



Global Maritime Weekly Digest

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29 May 2018

issue 122

*The **Global Maritime Weekly Digest**, based at **SOLENT University**, provides a regular flow of maritime news and analysis, of significance in a global context.*

Topics covered include shipping fleets and management, seaborne trade, ports, shipbuilding, ship recycling, maritime policy and regulations, and seafarers' labour.

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Editorial comments

- New rules to reduce the sulphur content of fuel used by ships involved in international trade could result in **big changes in the markets for crude oil as well as bunkers** from 2020 onwards. But how well prepared are the energy and shipping industries to cope with these changes? Some analysts argue that a smooth transition is unlikely due to inadequate preparation (item 1).
- A massive **shift from high sulphur fuel oil to marine gasoil** is seen as the most likely outcome of the new regulations since the main alternative, installing scrubbers to clean exhaust emissions, involves a heavy capital cost which is unlikely to appeal to most shipowners. However, there are doubts about whether oil refiners globally will be able to produce enough lower sulphur distillates.
- The world's **ship recycling industry is being reshaped** by the Chinese government's decision to ban scrapping of foreign vessels in the country's recycling yards (item 5). A consultancy firm emphasises that this decision will benefit the main alternative buyers in South Asia – Bangladesh, India, and Pakistan.
- Some commentators raise **questions about exuberance for autonomous shipping** recently expressed (item 7). Will it be as widely applicable as some enthusiasts think? A new study paper recommends caution, suggesting instead that the focus of autonomous systems might be on raising efficiency, reducing emissions and pollution, and on accident preventions and safety.
- The **involvement of banks in shipping finance** has receded over a number of years. Based on a fresh survey of Greek owners, however, bank's contributions are showing signs of stabilising and could start to revive, amid diminishing problem loan portfolios and loan provisions (item 6).

(1) Hellenic Shipping News, 19 May 2018/ Reuters

New rules on ship emissions herald sea change for oil market

New rules coming into force from 2020 to curb pollution produced by the world's ships are worrying everyone from OPEC oil producers to bunker fuel sellers and shipping companies.

The regulations will slash emissions of sulfur, which is blamed for causing respiratory diseases and is a component of acid rain that damages vegetation and wildlife.

But the energy and shipping industries are ill-prepared, say analysts, with refiners likely to struggle to meet higher demand for cleaner fuel and few ships fitted with equipment to reduce sulfur emissions.

This raises the risk of a chaotic shift when the new rules are implemented, alongside more volatility in the oil market.

"The reality is that the industry has already passed the date beyond the smooth transition," Neil Atkinson, head of the oil industry and market division at the International Energy Agency (IEA), said in April.

What are the new rules?

The rules, drawn up by the U.N. International Maritime Organization (IMO), will ban ships using fuel with a sulfur content higher than 0.5 percent, compared to 3.5 percent now, unless a vessel has equipment to clean up its sulfur emissions.

Any vessels failing to comply will face fines, could find their insurance stops being valid and might be declared "unseaworthy" which would bar them from sailing.

How will it affect the fuel oil market?

The global shipping fleet now consumes about 4 million barrels per day (bpd) of high sulfur fuel oil, but about 3 million bpd of that demand will "disappear overnight", according to the average market forecast calculated by Norway's SEB Bank.

Most demand is expected to shift to marine gasoil, a lower sulfur distillate fuel.

Morgan Stanley predicts this will generate at least 1.5 million bpd in extra demand for distillate in the next three years, pushing up total distillate demand growth for the period to 3.2 million bpd.

That, in turn, will drive up prices. Gasoil now trades at a premium of about \$250 a ton to fuel oil, but the forward curve forecasts this will balloon to \$380 per ton by early 2020.

Thomson Reuters Research estimates fuel accounts for about half a ship's daily operating cost. Based on average fuel consumption of 20 to 80 tonnes a day (MT/day), a ship using cleaner fuel faces extra daily expenses of about \$6,000 to \$20,000.

For example, a VLCC, one of the biggest oil tankers at sea, will pay 25 percent more for its fuel, or an extra \$500,000 on top of normal bill of \$2 million, for a typical 25-day voyage from the Middle East to Japan.

Will 'scrubbers' help the shipping industry?

Shipowners can install kit called a "scrubber" that strips out sulfur emissions and allowing them to use the dirtier fuel oil. Some ships already have them. Global trading firm Trafigura has ordered scrubbers for its fleet of 32 ships.

But the equipment alone can cost \$1 million to \$6 million, according to manufacturer Wartsila, putting it out of reach of many operators.

By 2020, about 2,000 ships could have scrubbers, according to Wartsila, SEB Bank and industry analyst AlphaTanker.

But AlphaTankers' Andrew Wilson called this a "drop in the ocean", given there are about 90,000 vessels in the global fleet, of which about 60,000 ply international routes.

Based on the limited number of manufacturers and time constraints on facilities to install scrubbers, AlphaTanker estimates no more than 500 ships could be fitted each year. Wartsila puts the figure closer to 300.

So it would take more than 100 years to fit the global fleet.

Will everyone follow the rules?

Many vessels may try to dodge the new rules, unable to afford the cost of scrubbers and reluctant to pay the premium for cleaner fuel. But how much of the industry will cheat is open to debate, with estimates ranging from 10 to 40 percent.

The IMO says it will ban ships that do not have scrubbers from carrying any fuel oil, making it easier to catch cheaters.

Oil major BP expects 10 percent of ships could cheat, while consultancy Wood Mackenzie expects a figure of about 30 percent when the rules launch in 2020. Consultant Citac says industry polls indicate cheating could be in a range of 25 to 40 percent.

Can refiners meet new demand?

The global refining industry needs to process an extra 2.5 million bpd of crude to make distillates for cleaner fuel, says Robert Herman, refining executive at Phillips 66.

Some refiners have invested in cutting sulfur in their output, but fitting hydrocracker or coker unit so that a refinery produces more distillates with lower sulfur content while reducing fuel oil output can cost about \$1 billion, analysts say.

Small refineries, unable to afford the upgrade, may find they are churning out fuel oil without finding buyers.

A KBC consultancy survey showed 40 percent of Middle Eastern and European refineries are not prepared. European plants, which tend to be less complex than those in other regions, produce more fuel oil and may face the biggest challenge.

Morgan Stanley says refineries of Spain's Repsol (REP.MC), Turkey's Tupras, India's Reliance (RELI.NS) and U.S. independent Valero (VLO.N) are among the best prepared because they already produce high middle distillate and low high-sulfur fuel oil.

What will happen to the crude market?

The simplest way for refineries to produce fuel with less sulfur is to buy and process crude that contains less sulfur, a shift that could change demand for different oil grades and lead to greater oil market volatility.

For example, processing Iraq's Basra Heavy grade with high sulfur content produces as much as 50 percent fuel oil, while using light, sweet North Sea crude with less sulfur produces about 12 percent fuel oil.

"There will be a bidding war for sweet crude," said Stephen George, chief economist with KBC Advanced Technologies.

This could hike the price of sweeter crudes, including several grades used to make dated Brent, the benchmark for three quarters of the world's oil. Meanwhile, the cost of refining "sour" crudes with more sulfur, such as those from Venezuela, Mexico and Ecuador, "could be more than its value," he said.

Who will pay the price?

Energy firms and shippers may face a squeeze on margins. But, ultimately, extra costs are likely to fall on consumers of everything from household appliances to gasoline that are shipped around the world.

Roughly 90 percent of world trade is by sea.

Wood Mackenzie estimates that global shipping fuel costs are likely to rise by a quarter, or \$24 billion, in 2020. Others estimate extra costs for container shipping alone will be \$35 billion to \$40 billion.

In addition, a surge in distillate demand by shippers could push up prices of other products, such as jet fuel and diesel.

"It's going to make moving anything more expensive," said AlphaTanker's Wilson.

Source: Reuters (Editing by Edmund Blair)

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(2) International Energy Agency, 16 May 2018

IEA warns global oil demand may suffer as crude nears \$80: From fundamentals to geopolitics

The decision by the United States to withdraw from the Joint Comprehensive Plan of Action regulating Iran's nuclear activities has switched the focus of oil market analysis from the fundamentals to geopolitics. In these early days, there is understandable uncertainty about its potential impact on Iran's oil exports, which are currently about 2.4 mb/d. There is a 180-day period for customers to adjust their purchasing strategies and it remains to be seen how waivers and other aspects of the sanctions will be implemented. In addition, other signatories to the JCPOA have said that they will continue with the agreement.

When sanctions were imposed in 2012, Iran's exports fell by about 1.2 mb/d. It is too soon to say what will happen this time, but we should examine whether other producers could step in to ensure an orderly flow of oil to the market and offset a disruption to Iranian exports. Neither Venezuela nor Mexico can raise output in the short term, but some of the 1.5 mb/d that have been cut by other producers under the Vienna Agreement might be available to keep markets well supplied. A statement by Saudi Arabia shortly after the US announcement acknowledged the need to work with producers and consumers to mitigate possible supply shortfalls. This is especially welcome since the possibility of lower Iranian exports is not the only supply risk hanging over the market today.

In Venezuela, the pace of decline of oil production is accelerating and by the end of this year output could have fallen by several hundred thousand barrels a day. Our April data show that Venezuela's production is 550 kb/d lower than its target under the Vienna Agreement and this "excess" is more than Saudi Arabia's total commitment. The potential double supply shortfall represented by Iran and Venezuela could present a major challenge for producers to fend off sharp price rises and fill the gap, not just in terms of the number of barrels but also in terms of oil quality.

The decision by the US Administration had, to some extent, already been factored into oil prices. Even so, alongside steady demand growth, solid compliance with the Vienna Agreement, and new data showing a further fall in stocks, it contributed to Brent prices rising above \$77/bbl. As key players consider how to react to the new policy, this Report shows that the market balance continues to tighten, though by slightly less than seen last month. Because of rising prices, we lowered our estimate for 2018 global oil demand growth by 40 kb/d to 1.4 mb/d, and we increased our expectation for US oil production growth this year by 120 kb/d.

As the International Monetary Fund noted recently, the global economy is doing well. Therefore, we remain confident that underlying demand growth remains strong around the world, which has been an important factor in the rise in oil prices. Still, the fact is that crude oil prices have risen by nearly 75% since June 2017. It would be extraordinary if such a large jump did not affect demand growth, especially as end-user subsidies have been reduced or cut in several emerging economies in recent years.

On the supply side, in today's uncertain geopolitical climate, higher production from the US will be an important contribution to compensating for lower volumes from elsewhere. For now, this Report shows a modest increase in our estimate for US output growth in 2018, mindful of the current logistics constraints that have manifested themselves in the extraordinary widening of the differential between WTI prices at Midland and the Gulf Coast to \$15/bbl. We note that several projects are in development to ease regional bottlenecks and to help rising US production reach markets.

For some time, the focus has been on OECD stocks, and new data show a further decline in March of 27 mb to the lowest level in three years and to 1 mb below the widely cited five-year average figure. For now, the rapidly changing geopolitical landscape will move the attention away from stocks as producers and consumers consider how to limit volatility in the oil market. For its part, the IEA will monitor developments closely and is ready to act if necessary to ensure that markets remain well supplied.

Source: IEA

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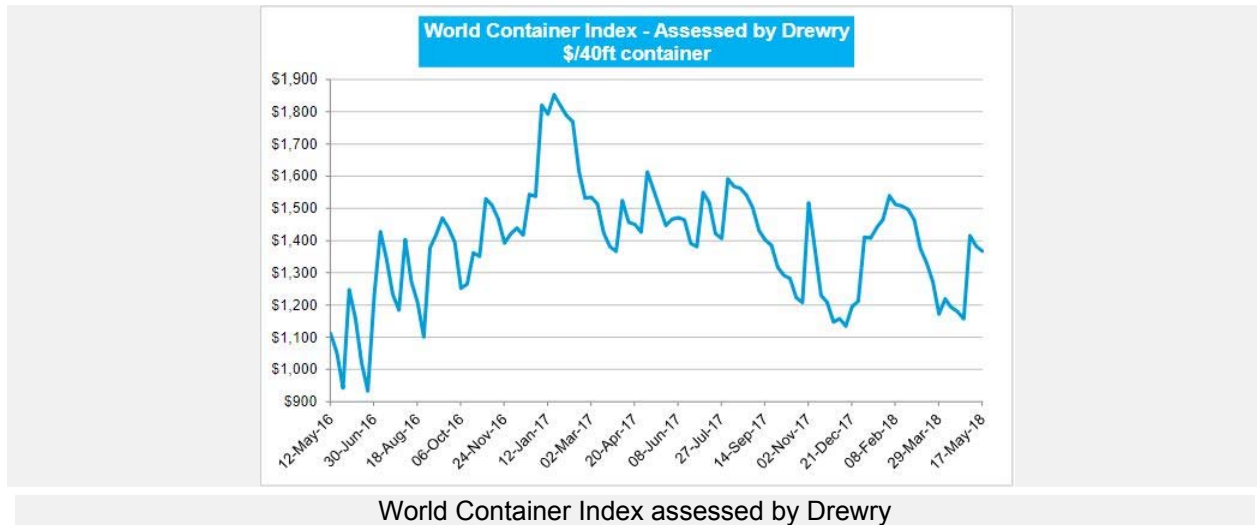
(3) Drewry, 17 May 2018

Drewry: World Container Index Down By 1.1%

The composite index is down by 1.1% this week, was also down by 8.9% from the same period of 2017. The average composite index of the WCI, assessed by Drewry for year-to-date, is US \$1,365/40ft container, which is \$172 lower than the five-year average of \$1,537/40ft container.

The composite index, calculated by Drewry, went down slightly by \$15 per feu. Transpacific headhaul rates displayed a similar trend. Rates from Shanghai to New York decreased by \$95 to reach \$2,472 per 40ft. Similarly, rates from Shanghai to Los Angeles dropped to \$1,397 – a change of \$14 per feu. Rates from Shanghai to Rotterdam inched up by \$22 for a 40ft box to \$1,459, whereas backhaul rates fell by \$14 per feu. Transatlantic headhaul and backhaul rates were stable. Drewry expects rates to soften next week.

Two-year spot freight rate trend for the World Container Index:



Source: Drewry
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(4) Hellenic Shipping News, 22 May 2018/ Bloomberg

Reasons Why Global Growth Is Speeding Up, Not Slowing Down

Investors and economists are increasingly at odds over the outlook for the world economy. Those trading money worry the low-inflation, solid growth of the past year is coming to an end, leading to nervous equities and bonds. By contrast, economists and policy makers wager the first-quarter slowdown was a blip and that a decent expansion will soon resume. Here's our weekly wrap of what's going on in the world economy.

Blip Slowdown

For the optimists, there are signs of a rebound all over the world. The U.S. is showing more momentum on the back of a revived consumer, and China is enjoying surprisingly robust manufacturing growth. Japan sees its rare first-quarter contraction as a speed bump as exports gain momentum. Euro-area officials are expecting a recovery too. Perhaps the biggest reason for concern is skittish markets end up pulling down the economy by undermining the confidence of consumers and companies. Still, Bloomberg economists are relaxed about the potential for \$100 oil and 3 percent U.S. bond yields.

On The Other Hand

For your glass half-empty take look to emerging markets, who perhaps have the Federal Reserve to blame. Harvard professor Carmen Reinhart sees them in a weaker position than they were when last crises hit. Here's what the numbers show. As investors zero in on faultlines such as current account deficits, central banks from India to Mexico are set to raise interest rates faster than economists previously anticipated. The juiciest monetary policy news came out of Turkey, where President Recep Tayyip Erdogan told Bloomberg he's ready to wield a heavier hand on the economy and central bank if he wins an election next month.

Fedspeak

Fed officials were quite chatty this week. There was plenty of talk on the yield curve, including who flattened it and whether we should be worried about its evolving shape. The magic number of interest-rate increases this year is still up for debate, with Dallas Fed President Robert Kaplan and Atlanta's Raphael Bostic sticking to three hikes this year as a base case, and the San Francisco Fed's John Williams seeing as many as four. Cleveland Fed chief Loretta Mester told Bloomberg that slow and steady inflation

supports the Fed's gradual rate-hike path. Richard Clarida, President Donald Trump's nominee for the No. 2 job at the Federal Reserve, is sounding a lot like Chairman Jerome Powell.

Central Banker Dilemmas

It's not just the emerging markets looking hawkish. The Riksbank might break a seven-year streak, with an increase as early as October. The European Central Bank's first hike could come in 2019, "some quarters" after it ends the bond-purchase program, ECB official Francois Villeroy de Galhau told Bloomberg. Poland reckons the world is coming round to its view. Meanwhile, Bank of England Deputy Governor Ben Broadbent had a bad week.

Trade Squabbles

The U.S. and China seemed earlier this week to be cooling tempers over beleaguered telecom equipment maker ZTE Corp., with Trump pledging relief for "too many jobs in China lost." Top Chinese economic official Liu He visited Washington amid louder calls from U.S. businesses about the need for the U.S. president to pump the brakes on tariffs ahead of a May 22 deadline. During the visit, Liu may or may not have offered to reduce China's annual trade surplus with the U.S. by \$200 billion through increased imports of American products. And Trump's team is feeling the urgency to close a deal on Nafta due to a complicated U.S. legislative process that could bump against midterm elections.

Source: Bloomberg

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(5) Drewry, 9 May 2018

China's ban on scrapping foreign vessels will be a boost for South Asian recyclers

In another move to control and prevent pollution, China the fourth largest shipbreaker in the world has decided to ban the demolition of foreign flagged vessels and offshore units at Chinese yards from 31-December, 2018. Chinese scrapyards will no doubt take a hit with competing South Asian being the main beneficiaries.

In a zero sum game, yards in South Asia will gain while share of Chinese yards will shrink

The 2019 ban will mean fewer demolition candidates for Chinese scrapyards, thereby translating into lower earnings. As a result we expect structural changes to take place in the Chinese scrapping market. We expect a less fragmented market with an exit of small scrap yards and a consolidation of existing players in a competition for survival.

Looking back nearly 66% of the total vessels scrapped at Chinese yards in 2017 were foreign flagged vessels. In other words, any such ban in 2017 would have left China with just 44 Chinese flagged vessels instead of the 128 vessels that were actually scrapped. Moreover, Chinese flagged vessels form only a small share of the global fleet. In fact, in the present fleet of merchant vessels more than 10,000 dwt and aged 20 years or more, only 3.7% fly a Chinese flag. As such, only low numbers of Chinese flag vessels are likely to be scrapped in the short term.

In the absence of Chinese scrapyards, owners of non-Chinese flagged vessels, which earlier parked their ageing vessels at Chinese scrapyards, will shift to yards in South Asia. India tops the list of demolition locations, with about 27% of global scrapings going to Indian yards, followed by Bangladesh and Pakistan; at 20% and 11% respectively.

Impact on Chinese shipowners

Meanwhile the ban is unlikely to cause any real hardship to Chinese ship owners as more than 90% of Chinese flagged vessels have been demolished at Chinese scrapyards since 2014. The ban will follow a three year long scrap and build policy, which provides local shipowners with a subsidy of \$120 per gross tonne for ships recycled at local yards, which has meant that more than 90% of Chinese flagged ships scrapped in the last four years have gone to local breakers.

Source: Drewry

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(6) Petrofin Bank Research, 28 May 2018

Are Banks Back into Shipping Finance? The outlook for 2018 and beyond

2017 was a year in which market sentiment, especially in the dry market, showed some improvement. In addition, global economic growth and international trade continued to grow at a robust pace approaching 4% p.a. overall. With the slowdown in new vessel deliveries across a number of sectors, the improved sentiment allowed for some cautious optimism among banks. For a small number of banks, it presented the opportunity to continue their growth and increase market share, whilst for others the opportunity to reduce or sell large parts of their loan portfolios. At the same time, yoy loan provisions started to fall. The above changes have impacted to an extent on the 2017 Bank Research © but they are expected to impact more fully in the forthcoming end 2018 research.

It is becoming apparent that the impact on the total number of those banks, which are either downsizing or leaving shipping, is beginning to run its course and will be a reduced factor henceforth. Problem loan portfolios and loan provisions have also started to reduce. It is very encouraging to note that as bank loan margins are attractive and bank loan demand is high, a number of banks have either commenced lending into Greek shipping or have started to increase their commitments. The new banks are either based in Europe e.g. Bank of Cyprus, Hellenic, Amsterdam Trade Bank, M&M, Corner Bank and others or are local banks, primarily in Singapore, Malaysia, Hong Kong and Dubai. It should be noted that Orix, which have until recently been a leasing financier has commenced, selectively, to lend to top Greek names, on a traditional bank loan basis.

Whilst it remains difficult to forecast future Greek ship finance numbers, it is safe to say that a slowdown in the rate of decline in Greek ship finance lending is expected to commence in the next couple of years. In the event that more shipping segments show improved market prospects, it is well possible that Greek shipping shall start to grow, once again, supported to a large extent by the further growth of Far East lenders. Bank lending terms continue to be strict and lending criteria high. Still, traditional bank lending represents the least expensive source of finance (except for export finance, in most cases).

With demand for loans far outstripping supply, as evidenced by the continuous growth in the Greek owned fleet, it is not surprising that other forms of finance have become increasingly popular among owners. Leasing has become the main choice of many small to medium owners, even though Chinese leasing companies prefer larger transactions. The lending ratios of such leasing companies are more aggressive than the 50% – 60% offered by banks and often exceed 70%. The increased risk is reflected in higher costs, which normally exceed bank finance costs by 1% – 2% and do commit owners to long-term transactions. However, as timing of purchases is of paramount importance to Greek owners, the extra cost is absorbed into the vessel's acquisition cost.

Lastly, we have witnessed increased interest by Japanese leasing companies, especially for Japanese newbuildings. Such terms are not dissimilar to banking terms. Private equity funds have not only increased their presence in providing investment funds to Greek owners by Petrofin Bank Research© – www.petrofin.gr May 2018 30 sharing in projects but also in offering finance. Their terms are normally high e.g. 9% – 12% per annum, including fees and the cost of funding. In compensation, such funds tend to be swifter in providing their approval, more flexible, allow for longer lending profiles and provide higher finance margin ranging from 50% – 70% of vessel values, depending on the client. The number of such funds (both investment and finance) has multiplied and their interest is currently more focused on second hand vessels.

The Norwegian KS market and the Norwegian investment and finance market has continued to support owners and Greek names have often figured in Norwegian deals. This market has increasingly become more opportunistic and less yield oriented, emphasizing those relative sectors, which offer enhanced recovery potential. Greek banks are clearly committed to Greek shipping as one of the very few sectors in which they can provide their full range of services and build up quality client relationships. Despite the Greek economic difficulties and the high levels of nonperforming loans (the vast majority outside Greek shipping), these banks have nurtured their Greek clients and have increased their lending. As Greek banks and the Greek economy's prospects shall hopefully improve, so will Greek bank lending, in years to come.

In conclusion, shipping market prospects appear to be stabilizing and, in some sectors, improving. This will further propel Greek interest in acquiring more newbuildings and second hand vessels and the enhanced appetite will result in more bank finance and non-bank finance being used. The deleterious prospects of a tariff war and the economic effects of increased sanctions on Iran, Russia and possibly other countries, do appear to dampen hopes of a strong increase of international trade, which is expected to remain, according to analysts and the IMF, at approximately 3.5% per annum. As usual, it will be the supply position and newbuilding orders that will impact on the shipping markets. Thus far, the overall shipping fleet is growing at levels commensurate with the rise of demand but this may easily change. We need to also highlight the rise in US interest rates to higher levels e.g. 5-year swap at over 3% p.a. This is a worrisome trend that will adversely impact on vessel breakeven costs. Lastly, the risk / reward of bank ship finance appear to be improving. A more stable international financial climate for banks, coupled by enhanced prospects in shipping, is expected to result in more banks becoming willing to lend into the Greek market. This is a welcome development and prospect.

Source: Petrofin Bank Research

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(7) Lloyd's List, 23 May 2018

Viewpoint: gradations of autonomy

Small unmanned craft operating in coastal waters cannot be merely extrapolated to large international vessels

By Michael Grey

We need to be clear about what it is we mean by our definitions of autonomy, between the robots being in charge and automation helping humans

ARE we ever going to see the 'maintenance-free' ship?

It was a phrase much used in Japan during the 1980s, when the shipbuilding industry in Japan was looking for a technological lead to persuade owners to order ships from its starving shipyards.

Much research went into the subject, most notably in the areas of main machinery and auxiliaries, but also in coatings that would keep corrosion at bay. I recall attending a presentation in Tokyo at which some of the exciting work on ceramics, promising much reduced wear in machinery, was revealed.

That was nearly 40 years ago, but while there is no doubt that modern machinery is a lot more reliable than that of this earlier era, we are still a long way off the aim of a ship that can be packed off to the ends of the earth with no human intervention in the maintenance department. And the Japanese, who are nothing if not realists, have noted that if you are going to build advanced ships, they still must be affordable to potential customers.

I thought of these matters while looking at some of the material that is before the IMO Maritime Safety Committee as its members consider their 'regulatory scoping exercise' for autonomous ships.

I guess it is important to consider the regulatory background under which these disruptive technologies may be introduced, before they start appearing and frighten those operating conventional ships to death.

There are already cautionary lessons from the introduction of driverless cars on the public roads.

The distinguished IMO delegates to the MSC will have plenty to consider, in the various interventions that have been produced for the meeting.

Should we be slightly concerned at the amount of governmental enthusiasm for autonomy, with several maritime nations already declaring that they see this as the means of establishing a leading role for their own industries?

In almost these cases it is the manufacturers who are making the running and pushing ahead with their important research, encouraged by funding. And yet, the people who will buy these products, whenever and wherever they eventuate, seem markedly cool about these opportunities. Might their reservations about affordability be behind these reservations?

If you are looking for a notably objective view on the future of what are to be known as "maritime autonomous surface ships", it is worth looking at the paper that has been produced by the International Federation of Ship Masters Associations and the International Transport Workers Federation. It consists

Please note: this publication is intended for academic use only, not for commercial purposes

of comments on the issues that need to be thought through, as the way forward for the regulatory oversight of these ships is considered.

Do not dismiss this as trade unionists being obstructive to progress — it is packed with common sense, produced not by people who make this stuff, or research it, or even buy it; these are the views of experienced mariners and engineers who operate the ships of today, and their ideas are crucial.

There is also a fine discussion of the issues that has been produced because of a survey of members of the UK/Netherlands/Swiss officers' union Nautilus, which is worth reading for the clarity it brings to the basic issues.

There is a telling comment from a senior engineer officer who notes that he has never sailed on a ship in which there was not some sort of breakdown that required on board intervention every two days. This is the real world of commercial shipping circa 2018, which brings us back, with a bump, to the 40-year-old 'maintenance-free' debate.

The IFSMA-ITF paper notes we need to be clear about what it is we mean by our definitions and the various gradations of autonomy between the robots being in charge and automation helping the humans. It may not be easy to fit certain ships into the categories.

The AI people may bridle at the doubts that a remote operator ashore with all manner of sensors "can attain the same level of situational awareness and safety as an onboard operator monitoring the same displays".

But I bet there is scarcely a professional afloat who would disagree. And the joint paper emphasises that the issues go far beyond navigation and the suggestion that the ship's main propulsion, auxiliaries and fuel, lubrication and cooling are expected to operate for extended periods without on board crew to maintain them.

They point out that small unmanned craft operating in coastal waters of a state cannot be merely extrapolated to large international vessels. Caution is advocated, despite the pressures from aspirational manufacturers being hurried along by the maritime media. We should not rush to regulate before we know what we are regulating.

This useful discussion paper asks whether instead of going all-out for autonomous systems it may be more sensible at this stage to focus upon their role in increasing efficiency, the reduction of emissions and pollution, accident prevention and safety. It would make a lot more sense, but I fear there will be no stopping the scientists.

And in passing, as I note that Carnival has opened its all-singing, all-dancing operations centre in the US, it might not be premature to examine the role and responsibilities of those on board, if their every action is to be micromanaged from ashore.

The IMO could do with a bit of regulatory scoping in this area, perhaps?

Source: Lloyd's List

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