

## GLOBAL SUPERYACHT FORUM 2006

Conference Day 3 — 15th November 2006

### Paint Forum

Ken Hickling	AWLGrip
Ian MacDonald	Classic Yacht Refinishing
Rory Marshall	ISA Yachts
Peter Bergsma	CSI
Dr Julian Hunter	Akzo Nobel
Joop Ellenbroek	CCS Yacht Coating Services

### Martin Redmayne

Good afternoon everyone— as one of the panellists pointed out it's nice to have the Paint Forum in the middle of the programme not the last session of the whole event. We thought we'd bring paint into the mix of the whole debate. That wasn't meant to be a pun, it was a small introductory speech. This last session of day 3 is a favourite topic—it's often been discussed at Project —or now Global Superyacht Forum — to my right are fairly famous names and faces from the world of paint—all of which (please turn your phones off—was that you, Mr de Vries?)— essentially starting to the far right—Peter Bergsma, needs very little introduction, to his left Joop Ellenbroek — both of whom are paint consultants. This industry seems to survive on consultants, and experts. These are two of them. Next to Joop is the (I won't call him infamous) the famous standards man, Ken Hickling. Sorry Ken, I said I wouldn't say that, didn't I. Julian Hunter is next to Ken; Dr Julian Hunter, a specialist from International Paint at Akzo Nobel—he's going to give us a short introduction to the whole programme but mainly about the SED—Solvent Emissions Directive which is a fairly key topic that all the shipyards are —most of them should be aware of by now but it's a fairly key issue that may affect a lot of you in the next twelve months. Again, on the stage, Robert Redford lookalike Ian MacDonald from Classic Yacht Refinishing and to his immediate left Rory Marshall, paint expert from the ISA shipyard Italy.

Gentlemen, the floor is open to Dr Julian Hunter to kick off with a short presentation on the SED Solvent Emission Directive. Thank you.

### Dr Julian Hunter Akzo Nobel

Thank you. My name is Julian Hunter, I work with International Paint, and the company are responsible for legislation affecting the application and use of coatings. This afternoon I want to speak very briefly about what I think is quite important legislation for the shipbuilding industry and the pleasure craft building industry; that is EU solvent legislation and the impact it's having on the painting of superyachts. Just to set the scene, I'm going to talk about solvent, or volatile organic compounds, or VOC's, as they're often abbreviated to. Why are they regulated? Well, firstly it's important to understand that they're an important component of paint—without them we wouldn't be able to get the paint from the can onto the side of the boat, we wouldn't be able to get the right film thickness, we wouldn't be able to get the right finish, the fine performance finish that we expect in the industry. So they are a critical part of paint— when they leave the film and get out into the air unfortunately they do

engage in reactions away from the paint surface, reacting with other components of air pollution such as sulphur dioxides and nitrous oxides to produce ground level ozone, which in its worst form can cause smog. So it's a recognised environmental problem globally and there are many legislations around the world designed to reduce the impact and input of VOC's into the environment. And as we are a major—well, globally we are not a major emitter but we are a significant producer of VOC's into the atmosphere so we have to be aware of the legislation and the impact it has on us. A VOC, once it's engaged in these reactions and forms ground level ozone it can cause impact on health, so for example it can cause increases in asthma in human beings, it can cause agricultural loss of crops if the concentrations get high enough, damage to forests and also damage to ecosystems. So we sit here with a problem which is quite heavily regulated and that's what I'm going to talk about this morning—this afternoon, sorry—EU solvent legislation affecting superyacht yards. Specifically a piece of legislation that's quite old in terms of when it was born in Europe—in fact it was written and passed in 1999 but it's only now really having an impact on the process of ship painting.

What does the solvent emissions directive mean for boatyards? Well, as I said before, it officially entered into force in 1999 and the member states of the EU were required to implement it in national legislation by 2001. In just about plus or minus a year or so they managed to do that, so there are national legislations which implement that in all installations that emit solvent including boatyards. It applies to all fixed installations—a fixed installation in our terms is a boatyard—using over 5 tons of solvent per year. So it's not applicable to a do it yourself applier of paint but it is applicable to boatyards. All shipyards in scope, that is all shipyards that are using more than 5 tons of solvent a year must comply and be authorised with the local environmental authorities by the 31st October 2007 at the very latest. And the way it's bearing out in practice is that the integrated pollution preventive control directive, the IPPIC Directive, is the one that's being used as the vehicle to make yards comply with the SED. What does it mean exactly? Well, boatyards have got to put together an inventory of solvent that they use in the yard, and they must establish what's called a solvent management plan, so the amount of solvent that goes into the yard, is used in the yard, is wasted, must all be recorded. It also states that any solvents which are classified as carcinogenic, mutagenic or toxic to reproduction should be substituted if possible and it sets quite clear restrictions on the use of the amount of VOC's that can be used in yards from 2005 which should already be in place and 2007. And it applies to paint application indoor and outside—anything that releases VOC. So the yards have got 2 options to reduce VOC emissions following this directive. Either you can forget painting outside, bring everything indoors, apply all the products indoors, take the emissions and vent them through a chimney stack and filter the VOC's out of there—that obviously is a very expensive process, involving investment in large amounts of abatement equipment which costs a huge amount of money, and just to make things a little more difficult if you use more than 15 tons of solvent a year then a stricter limit applies. Or the second option (this is the expensive option— I would say in this industry the economically unfeasible option), or we can do what is called comply with the VOC reduction scheme. Now the reduction scheme is set in the directive and it requires a certain amount of VOC emission to be reduced or the amount of VOC used in a yard to be reduced over two time periods, one to 2005 and one to 2007. And again, if you use more than 15 tons then the amount of reduction you have to make is even less. So in practice, this is how it is bearing out in the UK—for a yard using between 5 and 15 tons of solvent a year by these dates you could either vent your emissions and filter them through the chimney stack to this level of VOC or apply a solvent reduction scheme, the other approach, whereby the amount of solvent can not exceed 47% of the total paint weight that you are using at the yard. That includes all solvent based products, including thinners and cleaning

solvents. There's a second target in 2007 with a more stringent emission limit and a more stringent target for reducing the amount of solvent in paint. This directive has been in place for some time, so following the letter of the law, all yards should already have notified the authorities if they want to take the reduction scheme approach as opposed to the filtration and venting of emissions approach. So, in order to do that, an inventory should be established by the yard, to generate the solvent management plan, which includes all the solvent used in the yard in a 12 month period, the amount of VOC's in paint which should be available from the data sheet of products, in degreasers and cleaners etc, all the solvents used in the yard in a 12 month period must be recorded, all the solvent recovered or disposed of must also be recorded, and all solvent in products purchased, stored but not used in a 12 month period must be recorded. By assembling this information you can then compare the amount of solvent that you use versus the target in the directive, and try and target your solvent use to comply with those targets. Putting together the information that you need for this solvent management plan approach can be put together in a simple spreadsheet, that ICOMIA are producing for example, that International will produce, and others. So it's quite a simple method of compliance. The VOC reduction scheme whereby you reduce the total amount of solvent in your products used in the yard is a far more effective compliance route in my opinion than having to install expensive abatement solvent filtration mechanisms—it allows the yard to choose the mix of products it needs to comply and provide the effects necessary, it gives flexibility to the yard and the data needed for the reduction scheme approach can be quite easily assembled. However that's the theory. In reality it's not working quite like that at the moment. In reality the implementation of the provisions of the solvent emissions directive in yards in member states has been quite slow, the Commission that normally is very keen on issuing guidance on how to put legislation into practice, how yards should comply, have issued no formal guidance, and at the same time within the Directive there is quite a difficult article in there which basically states that if member states want to, they can take their own rules which are different from the solvent emissions directive to reduce VOC providing the overall reduction of VOC that's resulting is the same. This leaves the problem—that because of Article 6, and the Commission's lack of insistence on implementation in a standard way, we've got a danger that different rules will be adopted by different countries, and we're already seeing that with some sets of rules being adopted in different parts of the Netherlands, different rules being adopted in Germany, and there's also a serious danger that some countries may decide "we don't like this way of regulating in a reduction scheme, that we'd like to have a simple list of products with a maximum amount of VOC that you can use in them". Now, that takes away the flexibility that the yard has to choose the products that it needs. It also puts a huge burden on the paint industry to put together a total new set of products to comply with a series of product categories with maximum VOC levels in it. If we don't start seeing the solvent emissions directive implemented fairly and in a harmonised fashion across Europe we are going to see some nightmare scenarios developing whereby paint manufacturers have got to develop new products where performance may well be compromised because of the different approach in the different countries to implementing a one legged piece of legislation. So, in trying to address this issue, EUROMIG, the European Union Recreation Marine Industry Group, which is, if you like, the European lobby arm of ICOMIA, have been raising concerns of the marine industry and Albert Willemsen, who may be known to some of you, has been carrying out a case study in several EU yards to demonstrate that the reduction scheme approach, as written in the directive, works well, works fine, so there's no need to have any other approach to legislate. He's been working in six yards in Europe and put together a solvent management plan for each yard and he's showing quite nicely that if you follow the solvent management plan for the reduction of VOCs that it works and the yards can comply with the 2005 and the 2007 targets,

provided that they select the right products to do that. This project is now complete and EUROMIG will request of the European Commission that it promotes the reduction scheme as an approach to regulating VOCs in yards and that it pushes out a harmonised approach to implementation of the solvent emissions directive within member states. Now there is a presentation that's going to be made in November in a couple of week's time by EUROMIG to the Commission to this effect, so hopefully the result of that presentation will be that the Commission will be clearer about what it wants in terms of VOC reductions in boatyards and that it wants a reduction scheme approach which is the best way to do it. So the EUROMIG proposal that they will make to the Commission in a couple of week's time is that they will produce a guidance document on how the solvent emissions directive should be implemented in EU boatyards and that they will provide some standard documentation that can be used by yards to complete the solvent management plan which is one of the requirements that I mentioned earlier, and that they will be able to calculate the amount of VOC that they will need to reduce in the yard to comply. EUROMIG is also, I believe, suggesting that they put together data on VOC usage for each competent authority in Europe. So hopefully this action by EUROMIG will bring some harmonisation to the whole approach and we won't see different regulations and different approaches to the same regulations developing in different countries and we will see some harmonisation with the reduction scheme approach working in this sector. There is a position paper by ICOMIA on this issue which you can read on the ICOMIA website which puts together all the arguments for this, and so hopefully that will go forward. It's a real challenge going forward to make the Commission more proactive in pushing a particular approach to implementing this directive.

What's happening going forward on solvents? Well, the European Commission have just completed their new study on the amount of solvent in the European environment and they've published a document which is suggesting that they're calling for more VOC emissions to be reduced than at present and they're suggesting that VOC reductions of 51% compared to 2000 levels must be made going forward. So we can expect more and more legislation to be put forward to reduce VOC levels in all aspects of solvent producing industry including painting. The Commission has also decided to redefine the amount of emission that each member state can make, so that NEC's or National Emission Ceilings for VOC's will be fixed from 2010, so we can expect the Commission to demand that each member country will make a bigger and bigger reduction on VOC's going forward. We expect to see those figures in 2006. Cascading down from this will be a new set of laws, probably a new solvent emissions directive which will demand more and more reduction in solvent emission including the amount in paint.

So, just to conclude this brief talk, the solvent emissions directive is a European directive aimed at harmonising solvent emissions legislation in EU boatyards and if it's implemented in the same way across the EU we don't have a problem, however in reality the implementation has been patchy and varied, with different countries carrying out implementation in different ways. The VOC reduction scheme approach whereby the yard has got the choice to mix and match the products it uses to comply, is the most economical and straightforward route to compliance and allows yards the flexibility they need. There is going to be guidance on how to implement the solvent emissions directive from the European Commission, which hopefully ICOMIA or EUROMIG will be authoring. In future what's going to happen? Well, further reduction in VOC emissions will be required, so we can expect to see targets beyond 2007 asking for more and more solvent reduction but the reduction scheme approach would, again, work here too. Just to conclude and say that paint manufacturers recognise this as a huge issue and are working flat out to reduce the VOC's in

products, but maintain the performance as necessary in a high spec industry such as this. Thank you.

**Martin**

Julian thank you. Right—who's coming next? Ken—are you speaking?

**Ken Hickling**                      AWLGrip

Yes, I'm happy to if you like. I don't have any slides—it's just a short one liner, well, a bit longer than that.

People have been saying to me during the course of this week—well, your products are OK, they don't really go wrong all that often, it's all the applicators fault. Whilst I'm obviously glad to hear that our products aren't going wrong very often I thought to myself I don't really buy that it's all the applicators fault despite the fact that we could blame Ian quite easily I think. I took for my brief really, there was one part of the introductory paragraph that we have for this session is how to work better for the benefit of all concerned to remove time pressures and quality strains placed on yard and applicators and I think that's the bit I want to talk about very briefly. I think the first part of it is you've got to get a product that's going to be able to do the job concerned, and since we're not allowed to do advertorial, we'll assume that not only my company but all the other paint companies have just the right product. The second job is actually to have a place to do the paint job and, again, I want to redirect a little more tightly and say we're talking about new builds here; and the paint job that has to be done in amongst all the other tasks. And thirdly, it seems to be very much the case that the building yard doesn't do very much of their own painting—they tend to sub contract the job. This I think is the challenge I'd like to talk about because I think what happens, what can happen and what certainly does happen in some yards is that having sub contracted the work of painting, the yard feels they have also sub contracted all the concerns and worries and responsibilities, and I think actually there are three key parts that are the responsibility of the yard. I think the preparation and planning of how the paintwork is going to fit in around all the other tasks that are going on in a new build are the responsibility of the yard project team. We heard this morning how the project team is very important and I think that's absolutely their responsibility and you certainly can't sub contract that. Secondly I think that if you want the job to be done well, and at the end of the day as a yard you will be selling the boat to the owner—it's not the sub contractor who's doing that—therefore you need to take the responsibility of making sure that it's done to the standard you require whatever you may agree that will be in the contract—you should therefore be able to measure whatever you may consider to be the key attributes and therefore that is the job of the yard QC department. Finally, when the applicators are trying to get a decent job done at the weekend because there's no-one else trampling around on the boat you don't want someone coming and opening up the shed door letting in a whole load of dust blow in at the wrong moment. So therefore the environment and scheduling are also the responsibility of the yard management, and therefore the conclusion I guess is that the paint may go wrong because it's our fault, and it may go wrong because it's the applicators fault but it may also go wrong because it's the yard's fault. I think where paint goes well, everybody's taking their share of responsibilities, rather than believing they can sub contract it all away. That's my point for the day.

**Martin**

Ken, thank you. Before I bring the yard in with Rory, I think I'll just throw it over to Peter, who has something to say about the fancy world of pearlescence and metallic coatings. This is all scene setting stuff; we'll open it to the floor in about 10 mins.

**Peter Bergsma**      CSI

Thank you Martin.

Yes. Yards are getting bigger and more complex. Obviously we have seen as well that we get bigger and more complex coating finishes requested by owners. Our company as part of the build team was involved recently with a 48M power boat that required a complete pearlescent superstructure and a metallic coating system on the hull. We did try to persuade the owners not to choose that system but obviously we did not succeed so I would like to share with you — and I've been told to keep it brief — some information regarding how that went, and let's say the influence and ultimately what it meant with regard to the production schedule, the acceptance criteria cost and warranty issues. With regard to the production schedule, imagine that you are literally painting the yacht three times during the new build process. Obviously let's say when the fairing system is applied we require a show coat — that's more for the owner's point of view to check the fairness of let's say the fairing compound that has applied and the detailing around stanchion bases etc etc so that's the first stage. Then obviously you have the second stage whereby you have the application of the pearl and the metallic and let's not forget that the particular system we chose for this project just for the pearl coating consisted of eight or nine layers of top coat that had to be applied let's say in one hit. After that it has to be sanded again due to the amount of build up of these layers and a final clear coat has to be applied. So the general new build scenario that we all know makes it nearly impossible to achieve the desired result if the contract is not giving say the time and space to have the vessel on it's own to reach the desired result so on this particular project we built in a stop the clock scenario whereby the project was literally given to the contractor, there was nobody else on board, not even on the interior. This resulted I think in the end in a very good finish. Also you have to take into consideration for sure that there are shipyards out there that are not going to be applying to us because we have to fit it into the production schedule. Imagine that if you apply a pearlescent finish and you have to apply say eight or nine layers of coating you are literally talking, as we had on this project of twelve to thirteen hours of application. So the general production schedule whereby an applicator starts spraying at 4 or 5 o'clock in the afternoon and makes sure he's finished at twelve o'clock so when the shipyard people come back in again at 7 o'clock in the morning obviously this doesn't work in this scenario. Twelve to thirteen hours was a pretty standard rate for the application. Also to give you an idea, we had approximately 1,350 sq metres let's say to be finished as well in metallic as well as in pearl. If we can all do the calculation in general that would be approx 350 litres—I think I wrote it down somewhere— of an all grade international top coat. We actually applied 1,863 litres of top coat material which includes from say the moment the show coat is sanded let's say to the sealer including the complete pearl metallic the clear coat and again the clear coat finish after that. Which is literally if you do the calculations after that—five times as much as let's say your standard normal top coat. So we can all see what the implications are let's say for production schedule on that. The next point obviously that has a large influence on is the acceptance criteria preferably when an owner chooses to decide or when he chooses to have a pearlescent finish or a metallic finish this should be well discussed before the contract is signed and not so much as an addendum to the contract when the owner suddenly turns round and says well maybe I should have the superstructure in a silver metallic or whatever. Joop started the discussion about four or five years ago about the standard in yacht

finishing and I think this was more reflecting to the overall standard as in the topcoat finish but also the standard as in fairness straightness. I don't think this discussion was really ever finished as the industry wasn't really ready to handle such a complex situation because obviously it depends on various large influential items as contract cost, production schedule, the contract with the yard etc etc. We can all understand if let's say we understand the working of a pearlescent coating you can see that to be able to have a very good result with pearlescent coating the underneath layer substrata in the fairing system has to be nearly perfect; any large undulations that you will have in the fairing system even let's say detailing around portholes stanchion bases etc will simply show up as a different colour which is very frustrating if you look at the boat after—and you go look, I thought it was supposed to be white and you've got blue and purple and all that. Therefore if the choice has been made for pearl and metallic coatings from the beginning obviously it should be—the task becomes very difficult to choose your shipyard, to choose your contractor, to choose your paint system, because obviously there are several paint companies and several paint manufacturers that are producing these coatings. Also in our opinion the acceptance criteria inspections during the new build are very important and have to be let's say followed up very closely, because by the time the show coat has been applied and if that has been used as the guidance to judge the fairing if it has to be redone at that particular time you can see the influence and the cost it would have on the production schedule and the overall let's say launching of the vessel. Again, I'm repeating a little bit but to expect a very high standard of the coating finish, let's say according to the agreed contractual acceptance criteria in my opinion we need to give the contractor and also the yard every opportunity to achieve these results. Basically meaning obviously a sufficient time frame within the production schedule to apply these coatings most of all as well excellent environmental conditions, temperatures, extraction, everything plays a very important part when you are spraying let's say coatings for twelve or thirteen hours in one hit. A stop the clock or let's say a clear vessel becomes very important to an applicator to be able to achieve but also I'd say deliver the coating to the owner, to the client, according to the concept of the contractual acceptance criteria. Briefly talking about cost involved for these sort of coatings, as said earlier on this particular project we used 1,863 litres of top coat for about 1,350 sq metres which is about five times higher than the normal system. Obviously the cost of the base material of pearl and metallic not so much metallic but definitely pearl is a lot higher than your standard all grade International gallon of paint. The production schedule obviously by finishing the vessel three times during the production schedule, obviously you have a massive increase in general yacht costs, just looking at hard standing heating scaffolding etc — obviously these become a lot higher because you literally take three times longer to finish the vessel. Also an important point is that with a lot of yards—and we're discussing these items at the moment with the yard—is the removal and replacing of hardware. If you are applying a metallic or a pearlescent coating finish imagine for example a bridge door —normally with a bridge door you are talking about a top coat the bridge door would be taken off, sprayed separately and would be installed when everything has been approved. By the time obviously you want to apply a pearlescent coating and specially larger areas as a pearlescent coating has to be sprayed in situ. That means the implications for the yard and ultimately for the owner to shoot the rims and let's say the trims of the interior of the door frames and all that have to be sprayed twice as well. So at least you are looking at removal and replacing of hardware three times compared to your standard one for when you are talking about the normal coating finish. The overall contract costs for the applicator is going to be very very high if you just look at the overtime bill that the applicator is faced with for shooting twelve and thirteen hours in a row, taking into consideration as well that he has to spray the vessel three times, we can all see where this is going. Maintenance costs obviously of pearl and metallic coatings is a different ball game again, if you look at the

standard of the yacht crew these days they can pretty much handle a brush or a small spray gun to touch up let's say your white or your flag blue —obviously this is a different ball game when you're talking about pearlescent coating finish or metallic. The other downside —not to be negative— but the downside of these products is as well that if you have a scratch or a dent or whatever it is very difficult to do a patch on these items regardless of what the paint manufacturers say. It's very difficult to execute an acceptable patch, basically meaning that you're going for your next coat line scenario. Obviously all in all that makes it reasonably difficult for the crew to maintain the vessel in a very high way. Just briefly touching on the subject of refits obviously if during a new build you are applying—or literally finishing the vessel three times—when it comes to a refit period after a year obviously you are repainting the vessel twice; you are applying a metallic and pearlescent coatings followed again by sanding and application of the final clear, so this obviously takes then at least double the amount of time that is necessary to refinish a standard yacht. Obviously you can imagine what the influence of the timescale on that one is. A little worry on that is the influences of the capacity of the yacht and the applicator, obviously there are not that many applicators out there that can deal with larger vessels and also are stuck with vessels that basically they have to spray two times; there might be an implication on how many boats can be sprayed, let's say in one year. Touching briefly on the warranty issues, when it comes to pearlescent and metallic coatings apart from the odd few, I believe it's du Pont that have a standard metallic coating, there's not that many people that have a pearlescent coating so what we are faced with in the yachting industry is that largely these pearlescent coatings are being drawn from the outer mode of industry. If you asked any paint manufacturer they would say what is the warranty that we receive from you? You'd say well we'll give you a product warranty but we will not give you an application warranty. Obviously this is based on the fact that although we can spray a 100M vessel into pearlescent coatings, the amount of coating that is literally being applied is very small compared to what they deliver to the automotive industry so hence the fact that the research and development for this particular area they are not interested in yet, to come up let's say with a sort of 'yachty' pearlescent finish. Due to this obviously there is no official formal guarantee or warranty in place yet for these sort of coatings or at least that's the last one that I know of. There is a product warranty but there is not so much an application warranty which basically means that if a shipyard builds a vessel they will probably guarantee or warrant to the owner of the vessel up to a wide standard or let's say to the original show coat that they have applied and anything that is after that will probably not be warranted. I might refer that later to Ken, which is a good one. This is basically or roughly a sum up of let's say the implications and the difficulties that we see from application of pearlescent and metallic coatings on larger surfaces especially when we have a lot of clients at the moment specially from the Russian sector that think these finishes are very sexy and obviously they would like them. Again I'm not trying to paint a negative picture but I'm not sure that all parts let's say of the build team including the shipyards are aware of the implications it has on production schedules, cost application and everything when applying a metallic or pearlescent finish. I believe it's our job to inform them correctly about these implications so that disappointments during the new build etc will be avoided.

Thank you.

**Martin**

Peter, thank you very much. That was 12 minutes, not ten!! Rory do you have a few words to say or are you going to open a debate now?

**Rory Marshall**      ISA Yachts

I think I'd like to open a debate.

**Martin**

Can you put my lights up please so I can see who's here? I know there's lots of other paint people in the audience —there's a panel there of people eager to debate the topic —well, one of the subjects I'll throw in is where the hell are all the applicators going to come from to cover the order book for the next three years? Who's going to answer that? Does anyone have an answer? There's no answer, we're all screwed. Ian, come on, you must know —you've found loads.

**Joop Ellenbroek**      CCS Yacht Coating Services

Yes—if your question is where do all the contractors come from one of the easiest answers is that they come from Greece—all of them. The problem is of course that the industry is growing, and we're all very glad that the industry is growing like this but we've seen a serious situation over the last several years where the number of applicators that are capable of handling larger boats is very limited and what we see quite often is you know, even in a situation where you have good preparation on all sides, you are faced with contractors that if they have good foremen there still is a lot of guys in the crew that have not touched a sanding board or anything like that before. That's it, that's the problem that we are facing all the time and there's not an easy answer to that, because there's not really a training ground. The training is on the job and if you train guys on the job you're bound to make a few mistakes, but you are not allowed to make a lot of mistakes in yacht coating because there's no time, because of the order portfolio from the yard, so there's not an easy answer there. Right now we have to do with what we have, and some are good, some are less good —but it's the actual situation. I don't have an answer, I'm just describing the situation.

**Martin**

Sure. Ian might have an answer?

**Ian MacDonald**      Classic Yacht Refinishing

I don't. There is no hope for us, I'm afraid.

**Martin**

You said that about robotics yesterday—where to find all the robots. Any comments from the floor—where are we going to get our next batch of applicators? Bert, thank you. Wait for a microphone please Bert. It's worth waiting.

**Bert Nieuwenhuizen**      Boero Bartoloimeo

Thank you. I can't really answer the last question you asked about where are we going to get our next batch of applicators from, but what I do know and that fact I agree with Joop that the majority and I would almost say 90% of all the applicators that are actually working in the industry did not really get an education in some sort of school or whatever, they all got their education on the floor doing the job. That's how it worked and that's how probably it will continue to work in the near future. Maybe one day there will be a school where a lot of applicators can get a proper education but that's not the case at the moment. OK, that's one thing. I would like to ask

actually two questions. One, connected to the first presentation of Julian Hunter—I would like to know where did Mr Willemsen with his reduction scheme approach, did he do any of that with any shipyards in Italy? I don't need to hear any names, but just out of curiosity I would like to know if any major shipyards in Italy were approached to actually not tackle this?

**Julian**

Not to my knowledge, I don't think there was an Italian shipyard in the project, but is Albert in the audience?

**Martin**

Maybe Albert can answer personally? Isabella, can we just get the microphone to the middle there —I'll come back to you in a second, Raffaello. Unless you can answer the question yourself personally from Benetti?

**Albert Willemsen**

Six yards are divided about over three member states in Europe and besides the six yards we have from seven member states including Italy background information about the SED and the solvent emissions.

**Martin**

Can you name the yards?

**Albert**

No. I promised I wouldn't.

[from the floor]

OK. I don't need to hear the names but the only personal remark that I have is that we don't get yet too many questions about let's say the VOC levels of all our products when it comes to our Italian clients—of course this needs to change and of course we have all this information available if they do ask but that gives me the feeling that this whole important subject doesn't really play yet in a lot of Italian shipyards.

**Martin**

Yes, please Rory. Your Italian shipyards?

**Rory**

I am a paid consultant for an Italian shipyard. We have various stringent regulations on the VOC emissions; we've compiled the complete database of the technical datasheets of all the products that we apply and we have entered into the reduction programme as a shipyard and we follow the State regulations that are required in Italy.

**Bert**

Well, that is at least one. Then the next question, if I may continue very briefly is of course to Peter. We are actually one of these companies that introduced a pearlescent product on the market to actually well, offer applicators and shipyards a choice. I only want to say it's not—I agree with whatever you told and whatever complications are connected to one, the application, two the repairs, every single detail I agree with you. The bottom line is basically it all comes down to money, cost. If the owner really wants it the only thing we as a paint supplier can do is explaining all the difficulties and the angles that are connected to this choice but if he really wants it then—we can only support him.

**Martin**

Peter, please?

**Peter**

I agree with that. I was actually referring more to —we all know how addendums to a specifications obviously occur while the contractor is already starting the work and the implications—let's say the difficulties—that there are regardless which manufacturer produces the pearlescent —the difficulties that there are literally in the application and the influence that it has, on the project itself, makes it I think for several yards very difficult to actually take these on. I mean if you had a shipyard whose main focus is to deliver the yacht during the production process including the painting of the vessel and we all know that it's been very difficult from the start to get for example flag blue finishes; we've overcome that now. Now I think we're into the next phase of having very difficult metallic and very difficult pearlescent finishes, but I agree with what you say. In the end it's money, but it's also the fact that we can deliver the product to the owner with the expectation that he has and obviously this is nothing to do with cash, it is very difficult to achieve a nice finish but we witness it now over the last couple of months and this is not so much to do with cash but it is very difficult just to get that.

**Bert**

Just to add, maybe to the public, you were mentioning the product is very expensive—I can just give a rough figure—we're talking about something in between 600—800 euros for one litre. Just to give the comparison.

**Martin**

Compared with what?

**Bert**

Compared to a normal colour which will cost you 50—60 euros so it's roughly ten times the price.

**Peter**

I didn't want to throw in any figures, but yes, those figures are correct, yes.

**Martin**

Joop?

**Joop**

Yes, it's always good if you have a few minutes to think about the questions. Just a few minutes ago the question was asked, where are all the contractors coming from for the future, in the growing market. Well that's a question to ask that's not easy to answer, but how do you solve it? How can you solve it as a yard, for instance. What we've seen over the last couple of years is that for instance some owners say I have seen some problematic yachts as far as the coatings are concerned in the past. With my new boat I want to have the fairing and painting done by this contractor. And believe it or not, it's rather unusual of course that the owner is exerting influence on which sub contractors the yard is going to contract, but it happens and is one way of trying to control or to have influence on the final application. Whether it always works or not, that's the second question. But it's a typical sign right now of what's going on. That's one thing. The other thing is of course that as a yard what we see is that those yards that have an inhouse contractor or semi inhouse contractors have less problems than the yards that go out for a sub contractor every time they have a new build. That means that there is a consistent workforce in the yard, working according to a specific application system set by the yard. If you handle it this way there's less risk. Of course as a yard you have to have enough capacity and work for the contractors but there are two things that I've just mentioned that you see in the market right now—to circumvent any potential problems with unknown contractors.

**Martin**

Thank you. Anyone coming in? Anyone itching for the button?

**Peter**

I never itch Martin. The only thing I would like to add as well is if you have, I agree with Joop, is that you see it as well with larger applicators if they are out there— that not so much the client but also shipyards are demanding that a certain team from that applicator —if you have a large applicator that runs several teams —that has several foremen— makes it very difficult for a contractor to be a go between because we literally see scenarios where either the shipyard or the client turns round to the contractor and says well we'd like obviously for you to execute the work but we want that foreman and we want to see those people on the job. Which obviously complicates the system even more.

**Martin**

Ian?

**Ian**

Two issues here I think. Being serious, the first thing an applicator needs to do if we're talking about a service industry is to be profitable. Without profit you can't hire people at the right cost and train them, and I see a lot of non support for the better applicators out there, from the shipyards and from the industry and from the captains, where price or time becomes an issue, not quality or the quality of the workforce, so there are some issues there that need to be addressed by the industry as a whole. Then listening to the VOC's we've got another issue coming down the tubes. In the years I've been painting boats I can't say we've seen any significant improvement in the coatings that we're applying. That is, in the ease of application, in the quality of the finish, or the quality of the coatings or the support we get. Now we're talking

about VOC's which obviously means they're going to change the composition of the coatings, what are we going to be using?

**Martin**

Any answer to that?

**Ken**

You're going to be using a product which is harder to use, has a worse aspect, and probably will last longer so you won't have to repaint it again. So you'll get less business as well. It's a pretty bleak picture.

**Martin**

Any other manufacturers out there who want to comment? Yes, comment from du Pont at the back. Sorry Raffaello I'll come to you in one second. I'd just like to keep this flying. Behind you, Isabella, and then down the front back to Bert. We'll have du Pont first then Boero and there's a couple of other manufacturers out there who may want to say something.

[from the floor]

Maybe just to add to Ken's comments, I think the product systems will have to change and I think there's probably only two ways of changing them. Those are a higher solids material, which increases the transfer efficiency which therefore reduces the solvent emission. That does create a slightly more difficult aspect to application and the experience is for the moment that that will increase what's known as orange peel, which I think is one of Joop's favourite subjects, but that will increase that as a consequence of using a higher solids material and that will apply to clear coats for example, and solid coats. The other issue is that somewhere along the line water borne technology will probably creep in to the systems, especially as we're seeing more and more leaning towards special colours, metallics, pearls, even certain solid colour base coat applications. So that will change and the product compositions inevitably will change.

**Martin**

Thank you. Bert?

**Bert**

Well, I agree with du Pont in this case, only with recent results that we've seen with the high solid top coat that we've put on the market I think that the picture that Ken Hickling just drew is very very dark and if you want to start on the dark side to slowly walk to the light, OK. But I don't think that the answers that we've come up with—if we only talk about top coat so forget about let's say the primers and whatever is under it, if we only talk about the top coat I have a far more positive idea about using low VOC high solids.

**Ian**

Just to come in there, we've used high solids in Fort Lauderdale where it's obviously fairly hot—there is no way that anybody can give a finish in our environment using high solids at the moment that any owner would find acceptable.

**Bert**

Then are you willing to try out our Challenger in Florida when we ship it with the next shipment to your shop?

**Ian**

Sure, bring it on. With the warranties and also if it's not acceptable I'd like you to bear the cost, not us.

**Bert**

Well, we can discuss that.

**Martin**

On the records. OK. Raffaello.

**Raffaello Putti** Benetti

My turn now.

**Martin**

You've been very patient.

**Raffaello**

I've two comments and two questions for the panel. First, comments from a yard perspective. We all recognise that paint is maybe the most important feature for a yacht any type, any size. But also we have to accept that not a single international accepted standard exists for application, check of the control and visual acceptance. I don't know anyone, maybe you know more. This is extremely difficult for yards because the second comment is, we all agree, I think you agree too, that there are no answers to improve significantly the quality of paint, keeping manual applications, either by internal contractor, part internal contractor, external contractor. We need large investment to make this difficult process more industrial. When I say large investment I mean really large investment. Now the questions then are two. One, don't you believe that work hard for the whole industry to create internationally accepted standards is a pre requisite for a significant improvement that pass through investment by yards and by partners of the yard and second question is, do anyone of the panel know about ISO starting a process of issuing an internal standard for acceptance criteria for paint?

**Martin**

Well, who's going now? The two experts. Joop first.

**Joop**

Yes. International acceptance standards. As you know, I've started this discussion about five years ago by an article in The Yacht Report about standards. The reason was very simple. I got a lot in my work of requests from owners and yards to come in and be a kind of judge on the quality of what has been applied. Based on those experiences I said well there must be something—it must be possible to create something that at least we have on the table that can form the basis for a quality criteria. That's where it started and one of the hiccups was that there is not an international organisation for the yacht industry that can kind of endorse or support such a standard. As Peter already said, it has been discussed at length and my position has been at a certain moment to let it go and say OK, if there's not an international standard, then leave it up to both parties being the owner and the yard, to discuss what is required. Because at the end of the day we are talking about customised yachts and each and every detail of the yacht is being discussed, so why not the quality of the coating required. So that's one thing that's happening. I see it happening—I'm writing those specs myself in many cases but also what I see is that yards are fed up with the discussions at the end about the quality, the cosmetic quality. Because sometimes it's genuine discussion, sometimes it's discussion fed by lawyers—they think well if we say the coating is not good maybe we can get a discount, or we can get a free repaint. So all these things are playing a role. One of the things to do in my opinion is that in the absence of an international standard is that the yard itself sets the standard for themselves. They say this is what we do, this is what we deliver to our owners and you can show it in many ways—if you want a panel or if you want a description, but the yards themselves should say OK, this is us, as far as paint is concerned. Then you have this on the table when you discuss it with potential owners. That takes the heat off the discussion afterwards. Of course you have then to sit down with your preferred sub contractor to get it done so you have to have the chain closed, otherwise you're offering something as a yard to a client but there's no way you can achieve it. That's shouldn't be the case. So that is the situation as I see it at this moment. If I may for another two minutes....

### **Martin**

One.

### **Joop**

It touches upon something else. When I started my company 15 years ago you went into a yard and the yard had contracted something out and the stuff was being applied and basically it said OK, it must be a good boat, white and shiny and it's got to be ready next April. OK. That's how it went. Nowadays it's different—there's more pressure, the yachts are bigger, the costs are higher, and there's more lawyers involved and so the whole situation has changed. Also, if you look at the market, management of yachts has changed. You can't just manage your boat anymore. There's all kinds of rules—MCA's involved and what have you. The only thing that hasn't changed much is how to set up a painting situation. So I started 15 years ago by just checking a couple of things, now we are in the third phase—where yards realise—they made a calculation, they say OK, the last ten boats cost us so much, every single boat had a problem with paint, so this cost us so much, isn't there a way to do it in a different way? Yes, there is a way. I have signed contracts lately and will be signing another couple of contracts in the next few months with shipyards that are fed up with that situation, talking about the quality of the paint afterwards, paying dearly and also it's damaging our reputation, so what we are doing now with some of the shipyards is that we sit down and say OK, how do we go about—we make—it's laid out in what we call a paint manual that means each and every detail from the whole painting process is laid out in the manual and discussed with the owner before

we even start. One of the things that has been discussed apart from quality is for instance how do you relate with for instance the captain? There are captains who want to see everything every day from the morning to evening, harassing the contractors. There are captains that don't say a thing but at the end of the show they say well I don't like it. So there must be a better way of doing it. So one of the things in such a paint manual is laying down the law as far as relating to the owners representative is concerned. An inspection plan. When is the captain invited to do an inspection? If you discuss all those things before you start you don't have a problem. You may have discussions but not a real problem. Because it has been discussed. Repair systems—you know, if you have a problem with damage how do you go about repairing. All those things are laid down, and as I said, some of the yards are waking up and saying let's try to do it in a different way, let's try to do it right, right from the start. This is a situation that is developing and by doing it that way you can at least try to avoid a lot of problems down the line.

**Martin**

OK Rory, come in.

**Rory**

Yes. I was just going to say we worked with Joop in a recent project and we followed this standards plan or the paint manual system to a certain extent. It's actually quite difficult to set these standards inside the shipyard with the project planning and all the rest of the structure and the construction schedule that's in play during the actual procedure, but it's a voluntary system if you like, it's not a standard that's been out there that is written down but we've tried to introduce that into our production plan; with our applicators we go to them and ensure that they can reach the standards that we've been setting for our clients if you like in the earlier discussions. It's a system that's beginning to work; we've had to introduce quite a lot of procedure in addition to just the paint manual; these gradual inspections have to be carried out all the way through the project, it's not just something that you can set up at the beginning and then think that it's going to go through smoothly. Because there's nothing out there as a prototype, if you like, we've had to develop it as it's gone along, so it's a thing that's in development and we've worked with Peter Bergsma on the recent pearlescent project that he's been talking about and with the owners representative team there, also very closely involved with the project, trying to keep them closely in touch with progress step by step finishing and completing of standards as we have finished them but as I say, it's been quite a learning curve and I think that you will all understand particularly considering the type of project and the type of finish that we've all been looking for.

**Martin**

Thanks Rory. A question that's come in on SMS to the applicator experts. The inspectors, as they've been nicknamed. You set these standards and presented them here two years ago with some sample panels, Joop, why are yachts being rejected that allegedly exceed those standards?

**Joop**

I'm afraid I don't understand the question.

**Martin**

A set of standards have been set and discussed and presented to the market a couple of years ago here in Amsterdam and yet according to this SMS, projects or yacht finish is still being rejected, that exceeds the standards set. Is that true?

**Joop**

I remember that we have indeed presented some panels with an indication of how to measure it and as far as I remember this was the way — as an example, how you can set a standard for a particular project. So what I have done is given the industry a tool, OK. Now it's up to the individual projects, let's say the yard and an owner, to sit down and say OK this is a nice tool, I want that particular finish based on those data with those qualifications. If that has been agreed then there should be no reason to reject anything that's beyond that standard. If there is a project where nothing of this is on the table, where there has been no agreement on anything like this, you still down to let's say rejecting or accepting on a subjective level. Now if you in hindsight say hey, the quality of this particular section is better than the panels that have been shown here, then that's irrelevant. What counts is what you have agreed at the start of the contract, what's good and what's bad. That's what counts.

**Martin**

Right. Ian?

**Ian**

Yes, there's a couple of issues here that haven't really been discussed, and the standards don't encompass all aspects of the paint job. The eye is the final judge and that's where we have a problem. I think Joop has done a tremendous amount to introduce a standard but it's a minimum standard, not a maximum standard. At the end of the day if we have an international standard or a yacht standard or any other standard, which I applaud, somebody's got to judge it and with the best will in the world Joop and everybody else that's a paint expert are getting paid by somebody to judge that finish and you have to have an independent person to judge a standard. Without an independent person it's not a judgement at all, is my feeling. That person doesn't exist.

**Martin**

How many independent people are there?

**Ian**

That's one of the dilemmas we're going to face.

**Martin**

How many Joops and Peters are there in the market?

**Ian**

You've just named them!

**Joop**

Hopefully only two.

**Martin**

You're going to be busy.

**Ian**

At least half a dozen.

**Martin**

I know of half a dozen. I just wondered if there are any more coming up? Are the manufacturers looking to develop them? So they're independent?

**Peter**

If I can react to this one, I was contacted by someone last week who compared let's say our prices and what we charge because obviously everybody thinks we overcharge—and I said well what are you referring this to, because he said well as far as my knowledge is concerned there's only another two companies that I know of that I would find colleagues that could do the same kind of job and obviously we were compared to commercial inspectors that inspect either oil tankers or chemical tankers and I saw one of those reports and yes, the prices were lower than what we are charging but we looked at a couple of pictures that were very nicely done but it did not come to a conclusion and nor did it have any scientific data in the report so in that respect I said yes, I think in my opinion there are only three out there I think that can roughly do the job.

**Martin**

Ian in your experience who is the best judge of the finish? Apart from yourself.

**Ian**

That's a leading question. You know, one of the problems I experience is the expectation equation. What is the expectation. The trouble is that the higher your standard, the higher the expectation and it's something that all of us struggle with when we're trying to judge a paint job, even myself. I look at it and I know that it's met Joop's standards. Has it met mine? Maybe not. Has it met the owner or the captain's expectations? Sometimes yes, sometimes no. And it comes down to what is success in painting. Define that. And unlike for example an Olympic runner who wins the 100 metres—he gets a gold medal, it's a success. There is no definition of what success in painting is. I don't know if we can ever get it. Maybe we'll continue arguing for ever.

**Peter**

I think the problem with standards is, if we talk about standards round this panel then we are all referring to let's say either sailing vessels or motor yacht vessels that are either 40M and plus, just to give an example, I had to go back to the drawing book our company wrote the QV levels for, because they're starting a yacht painting school in England so we wrote the QV letters for the British Marine Federation. The problem with that was that everything I came up with they said yes, Peter, that works very well for a shipyard like DML or Pendennis but you also have to include the guy that literally has two painters in his backyard boatyard and obviously he has to follow the same sort of standards so I agree with Joop, we will probably end up with a

standard probably per shipyard and it has to be I think clear from the beginning and made clear to the owner before he signs the contract as to what can he expect coming out of that particular yard and that contractor. I do not think we will ever have an international standard that can be applied to all the shipyards and all the contractors. It depends literally where they are working and investments that have done by the shipyards.

**Martin**

Yes of course. If Isabella comes up to Raffaello, you carry on Joop.

**Joop**

I agree. As I said, and Peter joins me there, this is a highly customised market. That means that in my opinion also the yards should sit down and say OK, what is it that we want to offer to our customers? What kind of customers do we have? What is the right level of quality therefore that we can offer and at this price that he's prepared to pay. Because if you have one international standard, who is going to determine what it is, that's of course the practical question but then again maybe yard B in Italy has a different opinion as to what they should deliver to the market than yard V in Holland. So you can't really have in a situation like that one standard, because in both situations both yards may be very unhappy with the level, so I would say the yards — and as I said earlier this is happening right now—some of the yards say OK, let's sit down and what are we prepared to supply and advertise and market to the yacht market. And how can we make sure in our own organisation that we indeed supply the quality that we are advertising. And I think that's the way it's going right now.

**Martin**

Thanks Joop. Raffaello?

**Raffaello**

Two comments. Paint is not like human life. It's not strictly necessary. Paint finish. So any standard of paint being visual acceptance has to be voluntary, I thoroughly agree. But voluntary standards like painting could be, normally can be, graded. Grade A, Grade B, Grade C. But it is important that they are stated, and they are not left to discussion. If they are stated, and it's hard work, especially from expert, to devote to state what is your knowledge and the knowledge of an applicator and of a builder, then a builder can decide which one to apply— Grade A, Grade B or Grade C. To simplify, if I have to in the contract— if I have a speed I can put a speed of 20 knots, 22 knots or 18 knots I know if I have done my homework, my design work, I know that for 18 knots I have to put thousand horsepower, for 20 knots 2000 horsepower, for 22 knots 3000 horsepower. I know how much it costs. This is what I meant before. If we want to achieve something, we want first to see written what to achieve and we want the other party —the whole world to know that we are aiming at that. Because only if you know what is the specification then we can plan the investment and judge if the investment that we have is worth it or not worth it.

**Martin**

Thank you. Do you want to make any comments on that? Ian, go on.

**Ian**

It's impossible to do what you're suggesting. It's a nice idea. In a paint job of completed paintwork there should be some accepted norms. The integrity of the coatings has got to be as intended. You can't have A B and C because what you're going to do is introduce failure. And one of the problems we're seeing is the integrity of the coatings coming out of the new builds is not there. It's not as intended. There is absolutely no reason why even with the present technology a superb paint job cannot be completed. The discussion should be about the finish coat and the straightness—those are the only issues that should be up for discussion, but the actual integrity of all the coatings from the bare aluminium steel to the top coat should be absolutely as intended as designed.

**Peter**

Also the problem is it is incredibly difficult to explain to an owner that he can choose out of two or three different finishes, because unless he is in the paint industry he will literally not understand that item. I think 25 years ago when I was still standing on scaffolding and trying to paint boats they had two standards in fairing and you could go for a superyacht standard or standard in those days and the superyacht one involved one more layer of fairing compound. So there were a lot of clients at that time that chose option B. They chose it at the time that they signed the contract and obviously when the cost was involved they had to pay less. When the time came for the delivery of the vessel they were flabbergasted. They said well this is not what I expected. So it is very—including international standards and what is right and what is wrong—it is very difficult to define to an owner—what is his expectation level?

**Martin**

Thanks Peter. Bert behind you I have a question there —I'll give it to Bert then Tom we'll finish with you.

**Andrea Pezzini** Floating Life International

I am a representative for the owner. My company's management yacht and normally I survey the boat for our client. All our clients they request that we need a minimum—something that is possible to show to the client and the client have checked for the painting finishing. Actually many clients have shown me their cars and told me I want it like my car. But this is not what it is possible to do. That's why I and my clients are thinking that we need some example for the minimum standard for the painting, otherwise anything is possible—to discuss in the yard or anything it is possible to understand what is possible to apply, what is possible to discuss—we pay a bigger amount every time for painting but when we discuss about the finishing all the shipyards give us a different answer about the finishing. That's why we believe that we need a minimum standard for the painting.

**Martin**

Thank you Andrea.

**Peter**

I do believe that there are standards— I mean obviously we always suggest to shipyard to make acceptance criteria panels which was previously discussed. When one talks about acceptance criteria levels obviously there is a level or there is a criteria for gloss levels, there is a criteria in principle for straightness of fairing compounds, there is a criteria that obviously pulling is not allowed, there is some

criteria for dust inclusions which obviously we are trying to force the shipyard to agree to. It is not so much that it is very difficult to deliver a vessel completely to those standards but as consultants we have an opinion that it is better to start very high and maybe end up somewhere in the middle. So I do think there are certain standards available that at least we are—and I'm sure Joop as well—is writing within the specifications that we write for the owners.

**Martin**

OK Bert?

**Ken**

If I could just come in on the point about the cost—there's a little story that I'd like to relate to you of a superyacht that was having some difficulty with the acceptance of the paint finish and the owner was digging his heels in quite hard saying it wasn't good enough and I don't know whether it was an expert of an independent nature or somebody from the paint company or from the yard who demonstrated that the finish on the car was considerably worse than the paint job achieved on the vessel. Cars currently today, partially because they are complying with VOC regulations and often using waterbased paint have a lower gloss than they used to, they certainly have a lower gloss than we achieve on boats today and if you could set the car as the minimum standard I think a lot of people in this room would be quite happy.

**Martin**

Bert please?

**Bert**

I want to comment on the remark of Peter when it comes to setting the standards or looking at different shipyards or also looking at different countries and making comparisons between them and setting standards. This is as the two gentleman over there agree, basically impossible—I mean if we discuss the major shipbuilding countries well, but nowadays there are so many countries where they build superyachts that I want to give a simple example. After finishing the Maltese Falcon that most people in this room will probably know, all of a sudden Turkey was put on the map. A brilliant superyacht finished in Turkey. Without actually looking at paint standards this fact is for certain project managers, certain owners enough to put their trust in other Turkish shipyards. They simply say OK, they're capable of finishing a vessel like that, it looks great, so probably also the other yard which is all the way on the other side of Turkey will be able to do a good job. It can be as simple as that. But that is far far away from setting the same standards for different shipyards or even different countries, because sometimes I go to a shipyard and you even have to discuss proper scaffolding. I don't know.

**Martin**

Thanks Bert. Tom—can you come in?

**Tom de Vries** De Vries Scheepsbouw

We started out with the VOCs and it's something that really got lost in the translation, I think. It is something that I as a shipyard worry about—my cousin has sold boats up to 2010—yippee—I mean we have to finish those things and we have said to the

client that we will finish it in our usual Feadship standard, which is something that we can discuss as well later. But I do not know if I can get that Feadship standard in four years from now because with the change in VOCs I don't know if I can get it. I have to do it because the client—I've signed a contract with him and I've promised him and he knows that we can do a good paint job but he might not be getting it, and how can I tell the client that, with an environment that is getting more and more important. That is one of my biggest worries at this moment. We are talking to various paint manufacturers—all of them—let that be clear—but it is a very tough thing to do. I'm lucky that in my shipyard we brush everything, we do not spray, we spray certain paint layers but the majority is applied by brush and therefore I have not as much VOCs as other shipyards. On the quality, where we ended up because we all know or do not know what quality of paint is, I think the most important thing is that the client has to realise that he gets what he's paying for. You can not say to a shipyard in Turkey that they want something to be finished like a Feadship that he just saw but the client would really like to have it like that—but it's all to do with the budget. If he does not allocate the budget to his paint he will never get that specific paint finish. That is one of the major things—we get captains that say oh, it's beautifully painted—but you have to have a budget—and that is to all the project managers who are looking at other shipyards—bear that in mind. I think with paint the most important thing is that because it is not a hard criteria, it's not like you put 3000 horsepower in it like you just said, and you do 70 knots or whatever, like Don Caneston usually says about these things—every human being has two things in common. We all have a backside and we all have an opinion. I think that is how you can qualify the whole discussion about the quality of paint. We all have an opinion on it.

### **Martin**

Thank you. We'll open it to the panel. I agree with you Tom. I had a situation with an owner that contracted me to do a brochure for him and the quality was perfect, you wouldn't draw a colour presentation, but the owner had a whisper in his ear from a rival publisher that said oh, it's not quite right and the owner rejected it. Because it was an opinion that was fuelled by someone else's opinion and this is what happens in the market. These guys hate to be wrong.

### **Petro**

Well yes. I am a marine coatings inspector. So we talk about standards. Is it three or four years that you begin to push the market to have some standards in the painting industry but we forgot that also from the other part we have painters, many is 95% of handwork so the first problem I think is to check this 95% doing the job. So how—or who can control these handworkers, this is the first point. Because many times the shipyard chose a paint applicator because the price is cheaper than the other, I don't know which is the idea to choose the paint applicator on board—this is the first problem. How to control this? We don't have any rules about the paint applicators—I think Joop agrees about this. How can we apply some standards at the end of the job if the paint applicator is not a good paint applicator. Or in certain people 25 are really poor people—well not poor people but not really good people or professional people. So this is the first point. And the second point is I think also that our industry should be growing about the paint jobs. I think that the shipyard should be making a step up from now because many times the problem of paint burn during the construction because the shipyard—the date is delayed or delivery of the ship is delayed and because the owner makes a lot of changes during the construction of the job. So I think it is better to make a step up now before to introduce some standard and also another question is—I don't know, but I observe that many programmes burn after the painting when on board for the inspection arrive the people are not really a

marine coating inspector so who can decide that the paint is good or not. If I have one man that they have no idea what is a paint job on the shipyard how can these people say yes it's good or no it's not good. I suppose that there are in Europe just maybe ten people that can say yes this is a good job or no this is not a good job. Joop what do you think?

### **Joop**

A lot of questions!! If you have a job that is contracted like that, for instance, you have a job where you say OK you ask a few contractors and you give the job to the lowest bidder then it's very difficult to come afterwards with all kinds of standards and criteria because then the contractor will say hey—this was not contracted and now it's going to cost more money and time. So it's a lost situation. What I have said before is that if you really want to make sure that the job is done properly with the right quality you have to start much earlier and in my opinion you have to start as a yard. Let me give you an example. At this moment we are discussing a very very big contract—we are involved for the yard. We said OK, what do we want as a yard for the future. The yard wants to be number 1. OK. Great. That has consequences—it means that you have to set your own standards as far as quality is concerned and then you have to go out and say OK, now we are going to look for contractors who can do it. Now we are not going to look for contractors who are the lowest bidders, no. We are going to call it a bid document and say OK, this is what the potential contractors have to have before they can qualify. Now having done that it means that you have to pay a little bit more. That's the consequence. But once you have done that then you have a criteria, you have certain qualifications that you are requesting from the potential contractors, a certain internal quality control structure, all those things have to be done. Once you have set that whole thing in motion then you are never certain that you'll get a good job but at least as a yard you have done everything possible to succeed in creating a nice paint quality. But again, if you have just as a yard said OK who can do the job and who is the cheapest and you do it, without any other qualification, without any requirements of who's going to do the job and who's the foreman, what are the qualifications of the people etc—if you don't do that, then you're lost. You may be lost but you can't impose new qualification during the job. Because they can't do it.

### **Petro**

Yes, but you maybe forgot that I don't know how many shipyards in the world have one really special paint manager—so maybe Rory is one of them but not a lot of shipyards have someone like Rory inside.

### **Joop**

May I immediately answer here? If you look at a yacht —any yacht, but let's say 50—70—100 metres, 150 metres, just three aspects that are terribly important — that's the design, the form, that's a given fact. The second thing is the interior and everybody is very busy with the interior. The number 3 thing is the exterior paint, because everybody looks at the paint, and everybody is comparing —captains and owners are always comparing paint. It's a major issue. It's a major part of a new build budget yet how do many yards go about the paintwork? They don't have a paint manager, they have somebody who is looking after the paint but that guy is often not high enough in the organisation—he's doing it as a sideline and then are we complaining later that the job is not done right? Well, the start was not right. Paint is so important, whether you like it or not, budget wise and appearance wise, that it should deserve more attention in the yard right from the start. Some yards have a

paint manager but there are also yards—sizeable yards— that still do not have a paint manager. Now what is a paint manager supposed to do? He is not only controlling but he's also checking, he's controlling the budget, it's a massive task and we see in some of the yards right now in Europe where they have good paint management available, we see better results. Less problems, less costly warranty situations. You can see the result. But it is not a thing that is going overnight. It takes time and it also takes the intention of the top management.

**Martin**

But employed by the yard? Exclusively.

**Joop**

Yes.

**Martin**

Rory? Comment?

**Rory**

Thanks very much for the compliment, it's very nice. The first point you made there was about the team. Where applicators aren't inhouse, in my experience, it's best to work with a contractor that you can build a long term relationship with. You get to know their weaknesses, their strengths, they also get to know the production team within the shipyard and then they also know what's likely to be the possible defects and so you get a good long term relationship. They will also therefore provide you with a greater assurance of a good result and you're less likely to have these weaker players, weaker team members in the team. You then went on to mention the quality control, the burning thing, well I think that's quite common, I don't want to create a disturbance—but I think it's quite common within the industry that during production there are areas completed and then rework has to occur and then damages occur and we all know that that happens. We—I try to work with the production department at ISA— to reduce that possibility, we put protection in where it's possible but it's a difficult thing to avoid because you have, by the nature of the beast, continued construction issues, changes during the project, so it's a thing that needs to be worked on. The shipyard has the advantage if they have my sort of figure within the shipyard to control — outside of the applicator—he's not just blowing his own trumpet—he's actually got a person who's within the management structure of the shipyard to help with that organisation, it does help and makes a little bit of difference.

**Petro**

Yes, but I think that your experience on the ISA yacht is a good experience for everybody—I think also for Joop, during an inspection on the ship we have found a little bit different from the other ships that are sold—the difference to have a man that understands something about paint in the shipyard that talks with the production and saves a lot of mistakes during the paint application.

**Joop**

But at the right level, with the right authority. That's very important.

**Petro**

I believe also that it's very important.

**Martin**

Will that make you redundant?

**Joop**

Oh no no!!

**Martin**

I think we'll end it there, thank you very much everyone. Our panel—thank you. It seems that with the SED directive with the new high solids coatings and a lack of applicators it's all downhill from now! All I can say is, drinks are now served, we have a band, we have live football, from Holland, the UK, England I should say, not UK. I wish it was UK sometimes. Tomorrow morning breakfast again, class debate in the morning should be very entertaining—industry versus class.

Thank you very much.

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