



IRCLASS

ROUND TABLE

DEBATE

IRCLASS ROUND TABLE EVENT AT NOR-SHIPING ON 5TH JUNE 2019

Present: **Katharina Stanzel**, Managing Director of Intertanko; **Mark O'Neil**, President Columbia Shipmanagement; **Franck Kayser**, Group Managing Director of V. Ships; **Carsten Ostenfeldt**, Managing Director of Anglo Eastern Germany; **Sunil Kapoor**, Managing Director of Fleet Management Ship Management; **Rolf Stiefel**, Vice President Winterthur Gas & Diesel AG (WINGD); **Vigleik Takle**, Vice President & Commercial Manager, Kongsberg Digital; **Andreas Chrysostomou**, CSO of Tototheo Maritime; **Arun Sharma**, Executive Chairman of the Indian Register of Shipping; **Suresh Sinha**, Managing Director of the Indian Register of Shipping.
Moderator: **Sean Moloney**, Managing Director of Elaborate Communications

Sean Moloney

What are the critical technical challenges the industry must overcome towards achieving the 2020 goals?

Arun Sharma

This is an issue that has been discussed at length by IRClass and we recently held a seminar about it attended by various stakeholders including ship owners, engineers, oil companies and P&I insurers. So, we received a fairly good view of what January 1st, 2020 will look like and I have some very mixed feelings about it: is it something to be frightened of, or is it a bugbear?

During my career on ships I have used various types of fuel

and honestly in no point of time have I found as much hype as we have now about the 0.5% sulphur cap starting in 2020. The refiners are telling me that they have been blending 3.5% sulphur for some time and it is a fairly steady fuel but dropping down to 0.5% sulphur would have a significant impact on the stability of the fuel.

I am also being told by people who know a lot more than me about the make-up of fuel, that a 0.5% sulphur fuel content will be a very light fuel which will have implications on the power it will achieve with regards to the same volume of fuel than a higher sulphur content equivalent. So, in critical situations where you suddenly need more power, you may not get that same increase in power with a

0.5% sulphur content fuel than you would do, with a higher sulphur content. In terms of the supply of the low sulphur fuel – Indian Oil tells me that there will be more problems with that as do BP and Shell.

The only feedback I do not have is the performance of the fuel in ships' engines with regards to its viscosity, flashpoints and leakages. I am also a little concerned about the alteration of the cylinder oil total base numbers, to see that you don't have excess alkalinity on the cylinder liners which can cause all kinds of problems. So, I think 2020 will be best resolved by the ship superintendents and chief engineers onboard with help from their head offices. So, I am hopeful that 95% of these issues will be resolved.

Rolf Stiefel

We have been testing plenty of fuels but we have a bit of history which people quickly forget which is that heavy fuel oils have only been around since the 1960s and there were no engines capable of burning this fuel before. And we have been cleaning it for decades in the refineries but people have assumed it has always been like this, but it is an awful fuel so whatever is coming is going to be better for the environment. The challenge is more to do with the stability of these low sulphur fuels and how they are going to mix with each other. Leakages is also an issue as we have seen it with the 0.1% sulphur content and distillate requirements in the ECA zones, but actually it is only an issue because we have been used to burning heavy fuel oils. Fuel treatments and all this chemistry is not getting simpler for the crew so it will present some challenges.

Sean Moloney

Katharina let me bring you in on this. Is the industry frightened of the 2020 deadline? What are your thoughts and what are the technical challenges?

Katharina Stanzel

'Frightened' would make a good headline in the media but in reality the industry is ready and has been preparing for this – they have been cleaning tanks and trying to get their hands on low sulphur fuel so they can practise with it and adapt their standard operating procedures. The element that we cannot control is that less than 60% of the world's refineries are operated by big energy companies, so there is lot of oil refining capacity that has not got an oil major behind it. In addition, you have got a lot of people working as bunker suppliers that live on very, very tight margins and those margins are not going to get any better. The only way they will get better is by blending to minimum standards and it is that blending that is the unknown component, there



is no entity which controls that. It is ultimately something which happens shoreside and IMO regulations stop at the ship/shore interface so we not actually looking at what happens shoreside. Member states do not want to put procedures in place to regulate what happens here as they say it will be too expensive. So, what we need to do as an industry is to be nimble on our feet and look at our supply chains to check they are buying fuels from well-established vendors. The other issue is that if you are on charter then you go where they send you and if you have a time charter agreement then you are not even buying the fuel so it is another element we cannot control and it is one we are very nervous of, but not frightened of – there is a difference. As we can say we have done everything we can which is under our control so bring it on and let's just get through it and eventually it will normalise and I think that in two or three years from now, nobody will even be talking about it.

Sean Moloney

So, let's bring in some of the ship managers and get their views especially about the industry being nimble – Carsten what are your thoughts?

Carsten Ostfeldt

From my point of view I think preparation is key – don't wait until the last minute to optimise fuel consumption and get left with the wrong fuel in your tanks because if you do, it will be pretty hard to offload this fuel for the first quarter of 2020. The other issue is the availability of compliant fuel – will it be available everywhere? What about the guys tramping in South America?; or will they have to reconstruct their ships to carry more fuel out of the major hubs – will this work? You mention lube oil quite rightly which is adding another level of complexity for the crew operation, which already has complex issues to contend with. So we could see some mishaps where people have blended the wrong fuels and put the wrong lube oil in. Back to blending - when you are restricted in your bunkering and you have to take some fuel which you are told on paper is the same but



who knows what has been put in it? We have done some research on this and found that blending is not easy and I think that is going to be the big challenge for 2020: what fuel are we actually getting?

Sean Moloney

So, who should be looking after that side of it as I think you mentioned Katharina, there are no checks and balances currently?

Carsten Ostenfeldt

It is a good question Sean, as bunkering is a loose cannon

in that sense as there are so many layers in the supply chain: who controls what you are getting? I think it has to be a national issue and involve some quality assurance.

Katharina Stanzel

I think one thing we need to be clear about is that what we are going to see onboard are issues of fuel chemical incompatibilities. The fuel might have been analysed but the crew does not know it, as even the ISO standard does not give you the detail of its chemical make-up. One of the things we were really nervous of was judging if these different blends were compatible and how many percent of one can you mix with another. Bureau Veritas gave a very good presentation at CMA this year where it tested the compatibility and stability of various fuels and published a matrix of blends that were available right now but blends that get delivered are going to change day by day depending on where you are.

Franck Kayser

I think the time it takes to test these fuels before you even get them onboard is taking longer so if you get poor fuel, you then have to offload which is a major headache. So I hope there will be some standards implemented, but I doubt it. If we could have a chance to know what it is before we put it into the tank then that would help us a lot.



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Sean Moloney

As a ship manager managing 1,000 ships, are you putting any of your own checks and balances in place?

Franck Kayser

Yes, so we test for all the normal things but we also conduct advanced tests to understand what other stuff we have in there. The issue is that you can test as much as you like but then something new pops up which you never have imagined could get into the fuel; so you are always one step behind on what you can expect to find. So, I think it will be the same thing here as you have a lot of very decent producers but you have a lot of middle men who are all cutting it.

Sean Moloney

So, is it going to be down to Port State Control to deal with it?

Carsten Ostenfeldt

Yes, because how else will we control what we are getting because you can test and test but with over 4,000 chemicals to look out for, it can be difficult and potentially damaging.

Katharina Stanzel

It is important for this discussion that we separate two issues here. One is the quality of fuel and the other is the

compatibility of fuels, because you can have two fuels that are perfectly within spec but put them into a tank together and they won't work. The compatibility of fuels is a big issue and it is the one that we cannot control. The quality is one we have been fighting for decades.

Arun Sharma

Picking up on what Katharina said, there are two issues – one is the stability of the blend, I think it is easy to say that any blend will be stable as you can get an unstable blend which you can only find out once you start burning it and it separates out. Compatibility is a little easier to handle because whenever we wanted to bunker another fuel, we always segregated it to another tank but the blending is key and all these oil companies – Indian Oil and Shell will make sure the blend is right. But the biggest question is the barge owners who still have 10 tons of fuel left after bunkering has been done. Will they transfer it into one tank and take the next one in and supply that and make that extra 10 tons on the barge so they have a credibility issue. Not all barge owners are like that – some are good, some bad. Ultimately the fuel problem is going to be the problem of the ship owner.

Vigleik Takle

Coming from the digital side, I think that IMO 2020 has meant an increased focus on fuel optimisation software and

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the willingness to invest. We are starting to see some really good solutions on fuel emissions. In terms of blending, we are seeing more data collection and sensing and the cost of the infrastructure and sensing going down. We can do more on testing how fuel is put together so we can optimise the engine based on that. This is all part of the digital transformation of the industry. So, we can sell more digital solutions to help the industry.

Sean Moloney

OK, so let me bring you in on that Andreas.

Andreas Chrysostomou

First of all, the industry has had 12 years to prepare itself for the 2020 sulphur cap so there is no discussion about that. The major challenge was not the plans but how we are going to achieve it in the best way so everyone will be happy. So, we gave them two major solutions – distillates or you get a scrubber.

Now we are discussing the plans which came in a later form, and I agree with Katharina that we need to have quality and stability. We can help them digitally to have a control before we mix the two blends, we are close to it, but they are far away from accepting and adopting the technology. This is the only solution we have at hand because there is no regulator for the blends, that comes from the refineries. The bigger challenge is what happens with those that choose the other route and go on an alternative compliance. Those people who have invested in open loop, hybrid and close loop scrubbers. We are finding more and more ports saying that they do not want this.

If you start implementing this in your territorial and internal waters which the IMO has no jurisdiction over, what are you going to do with these people? Are they going to have to stop these multi-million dollar projects? I can give you two examples involving cruise lines and bulk carriers, who invested in it many years ago. Do you allow them to take them out which in my opinion is a WTO and IMO issue or do we come in and sort the problem differently again by using digital technology to ensure the effluent will be delivered onshore or in the water to the standard that we want it to be. So we have to marry the expectations of society with a regulation and the shipping industry acceptance of new technologies. They have been unaccepting of the digital era as far as I can see myself, up to a certain extent but we need to accept it as it is not mechanical engineering, we are not talking about the uptake in technology in general about whether or not we have scrubbers or exhaust cleaners and so on. This is about making your investment last until at least 2027 where the payoff will come into profit. So my conclusion on the challenge for the sulphur cap is to make sure you don't explode the ship by using unstable blends –

use technology to help with that and make sure that those who have chosen the alternative route will not be penalised for that from day one.

Sean Moloney

Sunil let me bring you into the debate as you've not commented yet.

Sunil Kapoor

I think the media and certain camps have created a certain psychosis of fear, so I am pleased that the people around this table are thinking more positively as fear can make people spend money unnecessarily. So on the 1st January, 2020 everything will be ready, systems will be in place, the tanks will be clean, the ships will be running as has already been mentioned - the Indians are already running at 0.1% - so I now see that the implementation of 2020 is on the shoulders of two people – one is on the technical superintendent and the other on the ship's staff.

This is the whole crux of the issue. When a ship enters port on 1st January, 2020 the PSC inspector will board and check the systems; he will take a sample and he will see whether this chief engineer has done his work reporting and recording properly. Coming onto the other camp that was mentioned which is the scrubber installers who have invested millions of dollars installing their systems, of course they are going to say that it is the best option but I think for the environment more than anything, operating at 0.1% is the best solution and somebody will bite the bullet and we will move forward rather than allow various options. So, if the environment is the main issue we will have to bite the bullet and move forward.

Sean Moloney

That brings us on to the whole issue of the alternative fuel- what is your view on what will become the leading alternative fuel for ships in the future?

Suresh Sinha

From a sulphur point of view, the present option is LNG as LNG has the lowest carbon content but looking at the total carbon footprint, it is still being debated as you need to look at the total lifecycle right from the production and its uses onboard ship. So the options at the moment are limited. We can talk about methanol but at the moment it is not that available and still not very stable so is at the experimental stage and LNG is an interim arrangement as a lot of R&D is still required. So I think what the industry needs to do is improve efficiency and achieve lower emissions - a 40% industry reduction is required by 2030 as stipulated by the IMO.

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Sean Moloney

Rolf can we have your thoughts on this?

Rolf Stiefel

I think it is interesting that if we knew public opinion today before the 2020 sulphur cap decision was made 12 years ago, I think the decision would have been different because to be honest it is a disaster from an environmental point of view. I think it is a fair solution for existing ships to extend the lifetime but what I personally feel is that it is a crime to order a newbuilding with scrubbers fitted because a ship owner will need to operate that ship for the next 20 to 25 years and he is doing the wrong thing as he will be contributing to an increase in CO2 emissions.

Now when we come to the alternative fuels we have been pushed into it by being part of Wartsila. We developed a low pressure engine and to be honest we were a bit sceptical at the beginning, wondering if this would be the future or would it be really only for the LNG carriers. But we did some studies and came to the conclusion that there would be a market for LNG as a fuel due to the environmental regulations but we have been surprised about the increase in uptake as we get requests for new proposals every day. The only thing holding people back is the investment side as the additional costs are still high but if we take a look at the first scrubber six years ago it was six million and today it is below 3 million and similar things will happen for LNG fuel. The availability is there for LNG with the only issue being the bunkering ships which have been over-specified and far too expensive, far too complicated and there will be a lot of learning on this side. Coming to the issue of the environment, LNG is a fossil fuel but it is the cleanest fossil fuel and I think we should make sure we are not confusing shipping by saying there is plenty of alternative fuels – hydrogen, methanol and nuclear. Every meeting someone asks about nuclear fuel which sounds very attractive in theory but ask a guy from an insurance company and he's going to say nobody will insure a nuclear power plant on land so for sure they will not do it at sea!



Sean Moloney

Let me bring Katharina in on that.

Katharine Stanzel

Well, I frequently encounter frustrations in that we need to segregate our discussions in what deals with air pollution i.e. Sulphur NOx particulates and greenhouse gas discussions, because once we can stop talking about 2020 which is hopefully very soon, we can then focus on what does this industry needs to deliver to society, in terms of a carbon neutral activity that still delivers 90% of everything we consume around the world. Of course shipping patterns are changing and cycles are changing and we will deliver new propulsion systems that work with different fuels and the carbon neutral fuel that is going to be the silver bullet for shipping doesn't exist, and probably won't exist, but I think the future is still a mix of solutions so there will be different solutions for different types of shipping. If you are talking about point to point ferries something near shore then scaling up with batteries is going to be easy to fuel those fuel cells with solar and wind and anything renewable – great. It is already happening in some cases. Offshore will be a different solution – the interim solution will be LNG, probably 20 to 50 years max, it's the infrastructure problem – if you're not on a fixed route can you actually

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get it where you're going, and then everyone else has to look at hydrogen for example and I think if we are looking at methanol and other options, it is then a question of what do engine manufacturers foresee, what is practical. I think probably every vessel is going to have some kind of battery-powered component and then the rest where is it coming from, we'll have to see. People are talking about ammonia but it is just hydrogen in a different form so let's just make it simple: where is the R&D happening, what are we focusing on, where are the gaps, what do we need to do?

Andreas Chrysostomou

I just want to say that LNG could be the solution for the interim term but it could also be a problem in the long term because the problem with LNG is producing a fossil fuel and it's going to be abandoned bunkering-wise. The process of putting it on a ship is becoming less tedious and less expensive but the problem is what Katharina said, which is what happens to our R&D. And what are the challenges of 2050? First of all you miss the first part as you have done nothing in the short term apart from digital solutions with automatic systems which has already been done as we have spent thirteen years discussing 2020. The second part which finishes in 2030 will have no chance to have any regulation in place before 2027 so to answer the question is it has to be LNG because we have done nothing and we don't have the time to do it because the shipping industry is global and doesn't do things voluntarily as a whole. So, to reach the 2030 GHG goal, we need a regulation. The IMO works with international agreements and those agreements have to be adopted which can take 10 years, so society is expecting us to do something and instead of doing that we are just talking about regulations to be adopted.

Sean Moloney

There was an article in *The FT* recently which again slammed shipping as being a dirty industry and mentioned none of the innovation being worked on such as batteries, solar power and LNG. Also, the fact is that if all shipping's cargo was put on trucks instead what would the environmental impact be then? None of that was referenced so there is a PR issue here. What can be done – how can we get the message out to society?

Andreas Chrysostomou

Do all societies feel the same about shipping or is it just a European/US and South American viewpoint? If you ask the European Commission they will say that the end user is willing to pay more to get cleaner transportation. I think people in Africa would have a different opinion. We have to ask also who are these classes of society that have these opinions because my point is that there are other classes of

society that want to advance the R&D for many purposes but unfortunately shipping does not tell its story correctly. We have done a lot of things to make it better and cleaner etc but we say nothing about it.

Franck Kayser

We have to present ourselves better to society; it is a topic we have been talking about for the last 20 years, and I think various attempts have been made and the issue is that most of society is not interested because they are not impacted by it because you can just go into a shop and buy anything that is produced anywhere but the reality is that for example European farming started to develop only after the Second World War due to a lack of tractors.

Most development comes with high cost. The reason why a lot of development happened in the container business was because the fuel cost was hiked so it payed off to do something and invest in it.

Carsten Ostenfeldt

Where does shipping start and where does it end because if you check the value chain of shipping from end user to end user – how much waste do we have there and I think we have a lot but this is not only shipping as we have all the terminals and the trucking side of delivering cargo etc etc. Coming from the chemical tanker side – the inefficiency in Houston is unbelievable. You would not believe it, it takes three weeks to unload a tanker and you are going in and out, it is purely because it is a private terminal with no co-ordination of what it is doing, it is totally inefficient, a waste of energy. My belief is that if you really want to move ahead then it has to be a combination of incentives to do the right thing, then we will have a better world and if you are not doing the right thing then you are going to be punished one way or the other and of course that is always a balance.

I don't think the guy building a new vessel is the loser because he can add on new technology which you provide so he will have the most optimised vessels compared to what was built yesterday so he will always be the winner. The loser will be the guy who built the vessel yesterday. He is the one not fully up to date so we need to enforce updates to ensure he complies. Today, we have oil majors saying they are not sure if they will have vessels over 15 years old so that is going to drive down the lifetime of vessels. The social economy around shipyards also plays a role. There is a big national interest in building ships because it generates jobs so that is also going to keep the availability of vessels on the high side.

Sean Moloney

I want to bring in Mark O'Neil now and talk about the importance of upskilling and re-skilling of crew to keep up with technological advancement. Is industry investing enough?

Mark O'Neil

Apologies for being late but I've just come from a seminar where there was a lot of talk about the latest technologies and latest innovations and how we can optimise etc. So when it was my turn to speak, I pointed out that no-one had yet spoken about the people both ashore and at sea who are the single most important factor in this business and will stay the most important factor in this business. Technology is there to enhance the human performance and it is not there, as a general rule, to replace human performance. One of the first talks was about the huge savings you can achieve with technology but I can tell you now that bringing in digitalisation into our organisation has meant we have had to recruit more people because we are now recruiting data harvesters who understand these technologies. So, while there are huge cost savings in the operational side, actually managing that is key so lifelong training is important. How do we take that to our people who vary in age, intelligence and training and take them with us on this journey. Grey hairs used to mean you were valued for your experience but nowadays grey hairs that don't continue the lifelong learning process rapidly become irrelevant. So learning has to be fitted into our busy business lives.

Sean Moloney

But is it something that is evolving because shipping is learning all the time but is it investing enough in re-skilling?

Mark O'Neil

I think it is. We've just embarked on an adobe e-learning platform which allows us to deliver tailored training programmes to staff both ashore and in the office. So we are not tied to generic training modules anymore as we can quickly tailor a programme to a specific crew member and send it to him or her by app and they will go through it and answer questions to ensure they have fully understood it which is fantastic. It is the sort of tailored training we need and they can do it at their convenience to fit in with our busy lifestyles.

Sunil Kapoor

I fully agree with what Mark has just said. There are two levels of modernisation. Younger crew coming into the industry are already aware of how to deal with this new technology. Some ships lack this new technology though but people that do training on land only retain 30% to 40% of what they have learnt, so you have to supplement it by way of e-Learning and providing training onboard. People are also spending a lot of money training the superintendents as these are the people who are directly connected with the ship staff. So we are using automation

and other things, not to reduce the cost but to enhance our communication and connectivity with the people, the ship and with our owners so we can improve our efficiency and demonstrate our honesty, simplicity and transparency in our operations.

Mark O'Neil

You go to any crewing conference, the raging debate at the moment is STCW and whether it is fit for purpose? Well, it is the minimum level as we all operate in such a sophisticated industry now that if I look at the vessels we manage and others manage here, the sectors are so highly specialised that we have to adopt specialised training for each of those sectors and each of those people because Seaman A will have learnt English to a certain standard and mathematics but Seaman B won't have and so you have to start from different points. One thing I did before I left Law was to work with Videotel on a training package and that was really interesting because they looked at video games as a way. We have all got kids and know how much time they spend gaming and Videotel said now look we want to make a training package like a game. So this was fantastic and really tuning in to the modern age and what the kids of today are receptive to.

Sean Moloney

One area now is virtual reality isn't it and one of the issues is Enclosed Spaces so you can practise in a safe environment and learn by doing. So are we seeing these types of training packages evolving?

Carsten Ostenfeldt

Virtual reality is already part of training and that is how people learn so when they get on a ship they know what they are doing because they have seen it all in a virtual world before getting onboard. I think a lot of the talk about digitalisation has been overplayed. The first level of digitalisation was when engines changed to use electronically controlled components and crews dealt with it easily. What you have to look at is getting the basics right. India and Manila provide large pools for us to recruit seafarers from but they have varying levels of skills so today we have to accept and look at it as a privately funded programme as this is the only way to ensure that you get onboard the right calibre of people to run our vessels effectively and efficiently. So let's just get the basics right and we will deal with digitalisation when it comes.

Sean Moloney

Lady and Gentlemen, thank you very much. ●