 3 to 5 years of experience.

At the same time, companies who have balanced out through the economic crunch are now looking to Commercial Sales professionals to start growing their business again. The demand for experienced sales candidates grew into a highly desired skill set in both 2013 and 2014 in anticipation of the continued progression in 2015. With more private equity participation and outside lending groups involved in business relationships in the shipping industry, there is more of a focus to deliver sales and bring "new business" to the table. Owners are looking for candidates with a strong network and relevant relationships. Those that possess these qualities have enjoyed an increase in earnings of as much a 15 percent.

"The real story here is supply and demand," says Peters, continuing, "There are far fewer Maritime graduates going out to sea and those who are going out, are coming ashore much quicker and therefore have less technical experience. The workforce in the Maritime industry is aging and looking to retire or work reduced schedules, while regulations put more responsibility on these individuals and the various tasks they handle. All of this is creating the "perfect storm" in the war for talent in the Maritime industry. An average salary doesn't really exist anymore, or at least it doesn't represent the reality for employers and employees. Company size and location will always affect the basic salary, but for the most part salary is representative of the company's urgency and need for the experienced candidate." Bottom line: it is still a good time to be in the market for the right job situation, regardless of the price of oil, provided you bring the right skill sets and more importantly, the experience to hit the ground running.

Accelerating the Excelerate LNG Business Model

An uncertain future, an unparalleled record of safety and a history of many 'industry firsts' propel Excelerate into the next phase of an always exciting and ever-changing global LNG market. The view from a market leader brings it all into focus.

By Joseph Keefe

Today's LNG industry can be justifiably proud of an enviable safety record that spans more than 50 years. At the same time, it can be optimistic about what will come next, even in the midst of plunging oil prices that have brought turmoil to the upstream, midstream and downstream markets. Last month, ***MarPro*** sat down with Captain Mark Lane, Senior Vice President of Operations at Excelerate Energy. Lane, a Licensed Master Mariner, spent the better part of 28 years in a seagoing career primarily on LNG carriers after his graduation from Maine Maritime Academy in 1979. Providing insight from both sides of the LNG equation – business and operations – Lane says that his firm remains focused not only on being first, but instead the first to do something right.

Excelerate has produced many firsts for the industry. Lane insists more will come, adding "We create opportunities for others, which at the same time benefit our bottom line." Today, Excelerate controls as much as 50 percent of the world's LNG tonnage, but that's just one aspect of this diverse company. Over a decade ago, Excelerate Energy saw the need for a cost-efficient, fast-track solution for the importation of LNG and introduced the concept of onboard regasification of LNG. Since bringing floating regasification to market, that technology has been widely accepted across the globe and has created new markets for LNG.

The Excelerate menu of services spans from floating storage and regasification units (FSRU) to a complete gas delivery solution. Beyond this, says Lane, Excelerate Energy is today the only floating LNG provider offering services across the entire midstream LNG chain.

Excelerate's LNG Menu

STS TRANSFER OF LNG	FLOATING REGASIFICATION	CHARTERING	STS TRANSFER
FLOATING LIQUEFACTION	**MARKETING**	**SHIPPING & OPERATIONS**	**TRADING**

Image above: Sister Ships: the FSRU EXPEDIENT in regas service at Escobar, Argentina with the FSRU EXPRESS providing LNG cargo. *(All images courtesy Courtesy of Excelerate Energy)*

EXCELERATE IN THE BEGINNING

Once upon a time, El Paso Energy was owner of LNG receiving facility in Elba Island in Savannah, GA. They had just finished an overhaul of the terminal including a new marine interface and literally, they were going to open it up within a week, when a ship – not LNG – came up the channel and lost steerage – hit the dock and wiped out all the good work they had done. At the time, the question of offshore LNG had been around a while but it really hadn't gained much traction. At that time, the United States didn't allow for the offshore import of LNG.

The Louisiana Offshore Oil Platform (LOOP) eventually became possible because of the deepwater act of 1974. LOOP was America's first deepwater port and for a long time, it was the only one. Mark Lane takes the story one step further, saying "After the incident in Savannah, El Paso started to work to change the deepwater port act. And then, of course, 9/11 happened. And that helped put the snail's pace of US regulatory responsiveness into high gear. So, El Paso started to work in the US Gulf, they found a location, and this was the start of Excelerate Energy."

As that was happening, El Paso was also building the first US deepwater port, Gulf Gateway. Then, for some corporate reason, they decided to divest themselves of their LNG infrastructure (again). Lane explains, "They'd done this before and you recall they had the LNG carriers. And they were looking for a buyer. Eventually, El Paso made arrangements and they sold the Deepwater port project and then, they also sold their obligation on the first three regasification vessels. So, Excelerate was formed in 2003." The firm would soon make many firsts, in many ways and places.

A SERIES OF FIRSTS

It would not be an exaggeration to say that Excelerate's reach into LNG knows no bounds. A pioneer in innovative LNG midstream solutions, the firm owns and operates LNG carriers, Floating Storage and Regasification Units (FSRUs), has developed Floating Liquefaction, Storage and Offloading (FLSO) Units, provides operating services under long-term contracts and supports LNG sourcing, LNG trading and shipping. More impressive, however, is that in most cases, they were the first to develop each of the unique, niche services and infrastructure that the market depends on today.

The world's first regasification vessels were designed, built, and produced by Excelerate, as was the concept of tying in the regas vessel with an SPL buoy system. Beyond this, Excelerate pioneered the gas port concept. Lane told ***MarPro***, "The Gas Port concept is different from the Gateway system concept because the Gateway uses the SPL buoy, whereas the Gas Port is a high pressure marine loading arm designed to move high pressure gas instead of liquids. The concept involves rapid delivery to market gas based on finding underutilized existing facilities of the proper size for the regas vessels and a tie-in to the natural gas transmission system."

Regasification provides flexibility and market access. FSRU's provide ocean transportation, floating storage, regasification, and they deliver high pressure natural gas in very large volumes. The newer generation vessels have the capability of delivering 1.2 billion cubic feet of gas per day. That equates to about 40 percent of the gas consumption of the country of Brazil on a given day. Unlike land based facilities that can't be moved, regas vessels can deliver market ready gas anywhere, depending on the market. Lane told ***MarPro***, "The offshore concept involves much lower initial CapEx. Land based facilities, on the other hand, are captive to one spot, and the P&L is tied to gas prices in the market."

Indeed, the rise in FSRU (Floating Storage and Regasification Unit) projects reflects the fact that they represent less than half the cost of an equivalent onshore facility.

FLSO's – Floating Liquefaction Storage and Offloading (FLSO) Vessels – capitalize on Excelerate Energy's experience and expertise in the floating regasification business. These FLSO's liquefy natural gas and store LNG at near shore, at shore, and offshore locations, loading cargoes onto conventional LNG carriers. The FLSO's provide easy and convenient access to stranded gas and pipeline grade gas.

In February of 2007, first ship-to-ship (STS) Gas transfer took place at Scapa Flow. In that instance, Excelerate actually bought that cargo and loaded it onto the ship in July 2006. Lane adds, "So, we also pioneered the concept of floating storage for longer term. We knew we had a huge market uplift potential by delivering the cargo we lifted in the summer months into a high value winter market. We also pioneered a concept on how to minimize boil-off, store the cargo and deliver it to a market that needed it."

The Excelerate story involves literally dozens of patents. Nevertheless, Excelerate has been anything but restrictive when it comes to industry taking advantage of their many concepts. Lane says simply, "If you think about it, the idea is to set a standard in the industry, but you wouldn't want to have a restricted patent where we are the only people who can play in the game. We would lose our market flexibility." He adds, "As an example, our ships have replaced Golar in Brazil because the systems are common, based on the standards that we set for STS transfer systems. Recently, Teekay and Smit used our system to lighter a grounded ship. MOL uses it for commercial STS in Japan."

A BUSINESS PLAN FOR UNCERTAIN TIMES

Although the regasification vessel market is an important one for Excelerate, Mark Lane says it is important to understand that Excelerate is also an infrastructure development and gas trading firm. He adds, "We charter in ships when we need them. And, we charter out. We've got two ships chartered out to Petrobras; one for trading needs and the other, for regas. Some of our competitors have even begun to try and duplicate our business model."

But, the firm is never one to sit on its laurels. Its second generation regas vessels are bigger, deliver faster and are designed to comply with more stringent regulations. Later versions of the vessels boast

Economical dual fuel, diesel electric propulsion systems and Excelerate's third generation ships have gone to 100 percent redundancy. "On one vessel, we have a port side system and a starboard system. We can shut one side down completely, isolate it and do maintenance on it and keep the ship in service for 15 years. The generation 4 and ships will take it even further, with even more features that will firmly keep us at the forefront of the industry. Our operating philosophies are based on industry standards and best practices. We're able to move a concept to market faster than our competitors who tend to be overburdened with internal processes that I would characterize as non-revenue producing processes," Lane said.

It is no accident that all of Excelerate's ships are third party managed and flagged ether in the Marshall Islands or Belgium. Technical management is entrusted to Exmar Ship Management, a subsidiary of Exmar NV, the ship owner. Lane adds, "Way back when we started with them, that made a lot of sense. We didn't necessarily want to be ship owners, we were gas traders. But, this is where things get complicated. Excelerate is both a charterer and an owner."

And, while Lane – an American mariner himself – would probably like to use U.S. seafarers, it is also true that the cost of an American mariner is much higher than the cost of international labor. Lane laments, "It's primarily a function of taxes. The American mariner is almost twice the cost of a Croatian or Ukranian mariner. To put it more into context, a U.S. third mate on one of our ships takes home more money than the Master from Belgium. So, there are a lot of socio-economic issues that we have to manage on some of our ships, depending on the mix of crew." Arguably, they've done that quite well so far.

The current dip and wide swings in energy pricing don't seem to worry Lane. He cites Excelerate's diversified portfolio as a prime reason why. "We're somewhat insulated from the current pricing because we're an infrastructure provider, a trader, and a shipper – all of those things. We're privately held. We're still trading LNG, buying and selling gas, whether or not it's in a liquid form. And we currently charter out some of our tonnage to several others that are also trading. Basically, it involves managing the spot trading and selling to a market of opportunity."

That doesn't mean that things are always easy for Excelerate – they are not. Lane talks frankly about their recently shuttered Texas facility, saying, "Port Lavaca was one of our liquefaction projects and recently we put it on the shelf so to speak.

Excelerate Firsts

January 2005: First regas vessel commissioned – EXCELSIOR
March 2005: First LNG deepwater port commissioned - GULF GATEWAY
July 2006: First commercial floating storage program - EXCALIBUR
February 2007: First commercial STS transfer conducted - SCAPA FLOW
February 2007: First GasPort commissioned - TEESSIDE GASPORT
May 2008: First base-load LNG deepwater port commissioned - NORTHEAST GATEWAY
June 2008: First LNG import facility in South America commissioned - BAHIA BLANCA
August 2009: First Middle-Eastern LNG GasPort importation facility commissioned - MINA AL-AHMADI
June 2011: Second Argentina GasPort commissioned - ESCOBAR GASPORT
August 2011: Contract for World's largest FSRU executed – BRAZIL'S VT-3 / DSME HN 2402
November 2012: Highest output FSRU commissioned – EXQUISITE BRIDGING VESSEL
January 2013: First Middle-Eastern Gateway importation facility commissioned – HADERA GATEWAY

FSRU EXPERIENCE – the largest regasification vessel in the world.

> "Although we in the business like to stand on that record, we (Excelerate) don't necessarily embrace what happened in the past. Our mission is to understand what is happening in the future. We are a very risk-averse company. We identify and quantify and mitigate every single type of risk to the lowest level possible."
>
> – Captain Mark Lane, Senior Vice President of Operations at Excelerate Energy

We're deactivating the development program for a number of reasons – market conditions have changed, so it doesn't make a lot of sense right now. We'd be competing with the other LNG companies in the US Gulf as far as liquefaction and export; an overpopulated niche in the industry. We've got our liquefaction projects that we're working elsewhere, and our liquefaction system is designed for offshore use where we operate a robust system in what can be a fairly impactful sea and wind state."

Out in the open market, Excelerate examines all options before selecting the best course for every cargo and trade. Formerly, most LNG was traded point A to point B, but Lane says that Excelerate develops concepts and arbitrage to creatively make money. For example, in one recent deal, a cargo headed for Taiwan was swapped for a cargo coming out of Oman that was going to Spain. Lane says, "We switched the cargo destinations – for operational and business purposes – backed out 28 days of shipping and four passages through the Suez Canal. It was a cargo swap based on logistics, optimizing the markets, and not tying up two ships unnecessarily for a month.

Excelerate's New England terminal is perhaps the perfect example of the flexibility that the firm builds into its business plan. Lane explains, "We just completed a delivery into the system up there. We haven't used the system in a couple years, but keep in mind, those vessels are tools that help us monetize the value of the gas in the commercial markets and in other words, they provide market access. Where we own the facilities, we trade all over the world and where the value is best for us is where we will send the gas."

ARRIVING SAFELY, LOOKING AHEAD

According to Mark Lane, there are roughly 500 LNG carriers in existence today. There's another 120 on order. Along the way, a few have been sent to the breakers for recycling. The LNG industry is 50 years old. In those 50 years, there has never been a loss of life related to cargo operations, a loss of the ship or loss of a cargo. That encompasses 100 million miles of laden transit and many more in ballast. Lane is, of course, aware of those numbers, but not necessarily tied to them. He says flatly, "Although we in the business like to stand on that record, we (Excelerate) don't necessarily embrace what happened in the past. Our mission is to understand what is happening in the future. We are a very risk-averse company. We identify and quantify and mitigate every single type of risk to the lowest level possible." So far, that seems to be working.

Ship Management and Technology

Technology is central, not merely an add-on, to ship manager brand value.

By Barry Parker

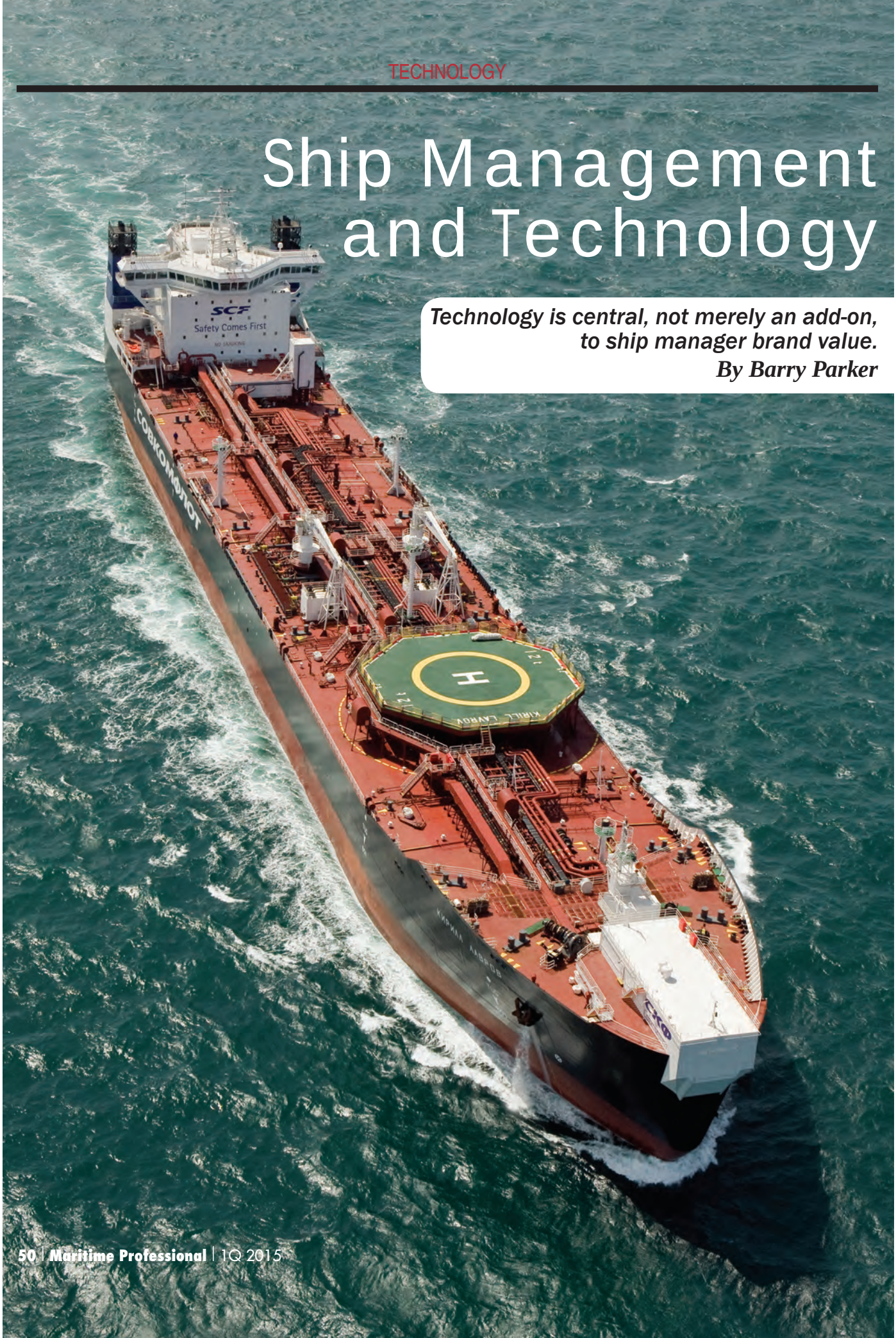


Image courtesy: Unicom Management Services (Cyprus) Ltd.

Ship managers who operate vessels on behalf of their owner clients, are the lynchpin of international shipping. As the industry has gone through rounds of relentless cost cutting, at times of increasing regulatory scrutiny, and commercial pressures for high standards, third party managers have filled the need for raising quality, while maintaining tight cost controls. The rise of third party managers in the 1980s and 1990s, driven initially by banks needing to operate repossessed vessels and then, later, by a push towards reducing crewing costs, coincided with revolutionary advances in technology that have enabled vessels to become, effectively, nodes in a broader network.

Strategically, the management business is about building economies of scale and sustainable long-term advantages, which might be in the form of proprietary recruitment and training, but also in creating differentiation through technology.

CHANGING LANDSCAPE

The ascendancy of the managers has occurred at a time that the character of shipping ownership has also changed, with new-age financial players competing alongside old-time shipping companies. Consider Ridgebury Tankers, the owner of 13 Suezmax tankers-backed by the Riverstone Group (a PE powerhouse with a slant towards energy businesses). While private, its internet website provides a window into its unique selling proposition, noting that it "Partners with world-class pool operators and ship managers for maximum performance, safety, efficiency and compliance."

The larger managers have brought technology in-house. Bernhard Schulte Ship Management, itself created in 2008 by joining four smaller managers, established a technology division, in late 2012, which would provide a platform for implementing technology solutions across the globe in multiple locations. According to the company, TDC frequently engages with various external consultants to review and ensure the quality of various software it builds. TDC works with many industry leading consultants in India, Cyprus, and Germany to deliver high quality maritime solutions. A communications division, Telaccount, based in Cyprus, is a packager and service provider for multiple networks- including Inmarsat and Iridium, used internally but also deployed externally to third parties.

V-Ships, part of the larger V-Group (owned by PE investors) sees technology at the fulcrum of its value proposition. Complementing its core ship management business – another wholly-owned V-Group company, Seacom Electronics, supplies equipment for navigation and communications (as well as selling air-time), to the maritime industry. Yet another group company, Seatec, provides turnkey services for project management services for vessel upgrades and refits. Its wide-ranging offerings include IT network design, as well as communication systems.

THE AGE OF BROADBAND

Increasingly, the communications mix has shifted to broadband. Telaccount, the Bernhard Schulte subsidiary, says in a recent bulletin: "The demand for transferring data to and from the vessels is growing each day," citing new developments including ECDIS, e-Navigation, and the Maritime Labor Convention (creating demands for "internet cafes" aboard vessels).

Geneva-based Specialist ship manager SeaFlag provided insights into managers' priorities and the importance of communications technology. Mr. Massimo De Vincenzo, SeaFlag's top executive, told ***MarPro***: "On board the managed vessels we have double broadband satellite systems for both voice and data traffic. The system is managed by Inmarsat and provides the possibility to always minimize the communication costs depending on vessels position. The system is used for both communications with office and with third parties." Capt. Motoyama from the top management at MMS Co. Ltd (based in Tokyo) offered a different perspective, telling ***MarPro***, "Basically, all communication with vessels from the office is e-mail and telephone. We have not found a suitable technology which could benefit all stakeholders jointly. We do not want to rush into experiments which burdens seafarers or office staff and yields nothing or little."

Seacom Electronics, the V Group company, also handles Inmarsat's Fleet Broadband, as well as VSAT. Demonstrating the economies of scale in managing upwards of 1,000 vessels, Seacom cut a deal three years ago with equipment and communications provider KVH, based in Rhode Island, to deliver VSAT services to its vessels.

Maritime businesses are complex and not always suited to out of the box solutions, so the large managers also have developed proprietary software and systems. V-Group, for example, uses the KVH service to connect ships to onshore networks using 'ShipSure,' an enterprise resource planning (ERP) software developed in-house. Technology figures prominently in V-Ships' Vessel Management System, which complies with requirements for Safety Management Systems, and includes on-line training for crew.

Describing a recent upgrade, V-Ships provided hints of the power behind its Vessel Management System, V-Ships explaining, "The development, maintenance, version control and approval of the VMS is built around Microsoft's powerful SharePoint collaboration technology that is being introduced into the group." Keeping 1,000+ vessels on the same page is now easy task. V-Ships adds "The distribution and on-going updating of the vessel version will be through a new VMS application that will use advances in ShipSure's replication technology to keep shore and shipboard VMS documentation in synch over the existing communication links."

Capt. Motoyama,
Senior Manager at MMS Co. Ltd

TECHNOLOGY AND TRAINING

Crew training is also a key activity at SeaFlag, with Mr. De Vincenzo telling ***MarPro***: "We provide the crew training materials and also arrange onboard training sessions through a sister company…" Capt Motoyama from MMS offered: "We have identified that ECDIS being the future and having it's training from outside may not yield desire results. Hence we have installed ECDIS training system in our training center in Manila to provide it to each deck officer and monitor the effectiveness of this important training for the safety of Navigation."

Motoyama of MMS also identified the roles of technology in routing, saying, "We have a vessel position monitoring system, which monitors each vessel position continuously, intended route and weather conditions. Vessel's positions are also transmitted to charterers as per their requests." New regulations have brought new technologies, with Capt Motoyama adding, "We get daily consumption of each type of fuel being consumed by each of our vessel. Once in ECA area, the low sulpur fuel consumption is on our alert screen. We have vessel position monitoring system, which monitors each vessel's position continuously, intended route and weather conditions. A vessel's position can be transmitted to the charterers as per their requests."

Separately, SeaFlag's Mr. De Vincenzo explained the importance of weather routing systems which support the masters in finding the most economical route and also helps in the

Image courtesy: Unicom Management Services (Cyprus) Ltd.

Captain Kuba Symanski,
Secretary General of InterManager

event of underperformance claims from charterers.

Remote monitoring of engine performance and Condition Based Maintenance (CBM) continues to emerge, supported by enhanced communications. MMS's Motoyama says: "We have taken up projects with engine makers where vital information is captured by ship's staff and sent to the makers for analysis. This in turn provides the health and performance of the Engines and predicts future problems and maintenance in advance. This practice does not pressure ship staff with high end software or technology which at times is very difficult to understand and use."

Technology is a marvelous enabler, but stakeholders say that it must be used with caution. Captain Kuba Symanski, Secretary General of *InterManager* told ***MarPro***, "Shipping works with 99.99% reliability, when at the same time, new technology is quite happy with 80% reliability. I don't think that shipping is quite ready to become unreliable." He added, "We also have serious problems with interpreting data. Who wants to work ashore with knowledge needed at sea? So the real question is 'Do we want this data ashore, or rather- support those at sea who know how to read it.?' "

Capt. Motoyama echoed the same sentiments, saying: "While advancing with technology MMS have very diligently taken care of understanding level of seafarers. We believe that any technology if it's faster than the mental level of users, it may be more trouble than it is worth."

TECHNOLOGY FOR SHIP MANAGEMENT

A common denominator between many operators seems to be that, while technology is essential for the modern ship manager to provide good service to its principals, at the same time, it is important to select the right technology for the right purpose. Too much technology and not enough training can lead to problems. Integrating technology into shipboard functions, without overburdening the crew is also important. All of that is possible today and ship managers are taking advantage of it.

Image courtesy: Unicom Management Services (Cyprus) Ltd.

Salvage 101

The Importance of Cooperation Between Parties.

By Leendert Muller

Cooperation between the shipowner, their underwriters, salvors and shore-based authorities is vital for a successful salvage operation and should begin at first notification of a casualty. This cooperation, however, should begin long before there is a casualty with contingency planning, preparation and training. Cooperative efforts, rather than conflict will go a long way towards mitigating the potential for environmental damage and pollution; damage to the vessel or its cargo and, most importantly, may prevent loss of life or injury to the crew.

NOT YOUR FATHER'S SALVAGE OPERATION

Today, salvage operations tend to be more expensive and technically complex compared to those in the past. This is, in large measure, due to the increased size of vessels, increased value of their cargo and external influences such as more demanding requirements from coastal state authorities. Governments look to protect their waters and it is rare when the local regulatory and government officials do not become intimately involved in aspects of the salvage service. The salvor is often at the mercy of these influences which can translate into added expense for the shipowner and underwriters.

Image above: Salvors attempt to connect to a casualty in difficult conditions. *All images courtesy ISU

Some examples of areas where cooperation can be heightened include contracting terms and conditions, dealing effectively with authorities, attending the vessel and ensuring places of refuge are made available, just to name a few.

Lloyd's Open Form (LOF) is still the most widely used salvage contract, even after over a century of constant use. At its heart is the requirement for the salvor to use his "best endeavors" to save the property and to prevent or minimize pollution damage while engaged in salvage operations. The Salvage Convention of 1989 imposes a similar requirement. Best endeavors inherently require the salvor to cooperate with others; he cannot operate in isolation. That effort needs to be reciprocated by the others who are also involved. Importantly, it also requires shipowners and insurers to be familiar with LOF and to understand its benefits. Improving the understanding of LOF is an area on which both the International Salvage Union and Lloyd's intend to campaign.

UNDERSTANDING LOF

LOF is often misunderstood. It is certainly not skewed in favor of the salvor who bears a high risk because of the "no cure - no pay" nature of the contract. Furthermore, salvors are liable for any misconduct or negligence in line with Article 18 of the 1989 Salvage Convention, which states, "a salvor may be deprived of a whole or part of payment due under the Convention to the extent the salvage operations have become necessary or more difficult because of fault or neglect on his part or if the salvor is guilty of fraud or other dishonest conduct." This regime is in stark contrast to most of the LOF substitute contracts.

Emergency response now takes place in a world that has adopted a virtual "zero tolerance" attitude to marine spills. Major spills are now a relatively rare occurrence, but they do still occur. One of the salvor's main roles is to stop this from happening: keeping pollutants in the ship or safely removing them and thereby preventing an emergency turning into a pollution catastrophe.

In short, we have seen the entire focus of salvage activity change over the last 25 years with pollution defense now taking priority over property salvage. And that, of course, helps to reduce the liability of insurers. The cost of salvage seems very modest when compared to the eye watering costs that a major spill will incur. But a key element in reducing property or liability claims is the timely involvement of salvage assistance.

WHEN A CASUALTY OCCURS

Today, no Master or salvage officer can operate in isolation because modern communications ensure that there is a regular contact between vessel and offices ashore. The result is that when a casualty does occur, the Master can very often obtain guidance and advice from his owners and their advisers. This may or may not be helpful. It may solve the problem, but it may also provide a false sense of security and introduce delay. Either way, a decision has to be made as to whether assistance, including salvage assistance, is needed.

A plan of action must be developed, and this will need to take into account the nature, circumstances and urgency of the situation; the extent to which the vessel's systems remain operational; the threat of pollution, manpower and material requirements and finally, what measures will be possible to avoid injury or loss of life if the vessel is in imminent peril.

A competent master will, in most cases, be best placed to assess these considerations and will be able to do so quickly. Considering these questions "second hand" from a warm office many hundreds or thousands of miles away is often not helpful and can lead to delay. In the early stages of a casualty situation, therefore, the best cooperation can be achieved if those actually at the scene are trusted to make decisions without undue influence and pressure from the shore.

Salvors do not achieve their successes in isolation. The outcome of many operations will depend on effective and efficient cooperation with many different parties most of whom have different views and objectives, including the authorities ashore. There are many conventions, guidelines, national response plans, rules and regulations which become relevant in any casualty. And, there are practical issues like equipment being delayed by customs or access to the ship being blocked or impeded. Sometimes, seemingly unreasonable financial demands may be made, all of which can prevent or hamper a successful outcome.

In most cases, the aim is to help the coastal state and all other parties to swiftly identify the best environmental option. The threat or reality of pollution will almost certainly generate acute political problems and sensitivities – at regional, nation-

al and, sometimes, international levels. There will be tension between central and local government and these pressures are felt most in the coastal communities which bear the brunt if pollution occurs or threatens.

BEFORE THE CASUALTY

Response effectiveness is increased by detailed contingency planning and joint training. Best practice calls for joint training and exercises involving response agencies and commercial salvors. Salvors need freedom of action if they are to use their best endeavors. They need to be confident that their plan, personnel and equipment will be supported by the authorities and the ship's interests. Most importantly, operational decisions must rest with the salvor, who has the experience and expertise to make time-critical safety and environmental judgements.

The International Salvage Union (ISU), the global trade association for the marine salvors, regards the UK model as an example of best practice in terms of command, control and cooperation. In the UK, a senior civil servant is appointed as the Secretary of State for Transport's Representative for maritime salvage and intervention (SoSREP), who combines an understanding of salvage with the appropriate amount of delegated political authority. In fact, under the UK system, politicians may not intervene while a salvage operation is still in progress. All the key decision-making is focused on just two individuals: SoSREP and the salvage master. This model is further enhanced when the ship's interests are aligned and supportive. In the United States, the Oil Pollution Act of 1990 (OPA-90) attempts to put into place a number of the cooperation issues discussed previously. While still a "work in progress," OPA-90 in its most basic form requires salvors, owners and insurers to "pre-contract" and otherwise attempt to develop some level of understanding before a casualty.

Anyone who has been involved in marine casualty response knows that the potential for disagreement, delay and confrontation is all too apparent. Circumstances are usually challenging, the environment is difficult, time is tight, the authorities are demanding and the sums of money at stake are enormous.

But it is essential that salvors and ship interests are aligned and work cooperatively together to prevent loss of life, injury and damage to the marine environment. Speed of response is the key and delay brought on by interference from those who are not at the scene and who do not have the full picture is to be discouraged. It is testament to the willingness of all parties to work like this that in the majority of cases there is real cooperation and, as a direct result, a successful outcome.

Leendert Muller, President of the International Salvage Union. The international Salvage Union is the global trade association for the marine salvors. Today, it has some 60 members.

Svitzer Salvage connects to a simulated casualty in a joint exercise with German and Dutch authorities.

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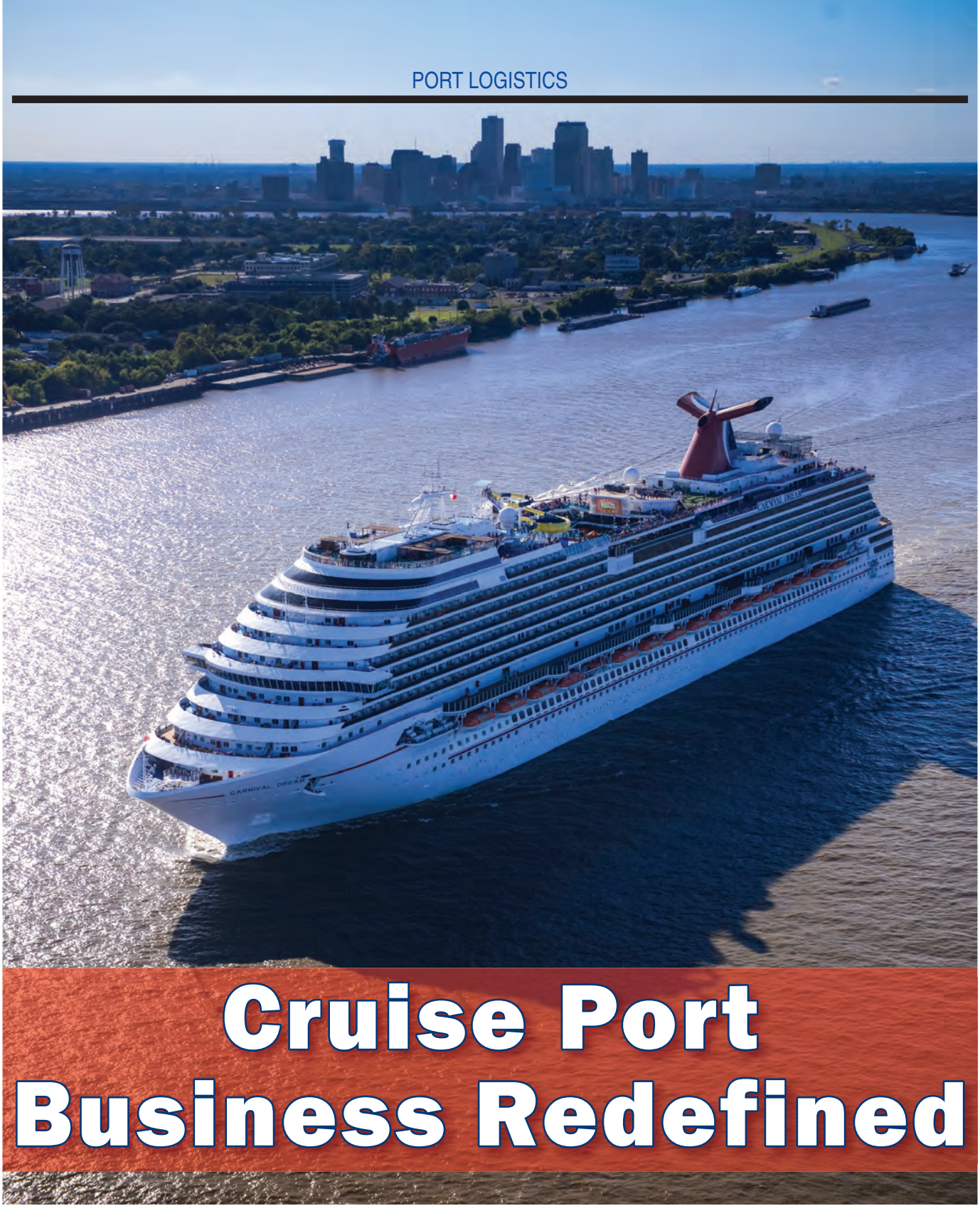

Cruise Port Business Redefined

New Orleans builds enviable cruise traffic on top of a carefully crafted business plan.

By Susan Buchanan

Image above: Cruise traffic underway in the Mississippi River

> "Cruise industry jobs here have roughly doubled in the last decade and continue to grow with consumer demand for larger cruise ships and more frequent cruises," Matt Gresham, spokesman for the Port of New Orleans said last month. "Most cruise-related port jobs are private-terminal operator jobs, along with sea caps and security, customs and fuel operators. The spinoff jobs, of course, include retail, hospitality, tour operators and food service."
>
> – Port of New Orleans president and CEO Gary LaGrange

It may surprise you to learn that, on the lower Mississippi River, cruise traffic now accounts for over one fifth of all revenue at the Port of New Orleans, a major cargo hub. With recently modernized terminals, able to handle big ships, the Crescent City last year accommodated over a million cruise passengers, setting its fourth straight record. How they did it is perhaps more impressive than what they have created, for the city, the region and the thousands of professionals they have put to work in the process.

"Two decades ago, the city's cruise business was a blip on the radar screen," Port of New Orleans president and CEO Gary LaGrange said last month. And yet, Cruise Lines International Association (CLIA), the official trade organization of the cruise industry of North America, recently ranked the Port of New Orleans the sixth-largest cruise port in the United States with direct industry expenditures in Louisiana totaling $406 million, supporting 8,129 jobs and accounting for $323 million in total income. The journey, not lacking in vision and a great deal of sweat equity on the part of many, wasn't nearly as complicated as one might think.

INFRASTRUCTURE IS EVERYTHING

Since Hurricane Katrina struck in 2005, the port has invested $64 million on the Erato and Julia Street Cruise Terminals next to the Warehouse District. Erato Street opened in 2006 at a cost of $40 million. LaGrange explains, "Julia Street was completely renovated for $20.1 million, and it combines two smaller terminals into one for large cruise ships."

Erato Street is the bigger of the two facilities. The Erato Complex was the industry's first intermodal cruise terminal to have a parking garage in the same building, Don Allee, the port's new cruise and tourism director, said last month. It's the homeport for two ships operated by Florida-based Carnival Cruise Line. The 1,004-foot and 128,251-ton Carnival Dream sails seven-day journeys from Erato Street, while the 855-foot, 70,367-ton Carnival Elation makes four- and five-day trips.

As impressive as the progress is to date, the port is not yet done. In the first quarter of this year, the port will begin construction on its Poland Avenue cruise terminal near the former U.S. Naval Support Activity site, which closed in 2011. That complex in the city's Bywater section has been called the Port of Embarkation since WWII. Under an agreement, the U.S. Maritime Administration transferred two berths at the Poland Avenue Wharf to the port to build the cruise terminal. Downriver from the central business district, and for cruise passengers staying in French Quarter hotels, the terminal is just three miles away by car.

The Erato cruise facility should be finished this fall. "Our planned use for it at first will be for port-call ships that need berths for one- to-three-day stays in New Orleans as part of their itineraries," LaGrange said. The port's Julia Street and Erato Street cruise terminals have four, home-ported ships that take up berths on Saturdays and Sundays. LaGrange adds, "The new Poland Avenue berth will allow us to attract more port call ships, bringing more tourists to the city for stays." And port officials have spoken with Florida-based Disney Cruise Line and other companies in an effort to bring even more traffic.

Working every angle, the port financed the Poland Avenue project's expected $30 million price tag with $21.5 million from the state's Port Priority Construction Program and the state's Capital Outlay funds, LaGrange said. The rest is from the port's annual capital construction budget.

RISING PASSENGER COUNT DOUBLES EMPLOYMENT

In 2014, Port of New Orleans terminals handled more than one million cruise passengers, based on embarkations and

Cruise ships berth at the Port of New Orleans Erato Street Cruise Terminal and Julia Street Cruise Terminal.

Brandy Christian, Chief Operations Officer, Port of New Orleans

disembarkations. Last year's count was up more than 2.6 percent from 2013, and it was nearly three times as many as in 2001, when the port began marketing itself assiduously as a cruise destination. In the latest data from Washington, DC-based CLIA, the city's 987,860 embarkations and disembarkations from cruises in 2013 spawned $399 million in spending in Louisiana and supported thousands of jobs.

Over 80 percent of passengers are from out of state, and on average they stay two nights in New Orleans hotels before or after sailing, the port said. Passengers and shipboard crew spend about $78 million annually in the Crescent City, including $27.5 million on lodging and $8.3 million on food and beverages.

"Cruise industry jobs here have roughly doubled in the last decade and continue to grow with consumer demand for larger cruise ships and more frequent cruises," Matt Gresham, spokesman for the Port of New Orleans said last month. "Most cruise-related port jobs are private-terminal operator jobs, along with sea caps and security, customs and fuel operators. The spinoff jobs, of course, include retail, hospitality, tour operators and food service." According to CLIA, the cruise industry provided 8,129 jobs, paying nearly $323 million in wages, across Louisiana's economic sectors in 2013.

Nipping on the heels of better known cruise destinations such as Miami and Port Everglades, the port of New Orleans can point to the doubling of passenger embarkations between 2009 and 2013 as a sign that the destination works and that satisfied customers are spreading the word.

HOMEPORT: NEW ORLEANS

Carnival Cruise Line, Norwegian Cruise Line and Royal Caribbean International all rely on New Orleans as a home-

A cruise vessel alongside and bunkering at the Port of New Orleans.

port for some of their ships. In July, the port signed a new five-year agreement with Carnival, keeping the world's biggest cruise line sailing at least two vessels from the city year-round through 2019. Carnival now has homeported two vessels now at the Erato Street Terminal, including the 3,646-passenger Carnival Dream, which can hold up to 4,400 people with multiple occupancies. Last April, it began seven-day trips from the Crescent City to the eastern and western Caribbean. The 2,052-passenger Carnival Elation makes four and five day trips to Mexico from Erato Street.

Carnival last year carried about 330,000 passengers through New Orleans, based on single-count embarkations. And it took 660,000 passengers, based on double-count embarkations and debarkations. Not to be outdone, in late November, Miami-based Norwegian Cruise Line signed a four-year berthing agreement to keep at least one ship sailing from New Orleans seasonally through 2018, with an option to extend the accord to 2021. Late last year, the company began sailing its 2,340-passenger Norwegian Dawn from the Julia Street terminal on seven-day trips to Mexico, Belize and Honduras through this April.

Miami-based Royal Caribbean International began homeporting its 2,476-passenger, 965-foot Serenade of the Seas at Julia Street for trips to the eastern Caribbean as far back as 2013. Before that, the operator's Navigator of the Seas was docked there.

RIVER AND COASTAL CRUISING – NEW OPTIONS, MORE JOBS

New Orleans is also fast becoming a hub for coastal and river cruises. Connecticut-based American Cruise Lines sails its 295-foot sternwheeler Queen of the Mississippi from the city. And the 418-foot American Queen, operated by American Queen Steamboat Co. in Memphis, Tenn., travels to New Orleans. Rhode Island-based Blount Small Ship Adventures has run cruises to the city on its Grand Caribe vessel.

River and inland cruise lines don't carry as many passengers as blue water ships but they're important to the port's activity, LaGrange said. "These passengers come to New Orleans and stay a few nights before or after their cruise," he said. "Inland cruises stop at other attractions and sites in Louisiana, including plantation homes, small river communities and historical attractions. They contribute considerably to the economies of those areas." River and inland cruises accounted for about 10,000 passenger embarkations in New Orleans last year. That number is also expected to grow.

> In 2014, Port of New Orleans terminals handled more than one million cruise passengers, based on embarkations and disembarkations. Last year's count was up more than 2.6 percent from 2013, and it was nearly three times as many as in 2001, when the port began marketing itself assiduously as a cruise destination. In the latest data from Washington, DC-based CLIA, the city's 987,860 embarkations and disembarkations from cruises in 2013 spawned $399 million in spending in Louisiana and supported thousands of jobs.

PORT'S CRUISE CAPACITY MAXIMIZED, LOGISTICS STREAMLINED

Asked whether the port has ever turned away cruise business because of berthing space, LaGrange said no. "We have marketed to our capacity, and we intend to expand capacity in the future," he said. As for berthing fees, he said agreements with individual lines differ, but are very competitive within the industry. But, what the cruise lines get for their money is apparently worth it.

For example, getting on ships with luggage often looks arduous, and it can be tough in real life. Logistics have been streamlined in New Orleans, however. According to Don Allee, the Erato Street Cruise Terminal is considered the nation's most convenient and efficient. Beyond this, the 90,000 square-foot site has a 1,000-vehicle garage built into its structure. "At Erato Street, SeaCaps take luggage from passengers' vehicles to the ship, and an elevator transports guests directly to the terminal for check-in," LaGrange said. "At Julia Street, ground-level parking is adjacent to the terminal, and guests check their luggage while on the way to park their vehicles."

Robert Jumonville,
recently retired Port of New Orleans
Cruise and Tourism Director.

Don Allee,
Port of New Orleans' new
cruise and tourism director.

HEIGHTENED PACE CALLS FOR NEW FACES

Underscoring the importance of the port and the new surge in cruise business, New Orleans continues to attract top talent to the waterfront. And, because of retirements, the port has some new faces. Don Allee began there in November after serving as CEO of the Mississippi State Port Authority from 2002 to 2012 and then as a port expert at PLG Consulting. He's also a former director of the Port of Beaumont in Texas. Allee replaced Robert Jumonville, who retired in January after 25 years at the Port of New Orleans. Jumonville oversaw the cruise-terminal expansions, and based on his accomplishments, won a 2015 American Association of Port Authorities Cruise Award in early February in Fort Lauderdale. Under Jumonville's watch, the Port saw a 1,200-percent rise in passenger throughput and revenues produced by the Cruise and Tourism Division increased more than 500 percent.

Separately, former Port of San Diego vice president Brandy Christian was named chief operating officer at the Port of New Orleans in January, replacing Patrick Gallwey, who retired after 34 years. During her tenure with California's fourth largest cargo port, Christian was said to be the driving force behind securing major accounts for the cruise and cargo business lines at the Port. She was also instrumental in significantly improving operational processes and reducing costs for the public agency. As New Orleans looks to build on its recent cruise success, Christian will likely be an important part of that process.

Today, cruise traffic generates about 21 percent of the port's annual revenue, with cargo (70 percent) and industrial real estate (9 percent) accounting for the balance of income. That balance could shift in the near future. As far back as 2002, LaGrange created the Division of Cruise and Tourism to include the port's tourism tenants--Hilton Riverside Towers, Audubon Aquarium of the Americas, Woldenburg Park, Blaine Kern's Mardi Gras World, The Outlet Collection at Riverwalk, and the Creole Queen and Natchez excursion boats. That move and the new infrastructure, are combining to pay dividends.

Looking ahead, the recent news that President Barak Obama wants to ease trade and travel restrictions with Cuba is music to the ears of Allee. "Someday cruise ships will sail between the United States and Cuba, but it's too soon for that now," Allee said. For now, U.S. food and humanitarian aid can be shipped to Cuba, and Americans who are close relatives of Cubans, or academics, or on cultural and educational "people-to-people programs" can visit. At one time, though, New Orleans was a major gateway to Cuba for freight. The port is watching those developments closely.

Gary LaGrange explains the port's formula simply. "We sell New Orleans as two vacations in one. Come for our music, cuisine and history, and then embark on your cruise." So far, that marketing strategy has worked exactly to plan. But, you get the feeling that he is far from done on this ongoing effort, when he adds, "We're constantly marketing the city as a world-class cruise port, and we hope to make some announcements this year about new lines and expanded offerings." None of that is possible with leadership, infrastructure and a good product to sell.

Cruise Critic, a cruise review and information web site, recently named the Port of New Orleans its "Best North American Homeport." Accolades like that could someday see it as the nation's busiest. Until then, Gary LaGrange and his management team can be happy that it has become one of America's best.

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