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Rory Marshall	International Shipyards Ancona
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Chairman—Martin Redmayne

Right OK this is our next panel before lunch. My introduction is that we've applied a very fair glossy paint panel to give excellent coverage of coatings. Sorry.

These four individuals are going to enjoy the process of opening up a debate on paint problems, is that right? In a very informal chatty way, mugs of coffee, breakfast time TV type of stuff. Fire away. Sorry, can you press the little green button. Big green, rectangular, rhomboid.

Jo Stoza ACA Marine(UK) Ltd

Good afternoon everybody. When we were first asked a few months ago to talk on this forum, we debated long and hard what topics to cover. What were the hot topics in our industry today. And during the course of some research to canvas opinion I called all the panellists from last year's forum and one of them, Joop Ellenbroek, who I'm sure most of you know, gave me this little nugget of a comment. 50% of new build projects are delivered with major paint issues.

Now I don't think the point is to debate whether or not this statement is exact or whether or not we believe it, let's just take it that there are many projects delivered with major paint issues. So the question we asked ourselves then was, why was this? Well there are so many reasons, we'd be here all day discussing them, but broadly speaking they fall into two very very broad categories; paper based problems and practical problems. The paper based problems include things like the increasing complexity of legal contracts, the legislative issues including Health & Safety directives, employment law, the new one on the block is VOC emissions, it includes quality control and planning and coming soon is the proposed ISO standard for large yacht coatings. On the practical problem side we've got the ever increasing size of yachts with the every increasing reduction in build time it seems; the increasing complexity of paint systems and the lack of skilled and flexible labour force. All of these contribute to that critical point in a project, that indefinable point in a project, but we all know when it happens—when we suddenly realise that something has gone wrong and unless the delivery date can be changed something's going to have to give. So amongst us all today we're going to discuss a few of those topics that I've just covered, and we'll start with the legals, the contract, or more specifically the hyper contract. Gone are the days of a 3-5 page contract and us all feeling like we were pretty well covered; hyper contracts can be good, we all need a good, sensible, in depth, contract but they can often engender a sense of distrust between the parties. I think Chris has something to say on this subject.

Chris Atkinson ACA Marine(UK) Ltd

Good morning ladies and gentlemen. I run ACA Marine which is a fairing and paint company based in La Rochelle on the west coast of France.

Talking about legals, I wish I'd listened to my father when I was a kid at school who always said to me whatever you decide to do in life first become a lawyer. Now in today's yacht and superyacht industry the legal aspect has become increasingly important, which is understandable when we think of the consequences and the financial amounts at stake. I think a good contract should be a very detailed and practical contract, but it needs to be something that is more seen as a tool rather than as a weapon or as an umbrella to fight. Too many of the contracts at the moment are resulting in a slow down of the actual practical part of the structure for painting boats and it would be nice to see an earlier interaction between applicators, boatyards and maybe owners representatives; that would allow us to have a lot easier practical and more identifiable contract at stake.

Jo

So effectively Chris, what you're saying is you want some more transparency in the whole process.

Chris

Transparency would be a very good way of putting the way we would like to work with more of the boatyards and to be brought in at an earlier state of affairs, almost before a boatyard has actually signed up a legal contract with an owner or an owner's representative and by which time it's too late, everybody has to live with those consequences afterwards and an earlier interaction would be a lot healthier situation to be in.

Jo

So the words team building, transparency and trust are going to be words that we revisit throughout this talk. Moving on to quality control and planning, I think Rory has got something to discuss here.

Rory Marshall International Shipyards Ancona

Yes, I just wanted to go back actually to the previous comment we were talking about there, the legals and the planning of the project before getting started. I had a recent experience with a project that we did last year and one we're going in to next year, both of which have been fairly heavily organised and with a lot of transparency between the management company that are running it for the owner and the shipyard, and this is creating a good basis going in to the application process. We're way out from the next project, we're nearly a year away, and many of the problems that have been experienced in the past have already been discussed and this is going to, I believe, help a great deal for this next project. And that includes also the quality control planning, what the owner's representative team are expecting from us and what they will receive during the application process. So we've got a very clear specification, they know what products are going to be used, and they also know how they're going to be applied, who's going to be doing the application, and what data they're going to have as a record of that application way before the project starts. And that’s a very useful tool for them to report back to their client, and I think should stand us in good stead for that project.

Jo

I think Raouf you've got some comments to make on quality control and planning as well, especially to do with the critical path analysis ?

Dr M Raouf Kattan Safinah Ltd

Good morning ladies and gentleman. It seems to me that in any production scenario what we're really all after is predictability. We want the vessel delivered on time, to the right level of quality, in accordance with a contract. And the issue is how paint and the coating activities impact on that predictability of the process. One of the ways in which it does impact is that the painting process is relatively unpredictable in itself. We depend on the weather on the particular day, we depend on the environment in which we're coating, we depend on the skills of the workers, we depend on the actual products we're using. All those make the painting process itself very difficult to plan and schedule, and yet all too often we see it being treated with less than the respect actually the process deserves. Certainly in building a vessel, if you've put painting activities on your critical path you're going to have problems, because it is an unpredictable process. So you need to be able to manage that, to afford the kind of pre thinking that Rory has discussed in terms of getting the contract and specifications right. The other area that coating raised, uncertainty, which we will come on to discuss a bit later on is in the inspection of the quality of the coating and the way we try to measure that. I think it would be fair to say that at present that system of inspection is too subjective, it's often based on eye rather than perhaps measurable methods and systems. So I think these factors raise uncertainty, reduce predictability and therefore cause quality problems in themselves.

Jo

We could lead straight on to the ISO standard leading on from that, Rauf. The large coatings measurement and analysis of the visual appearance. This was raised last year by Rafael from Benetti and a committee, as I'm sure most of you know, is currently discussing this new proposed ISO standard. And we've all discussed together at length what exactly it means. Do we actually want to be regulated in this way? Is it going to help us? And we've read the draft ISO, it's not perfect but they've met again recently and they've started making some changes and I think Rauf is probably best qualified to discuss this as well.

Rauf

One of the dangers with regulations and standards is how they will translate into practice, and I'd like to give you a note of caution. Recently in the shipping world an IMO regulation has been passed on the coating of ballast tanks. The development of that regulation did not include the paint companies, did not include paint managers, it included regulators. Consequently the impact of that regulation is going to be that the Koreans estimate a 10% increase in the price of the ships they'll make, and nobody really believes that the net result of an improved coating on the ballast tanks will necessarily be achieved. So this issue in terms of developing a standard is to try to make it practical, try to make it usable and as far as possible reiterating what I said about the quality side is look at objective measures rather than a subjective approach. So that would be my concern from what I have read so far today.

Jo

And Chris and Rory and I all kept coming back to the same thing. We felt they should be talking about a range of acceptance criteria, rather than setting one excellent standard which everybody had to strive for.

Rory

Yes, not only the range issue, we discussed this with many of you as well. We've thought much more about the method as well. I have to speak from experience—when inspecting a yacht during production and at the finish, at the acceptance stage, it's very difficult in some cases to find yourself on common ground with the person who's doing the inspection. You're looking for, as a shipyard, as a technical guy, I'm looking for particular criteria that we've met, again this is reflected in recent contracts and things that I've asked for and suggested for other people. And other shipyards. But it's a uniform method by which those acceptance standards can be applied so that in an individual project case you accept, with the management team, the standards that you're looking for, the gloss levels, the dust inclusion and so on, which may vary from project to project, depending on the position of the boat, the previous condition if it's a re-spray or a new build. There are many different variables that can be included in this. So you've got this variation of different standards which can be accepted at the time of the contract signing. But then most importantly is the uniform method by which you're going to do that inspection so that when you come with that particular kind of gloss meter or that particular method of measuring the dust inclusion that's going to be acceptable to whoever is doing the inspection. And that's a very important element which I believe very strongly should be included in that ISO standard.

Jo

Chris you've got some concerns about losing subjectivity

Chris

Yes. Quite often I think anybody who's been involved in an inspection process of an area that's been freshly top-coated where the applicator is often with the yard and the yard with the owner's representative and nobody's really happy. The applicator is tired, he's been working all night, he's painted in what he thinks is pretty sub standard conditions but he's done a relatively good job, he's got a nice gloss level, not too much dust, he might have a little run—if he's lucky it's going to be fairly low down in a low visibility area—but everybody does need some kind of parameters that need to be pre organised and pre accepted. However the ultimate feeling is when you walk onto the yacht, do you feel that finish is nice, do you get a good feeling with it? Anybody can find enough dust or a run or a dry patch in a big area that maybe has been painted topside and in theory it gives everybody the right to refuse the whole paint job somewhere, even though they might have something that's bad over 10 sq centimetres and the painters have just painted maybe 500-600 sq metres. So I think the subjectivity needs to be maintained, although the rules and regulations do need to put in place to avoid the conflicting situations between the paint applicators and the yards or the owner's representatives.

Raouf

I agree with Chris. I think we should bear in mind there's one certainty in quality and inspection. And that is the more you inspect, the more you'll find wrong. And that's why we need to have some practical standards to stop the cycle of confrontation, and

I'm sitting here as a consultant, so roll on the confrontation, it brings us business. But I think this tends to be a distraction of resources, a waste of resources, rather than putting in the effort to get the job right in the first place through pre thinking and practical approach to the problems.

Chris

Yes, I'd like to say that quite often we've been in situations where the first time we painted let's say a topside everybody's OK happy, but someone says no no I've found an area that's just substandard, please repaint. And maybe two, maybe three, maybe four times later the painter has lost all confidence, the job's getting worse and worse and everyone's thinking oh god, why didn't we just accept that the first time around? And you want to punch them in the face; you think this is just not on. Something has to be put in place to avoid this kind of situation. Because it gets out of hand and it doesn't help anybody, the applicator, the yard, or the owner.

Martin

Do you have any suggestions?

Chris

Yes, I think generally more parameters need to be pulled into the factor. The conditions that we're painting in, the time frame, the size of the vessel which we'll lead into in a later topic, we're all virtually novices—when somebody says have you faired and painted a 140 metre yacht, I say no I'm very sorry, I haven't. When I have done, someone will say have you done a 200? And well, sorry, no. And each time the vessels are getting bigger, more complex, more difficult designs, which lead into product and application technical problems. And I think everybody needs to be on a permanent learning curve to avoid these problems.

Raouf

First of all I want to say that these natural good looks are not from punches in the face. I think the statement by Joop of this 50%—this is the symptom. And there are causes for that. And you can list the causes. And the issues start at design. If you design the vessel so it can't be painted well, guess what. It won't be painted well. There's issues about the production facilities which you've got within which to work, the specification which is used, the management systems that you use to control the painting process, the worker element, the human element in it, and ultimately the weather. All those things influence the job in a way that make it unpredictable to control and to manage. And so are there solutions? Yes, but the solutions have to be addressed to each one of those items rather than always pushed back onto the guy who's got a tin of paint and spraygun.

Martin

Is that written into your contract in terms of all the conditions etc, based on weather etc etc ?

Raouf

No. The contract can only cover so much. I think I'll let Rory address that. But I think it's educating people that if paint is important then it's got to be given equal weight to other systems on the vessel so it's an engineering system.

Tork

But to look at expectations, as well, is it possible to have the same finish on a luxury car, 50 metre yacht and 140 metre yacht, because I don't believe it is, is it?

Jo

That's exactly it. You have to manage expectations, and that's not really the applicator's job, it's the yard's job. And I don't think generally they are managed very often. I think Rory has something to say here.

Rory

I'd just like to go back to the previous comment I was making about the managing it early, getting in and speaking to your owner's representative team at contract formulation. We had a recent boat, very nice metallic and pearlescent boat which was at Monaco Boat Show and the team that managed the yacht had an onsite representative who worked very closely with the production team within the shipyard. And he had his own paint consultant, who advised him on the quality control, we interacted a lot to do with what they were expecting, we tried to work with them to provide the information that they were looking for, as much as we could within our own structure. And that is the clarity, that's the openness, that really helped that project move forward. We got a good result. When it came to inspections the shipyard and the representative made the decisions together, or they made the decisions with their own inspector giving advice to them, so it wasn't the paint inspector who accepted or not accepted it, it was the management team or their owner's representative management team who made the decision, but he was given advice by his owner inspection advisor. But that interface, that filtering of the decision, that final acceptance, made it a much clearer approach. I don't know if I've explained it that well, but it wasn't just one chap who had to make a decision, because it's very difficult for that paint inspector who's perhaps visited two or three times in the month, he's then got to come into the yard and say yes, I accept this, or I don't accept it, or whatever. The onsite manager, who's been there throughout the process, he's seen the day to day problems that we were discussing earlier, that you've mentioned, the length, the wind, the weather. He's been there, he's seen the problems as they came up. He's then able to filter the decision, and it's a valid collaborative approach, rather than a confrontational relationship. And it made it much more of a positive relationship, which when we came to the end of the job everyone could actually say well done, that's a good job—both for us and for the management team.

Raouf

I think if painters could be brought in a bit earlier on more in an advisory aspect, even on the design side, a lot of problems could actually be solved. I think once an owner has finally seen his design of a boat, he's just bought that ultimate big boy's toy and he wants it to look the best in the world, it's almost too late. If the painter had been there to advise, maybe say look, can you put a cut line here, can you do a feature there where we can do a cut line, can you cut the topsides into several areas using doors, features—I think it would be a lot easier to paint these megayachts especially as they're becoming more detailed and difficult, with metallic and pearlescent finishes.

Jo

And it can also save a lot of money in the long run if as a painter you're able to say if you leave that design feature in there I guarantee the amount of filler that we'll have to put on it is going to up your costs.

Moving back one stage to VOC emissions. Which, having talked to a few American applicators, they're amazed that we're making such a song and dance over the whole issue, but none the less it seems that we are. I've started looking at some software products to help us as applicators keep track of the VOC emissions from our painting point of view and there are quite a lot of good products out there, some simplistic, some much more complex. I think it's something we should all be thinking about using as applicators, not just leave it to the shipyards to have to deal with the whole issue, and I'm going to hand over to Raouf to give you some more statistics.

Raouf

I don’t know if it'll be statistics but anyway. The regulations are here and in simple terms it's going to require whether you end up under an X2A or 2B you’ve got to collect some data about the emissions. There's a debate that we might return to about how effective this regulation would be, and it's the one we have at the moment. It seems that there are really 3 possible routes to collecting this data. There is getting data from your supplier so the paint manufacturer can tell you they sold you so much paint of this product and therefore the total VOC package was X. You can have a control point at issue so in your store when you issue the paint you can take a log of what has been issued on a particular contract or job and collect the data there or you could collect the data at point of use. Of course one of the problems in yards is there are many points of use, and so you get into a dilemma. The other big area of uncertainty at the moment is that although the solvent emissions directive is defined, the interpretation by each country is quite different. So as Jo referred to, in the USA erroneous reporting of VOC regulations can land you with a $50,000 fine and 9 months in jail. If you ask the authorities in Denmark, what would happen if my yard didn’t submit VOC reports for a year, they scratch their heads and go hmmm, maybe we'll come and see you next year and talk about it. So we're not going to have a level playing field and that causes me concern. The other thing that causes me concern is the issue of focussing on solvent emissions. The driver, as we all know, is greenhouse gases. Well, if you look at the whole yard, there are many sources of greenhouse gases, not just the solvents. And it might be that by reducing solvents in paint and thereby reducing greenhouse gases in this area, it's going to drive up the use of greenhouse gases in other areas. More heat to apply the products, more ventilation, whatever it might be. And I think it would have been more sensible to look at the yard as a whole and say well, here's a greenhouse measure and our target is now to reduce that by whatever tools are available. It seems to me in the longer term that managing that data will vary and I think the solutions adopted will range from simple paperwork systems to perhaps software, and that will just depend on the country you're in and how those regulations are interpreted. And that bit worries me the most, because I think that will deliver competitive advantage. In the big ship industry we're already seeing that between Europe and the Far East, regulations are being much more tightly applied here than they are in the Far East, giving another source of competitive edge to those yards.

Jo

Ken Hickling gave a question out—how green will you go, didn’t he?

Martin

Yes.

Jo. Hmmm. Which is relevant to this subject. Chris ?

Chris

I think most applicators would like to go as green as possible, I think everyone has a good interest in preserving the planet. However we do face one ultimate problem, which is that everybody wants their boat to look really nice. Nobody wants a more structured, more peely, less shiny finish. Everybody wants that super shiny glassy effect. So I think at the moment the only obvious road is to go as high solid and as solvent free as possible on 80-85% of the systems, go water based maybe on the insides and keep our let's say toxic quota for that really nice shiny finish at the end. The other worry is effectively the international competition, that if we are not allowed to apply our preferred topcoats in Europe will the clients go overseas, will they go to Asia, will they go to Turkey or somewhere else. It is a problem for us and it is something that has to be addressed on a full uniform kind of basis. Maybe some owners will be willing to have a longer lasting but less shiny finish, we hope so, but it doesn't seem to be the order of the day at the moment, on the owner's side anyway.

Tork

That must also be an issue not only for paint applicators, because unless you're talking about repaint, that also means that a builder is going to go to the Far East and not to Europe. So it's a concern for yards as well, I would say.

Chris

I think for everybody concerned, effectively, yes. They've gone there already.

Rory

Yes, I was just going to say, we've got to remain competitive. If we're applying more expensive—it has a greater cost—we have to bear that cost and we have to remain competitive in the market. If we have regulation in Europe and it's not enforced further afield in China and the new markets, the new construction industry that they have over there, builds will move. So we want to keep on applying our toxic product because they're shiny and the clients want them, and people have got to pay for it and they won't want to pay more necessarily to get a shiny boat made in Europe when perhaps in China they can have their toxically coated very shiny boat made for the same price.

Martin

Rory, do you actually know they want it, or is it just because the market dictates that?

Rory

The market dictates it, but we know, the paint standard is 96% gloss, no dust, that's what we're looking for.

Martin

That’s been driven by current market conditions. If you ask owners, what would they say? Or do they care?

Rory

Well, very few builds have been built with a satin finish. It's something that I've been pushing our designers to use, interior bulwarks, some areas of the boat into perhaps not so glossy.

Tork

There is the classic example of Treboux, which is about as environmentally friendly—I'm mean not only is it green star notated it's also a non gloss finish.

Rory

But there are quite a few boats that aren’t gloss, there are some full matt white finish boats, they're interesting. It's something that alongside metallic finishes and pearlescent finishes is a future option—a matt finish alongside some gloss detail is very interesting.

Tork

Actually I've just got a quick question which we should interject here because they're asking: Are the proposed European VOC limits on products the same or similar to US California regulations ?

Raouf

The USA California, in particular around San Diego, tend to drive the regulations so they would tend to be a little bit ahead. And then Europe, the rest of the States follows and then Europe seems to be next in line. So that’s the trend that we've consistently seen over the last 10-15 years and it's driven by the clean air act in America but it's California District 39, they're the buggers.

Chris

Coming back to the comment by Martin, do the owners really want it? To be honest on the application side, I really don’t know. I don’t think I've ever really met the actual owner of a superyacht on an inspection of his vessel. The only people we get to meet are the owner's representatives or an independent advisor or an inspector. So whether the actual big chief himself really is that worried I really don’t know.

Martin

OK. Can I throw in a question that’s come from a text which relates to your size subject matter: With the ever increasing size of new projects, a periodic repaint can place the vessel out of commission for up to twelve months or more. What are the panel's thoughts on paint management contracts, condition monitoring and staged annual paint refits to enable the owner to avoid losing the use of their yacht?

Rory

That type of contract in a way exists in the marine field and you can go to navy vessels for that. Navies, as the vessels owners, request a degree of availability and

therefore the vessel is purposely designed to meet those availability requirements and within that is built in an annual refit and then a 6 year refit. So there's no reason why that couldn't be at least built into a contract. That's not anything new, but I think the challenge of the size that Chris alluded to earlier on, saying well, I don't know, can we paint them?

Chris

I think the honest reply is that we can maintain easy access areas on a boat in a bulwarks, main walkways, anywhere we can have access to. But if you have to start scaffolding to achieve external sun deck areas, for example, you generally have to scaffold from the floor upwards which means you might as well repaint the whole of the yacht at this time. So there comes a time when a full refit is necessary, it does take time, increased maintenance on corrosion would reduce greatly the time of the boat being put up to dry, because I think most owners just simply will not accept that their toy is put out of commission for 9-12 months. But there comes a moment when they will have to accept it.

Tork

As a quick practical question—would reduced use of acid washing of teak decks add longevity to a paint finish?

Chris

Yes, I think softer washes and fewer washes would be more advantageous to any paint finish especially as a lot of yachts actually get washed every day because of the possibility that the owner might turn up on board. Maybe leaving their yacht a little bit dirtier for slightly longer periods might maintain the finishes a bit longer. But I'm not sure it's quite acceptable for the image of the yacht.

Rory

Yes, principle product suppliers are generally quite clear about the products to be used for washing down. I'd like to make two points about the repainting. Firstly, again in my experience, the new build paint team and the specialism they have for the new build is generally different from a repaint paint team, the number of applicators for the population of the company, and some of the techniques and specialities they have within their structure, so I think when including one of these repaint contracts it should be borne in mind who's actually going to effect the repaint after 2 years. It might not necessarily be to the shipyard's advantage to have the yacht come back to their own shipyard, and take up the time of their new build paint team. It might be an advantage to use a specialist repainting company. And secondly when formulating the rendering of the idea of the yacht, the concept, at the beginning. I have the very lucky position of working within a shipyard and being in contact with the technical office, and when they're doing these renderings and when they're doing the makeup and design of the yacht very often we're asked, or I'm asked, if I've got any ideas that will improve the lot of the painter, which I think is quite a rare opportunity. And it's a special advantage if we're discussing metallics and pearlescent painting for which the demand is ever increasing for this kind of paint. So a cut line, a join in, certain areas of the superstructure which would be a very large long line, we could use a particular detail of some kind of profile that can then cut that area. I just wanted to make that point.

Tork

I've got a question by text concerning water based paints. And they say that the majority of today's cars are painted using water based paints. What sort of advances are we making to get the kind of gloss levels that you get on cars using water based paints on yachts?

Rory

I think we should be asking some of the product suppliers, because we are always ready to try new products, as they come out, some of them, and very interested in water based products as Chris was saying, for the VOC reduction. In order to maintain or reduce our VOC emission we're looking very strongly at water based for the interior coatings. It's an area that we can look towards in the future whereas the exterior very toxic products that we're using at the moment, which is great, and we can keep that level outside but go for a more VOC reduced interior coating.

Jo

Tork, did you mean the top coat though?

Tork

Well I presume they meant the topcoat, yes. It was a text that came.

Jo

Raouf might know more about water based top coats.

Chris

I think the water based paints—when you look at a modern day car, the actual finish is nowhere near as nice as it used to be. You look on the doors, on the vertical surfaces of cars, they're really quite peely. And quite often that finish would be unacceptable in the industry that we're in and water based is so much more difficult to control with the application and the climate. A car gets painted in a paint cabin under perfect conditions and a yacht in excess of 70 to 100 metres isn't going to be in those conditions ever. So I don’t think we're quite ready for the water based finishes yet. But unless Ken Hickling or some of his mates have got some dodgy products up their sleeves—we'd like to know.

Martin

Can the mike girls identify themselves please, so I can just get a microphone in Ken Hickling's hand and then one in Hugh Palenbroek's hand and then I promise you Jo you'll get back to your little script. And we'll give you a little more time as well for this quick run.

Ken Hickling

I'd just like to thank Chris for providing my answer for me. He's absolutely right and cars these days are nowhere near as good as they used to be and I'm sure all of us involved in the paint trade would love it if the client, the customer, and his representatives were prepared to accept yachts that were as poorly painted as the cars on the road today. The simple fact of the matter is that they aren’t; it's very easy just to paint something small like a dinghy, or a car, and it's very hard to paint

something large, like a 120 metre boat. And yet the 120 metre boat is the one that's much more expensive and therefore the expectations are therefore inversely geared to the likelihood of being able to be met.

Martin

But Ken do you tell your yards that buy your product that that's the problem?

Ken

They know it's the problem. Yes, everyone knows painting a big boat is difficult. But to return to the question of the water based, we have water based technology within our parent company, and we would love to bring it to this marketplace, but it comes with its own list of special problems, which would require a considerable amount of retooling and relearning, not least of which is to do with the drying that Chris has already alluded to. But there are certain products which just will not perform below the waterline and certain parts of the boat do go below the waterline. There are a lot of areas of the boat which are difficult to paint and the ventilation that you can achieve during painting would give problems in drying, there's certainly the finish that you can't achieve with today's water based products for the final coat, so there are a lot of limitations that come with water based. And really my question about how green will you go, is geared towards are you prepared to accept the drop in performance and the complexity that comes with going with more and more compliant products. And we had the answers earlier; nobody wants to go that green if it means they're not going to get the business. So the answer is that if you want a level playing field then everybody has to go to water based. Because it comes with its own package of compromises which I think at this stage people are unprepared to accept.

Jo

Ken, do you think it's going to be legislation driven, the advent of new products? .

Ken

At the moment I believe it will be legislation driven and these products do exist, the technology certainly exists. And in the past when we've tried to bring more compliant products to the market place, the acceptance of the compromises that they came with just wasn't there, and the products foundered commercially. So we withdrew them, we redeveloped them, we tried to reintroduce them again and everybody said well we've used those before, they're horrible. So at the moment the inclination isn't there, and I think it will be regulation and we're going to hear a lot more about that this afternoon, in the ICOMIA presentation.

Martin

Ken, however, is it more expensive to buy water based paint or current paint?

Ken

I don't think there's a lot of difference really. The high solids products tend to be more expensive but that's because there's more paint there and less solvent. But water based technology isn't cheap technology but it's not fantastically expensive either. It isn't going to be price that decides it.

Martin

Thank you. Can I bring you down in the middle to Joop Ellenbroek.

Joop Ellenbroek

There is a lot more pressure these days on the contractors to perform in a shorter time and in more complicated situations etc. We've all heard that. I have a question for Chris. Under those conditions, with the high demands, how does he cope with those yards where there is no competent counterpart in the organisation. What I'm trying to say is this; if paintwork is that important, and we all know it's a critical issue quite often, but if the yard doesn't have the right men on the right spot with the right authority in its organisation to deal with you, and you can deal with him, then how does he cope with those situations? Because it is a liability for him?

Chris

Well I think basically the answer is it gets very very difficult. Most yards do have a paint manager, let's say, quite often the biggest problem we find is that in his own company he's treated very poorly because he upsets most other trades. And I would imagine Rory quite often hears this, which company do you work for, Rory? The painter or the boatyard? And to be honest a good internal paint manager for the boatyard has to work for both people, he has to have a double head, one day he has to be with the applicator, the next day with the yard, and if this person doesn't exist in the boatyard or doesn't have enough clout at a very high level quite often what ends up happening is that you pull your guns out and, in this case, your guns are your contract and who has the strongest contract wins. At the end of the day what we've discovered is that nobody is winning whatsoever. We would very much appreciate more boatyards employing more qualified paint managers and giving them a more important status within their own organisation, it would help everybody.

Joop

If I may follow up, Martin. Does that mean that if you are going to sign a contract with a yard where there's nobody in the organisation competent or available to deal with your problems, does that mean that in such a situation you'd raise your price, your quotation?

Chris

You don't necessarily raise the price or the quotation, you most certainly make a lot more detailed work in your contract, you start getting all those little get out clauses that you think you need, I don't think it should be a price issue, quite often the easiest way out is to try and name an independent party, an inspector, a bit like yourself, or Martin, or Safinah, that if you do get to a crunch situation everybody's pre accepted the person who will come in and actually decide which way it goes. I think it's the only way forward. But it doesn't necessarily increase the price.

Joop

OK, thank you.

Rory

Do you think the client suffers?

Chris

Yes, I think the client definitely suffers. The yard itself suffers by not having these people. I think the yard would be the first winners especially like you said, you're already in on the projects, even before you get to a paint contract and you can already fight for the requests that the painter is going to need to make his job a lot easier, a lot more cost effective and a lot more repairable, especially on the megayachts that are coming through.

Jo

We need more Rorys though—he's very rare, because he actually has a paint application background, which is not unheard of, but practically unheard of in the paint management role.

Martin

We'll call you Dolly from now on and clone you.

Tork

Just a quick comment that was sent to me by email which I think is quite pertinent. The question is not how green are the yards, or the applicators, willing to go, the question is how green are the owners willing to go. And I would personally add—and those advising him at the early stages of the concept.

Raouf

Just to comment and pick up on this issue of paint managers. I think the industry has a big education challenge in front of us if we're to raise the discipline of coating the ship to an engineering discipline. Then we need to have coating engineers involved in this industry, we need to be able to educate them, we need to be able to retain them and develop the systems that go along with that. And I think at this moment I don’t see that happening, certainly I think in my career I've taught something like 800 naval architects and I know on the 4 year degree course they do very little on painting.

Martin

Jo, do you want to get back on track? I'm going to give you 10 more minutes, basically, because I know we've overrun, but let's see if you can cover any more of your points, and then I have got a few other questions and we'll see if we've got time.

Jo

I think we've just got two topics to cover. One is the complex and exotic paint systems which I know Rory wants to say something about and also labour, lack of skilled and flexible labour force. Which is something that was flagged up last year for discussion and it's an ongoing problem for us all. Rory and Chris probably have quite a lot to say on that front.

Martin

Not too much.

Rory

Metallic and pearlescent particle paints. These are paints, I don’t know if you all know, but they're not flat surfaces. When you're looking at the paint you're looking into the surface of the paint and a lot of the problems that arise, I don’t like to call them problems but a lot of the added difficulty of the application arises because you're not actually looking at the exterior surface. The paint is effectively a base colour with a particle product suspended in a clear resin which you can see into the surface of. And the added difficulty of this application is that this particle isn't necessarily distributed over the surface of the paint homogenously and you get an effect called mottling or marking. This can be, and we discussed this yesterday afternoon, dealt with in a number of different ways. But it's an expensive process because it adds a lot of time, both to the preparation prior to the application and to the actual application itself, and it's fraught with risk during application—it often requires recoating of a very expensive product, as well. So when being asked to paint a boat with these types of product the problem is both with the applicator, he's very reluctant to commit to this kind of application, it becomes very expensive for the shipyard to take on that kind of process and then the acceptance standard for this eventual marking or mottling can become a problem. I was asked to sit in a room with an independent paint surveyor and come up with an acceptance criteria for mottling and marking, which is a very difficult thing to do, and we in the end just said that when it came to acceptance time we'd mutually go over the boat between the two of us and look at and decide there and then whether we would accept the application.

Jo

So it's subjective ?

Rory

Very subjective. But we had to agree to do that at the beginning, prior to having the contract signed.

Jo

It's considered such a difficult topic that the ISO draft committee have decided not to include it, they're only looking at solid paint colours and will continue discussing how they can measure metallic and pearlescent paint finishes. Apparently there is a new machine to measure ?

Rory

It's been mentioned. I was discussing it earlier yesterday afternoon. But it will spot measure homogeneity of—it won't be what we're looking at. I had a project which I metallic painted in 2000, I won't mention any names. We repainted it three times. We'd actually launched it, put it in the water, going home in the evening and suddenly it turned into a tiger, and turned all stripey. 6 o'clock in the evening, sun going down, we hadn’t seen any of the marking previously and with this particular lighting we could see this stripey nature and we had to call the shipyard director, have the boat hauled and into repainting. Very expensive. So it's a process that needs to be very well thought out early in the project.

Chris

I think on the metallic finishes for the applicators quite often some of the bigger megayachts are having options with a metallic finish and unfortunately for the applicator he doesn't have a choice. The yard have already sold a project to an owner who has requested a metallic finish and nobody has really asked the applicator do you think you can do it. And to be honest I don't really know. I've never painted a 120 metre yacht in a metallic finish so I don't really know, hand on heart, whether this is possible. I've got a good idea of ways about how I would approach such a project, but I think again the applicator needs to be brought in earlier to find out whether cut lines can be acceptable, differences in colours—maybe he can suggest a few things to the designers or the boatyards themselves to improve the chances of the applicator succeeding and the yard in turn, but today's market ever increasing sizes are creating huge problems for everybody concerned.

Martin

Right. I think on that note—The last thing I'm going to just raise is, someone's put a text through saying what's your opinion on paint protection products and how do they affect warranty?

Chris

The protecting of the paint is becoming an increasingly delicate subject for all the boatyards, quite often the question is when do we paint the topcoats, do we paint early and let all the other trades like the teakmen come in, the window people come in, are they going to damage the work? General opinion and general practice is that they do damage the stuff. Protecting of topcoats is becoming an extremely sensitive and important issue. They've brought out a peelable paint now that protects the top coat, I think it's a very good product to use, unfortunately you can't put it on immediately after painting something so there is a period of 5-7 days when the top coats are left open and could be open to damage. But I think a lot of boatyards could gain from requesting their paint applicator to protect the topcoats, to have a specific crew that just do that from the moment areas are given over to other trades. It would obviously be a paying service but it responsibilises the painter, it could probably reduce repaints for the boatyards and the whole idea is it would be a lot more user friendly on the boat if an area needs to be opened up for allowing the window people to come in, I think the painter should actually do it. He's the most qualified to protect and to open up areas close to paint.

Martin

OK, thanks Chris. A final comment—just so that everyone knows, next year Jo will be chairing the conference—she did such a good job.

Tork

And we feel quite redundant, actually.

Martin

We're going to break for lunch now, we'll be back here at 2.30. We have another live link to America—not by video conferencing, but by teleconference. Looking at superconductors, very interesting technology when we have quite a delivery issue with engines at the moment. And then noise and vibration after that. Thank you very much.