

SOUTHERN WIND SHIPYARD CARPENTRY: YACHTING TECHNOLOGY'S CINDERELLA

There has always been an undeniably strong set myth in yachting which is difficult to dislodge: that of craftsmanship. In many owners' minds there's a firm conviction that their yachts' hulls are built with avant-garde technology (like vacuum bagged infused laminates, with highly efficient composites which are light and very tough) to which handmade high level craftsmanship is applied involving carpentry, joinery, boiserie, and so on to indicate through this terminology a synonym for "high quality level". As if, once the exceptional 30 metre hull has been completed the yard hands it over to the "Master Carpenter" who sets out to work with a hand saw, a set of straight edges, a parallel ruler, a hammer a box full of nails, glue and sand paper. This is equivalent to saying that a blacksmith producing wrought iron works could build a Ferrari. Well nautical carpentry as much as every other productive centre has greatly felt the impact of the progress made through technology which has at times obtained remarkable results, and some others in which the obtained results were unsatisfactory and therefore led to quick backtracking exercises. To better understand how the process of building interiors has evolved we called upon several ship yard's technicians whose high level of all round craftsmanship has always been widely appreciated and which has been a fundamental company policy.

by Stefano Ruia

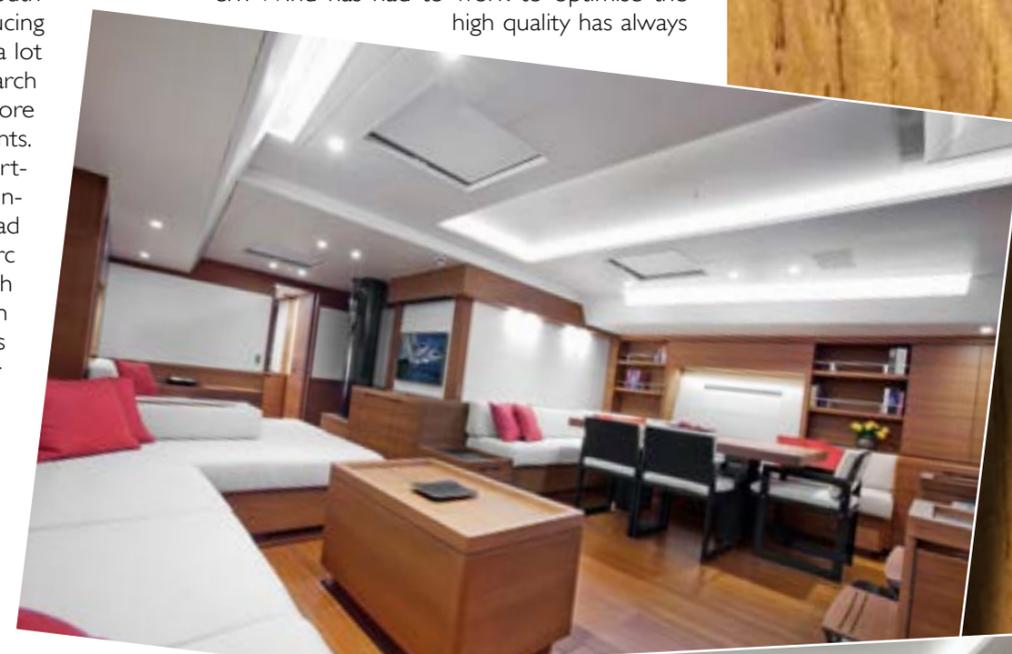
The most advanced technology is exploited at its highest levels in the construction of superyachts due to the tailor made custom or semi custom build of these yachts, and the growing numbers of base models to suit lower budgets however remain well away from those pertaining to industrially produced models. However while technological progress is widely known as far as hull construction is concerned, but only few words have been spent on interior applied technology and much concerning carpentry mainly has till now been largely disregarded by end users, yacht owners, and media.

For this purpose we chose Southern Wind in South Africa which has been distinguishing itself for the quality of the yachts it has been producing and successfully conjugating light displacement to maximum sturdiness. One should be reminded that each Southern Wind model is delivered only after lengthy testing and fine tuning on the ocean with as many as 7,500 miles under its hull when delivered to Europe! Obviously one can't over rate light displacement as one would for racing thoroughbreds, and then perhaps incur in some pieces becoming unstuck below decks during ocean hauls with much consequent disappointment and frustration. And then again every yacht leaving the Cape Town shipyard will surely encounter capricious ocean waters but every yacht has been conceived as a deep sea or blue water sailing yacht. Some of them are deployed as charter vessels thereby regularly crossing the Atlantic twice yearly to work in the Caribbean during the winter season and the Mediterranean in summer. So in a sense Southern Wind has had to work to optimise the high quality has always

been a prerogative while a lot has been invested in research and development to explore all potential improvements. The yard's carpentry department today employs 62 including painters. The head of this department is Marc Huntley who's been with the yard since its inception while Simon French has headed project work for more than ten years like Daniele De Donno Quality Control manager.

The team's work is not an easy one as much careful planning is required to satisfy different client requirements. Taking firstly semi custom production as a case in point, means and involves listening to, and seconding whenever possible feasible client requests. This implies full use of 3D software to better understand how to adapt the yachts to clients' specifications right from project phase which calls for Nauta Design's team full collaboration to which must be added fabrics and other materials specially chosen by the owners with which to personalise the interiors and be harmoniously integrated with the essentials dictated by a blue water sailing superyacht: where functional, practical, easy to use solutions are highly desirable, where edges are rounded smooth, where ample passage ways have their importance, and where every space is optimised to facilitate easy access to plants and gear all of which is inside a durable build which has been optimised in terms of maintenance and repair work. All this input requires a lot of processing through 3D modelling but it is proportional to the result. This data gathering phase is where the more data is available the better are the results. A staff member from the Customer Care department is allocated to each yacht produced and is often on board to observe, to look for possible improvements and to draw up a list of additional details.

A good working relationship with the owner and mainly with the crew, as well as with the captain (since he often spends 8 to 10 months at the yard during construction of the yacht



Southern Wind Shipyard

carpentry: yachting
technology's Cinderella

he'll be commanding) is desirable.

Current evolutionary trends systematically point at weight reduction but never for its own sake as it is always subjected to the yacht designation which is blue water cruising. Only in more recent years has the displacement of ocean going yachts been seriously considered but with more and more attention being paid to laminates and their derivatives weight saving in interior decors has also become a major issue for R&D.

Albeit this research work must be a sensible one. For example it would be useless to come up with twenty sandwich foam core built fronts for as many drawers if the weight saved represents a mere 10% of the chest of drawers. Even if one were to reduce 50% of the weight of each front piece of each drawer, the total weight saved in relationship to the chest of drawers would be of only 5%. It would be an entirely different kettle of fish if one could do without 50% of the chest of drawers' total weight!

The weight of the ship's hardware needs to be taken into consideration as well. Thanks to all the data gathered earlier Southern Wind can assess the weight of a yacht directly from the project phase with an accuracy of 200 kg on 60 tons. A complex work on the interiors follows and as Mark Bament from Customer Care puts it "We don't buy wood we build it". As per standard procedure each interior area is built on the ground completely following on board assembly and installation which means that each component can be easily disassembled any time for repainting or whatever reason. Mock up models on a 1:1 scale are sometimes made when necessary during

project design so as to highlight any possible difficulty that may arise due to mistakes or due to interference with other installations or more simply to obtain the owner's approval for the adopted solution as dictated by his requests. To check for any possible interference with other equipment is doubly useful and not only in terms of size but also in practical terms because the positioning of something which sooner or later will require maintenance and could become accessible only after having taken half of a cabin apart. The furniture is always built on the ground after the project work has been finalised and everything is where it should be. A further control is carried out prior to painting. Delving into further interesting details, Southern Wind abandoned traditional use of solid wood, marine ply in 2001. In fact according to the yard's management sticking to traditional ways means that state of the art development remained far behind when compared to what



happens in the industrial world so Southern Wind started to make a change by introducing new technology and has been experimenting with novelties and upgrades thereby obtaining the necessary know how to obtain positive results. To make an example a sandwich built panel behaves very differently to a marine plywood one, it can't just be substituted since the sandwich panel needs to be closed off along each side and needs to be re-enforced where screws are to be driven etc. Once this sort of know how was well understood back in 2001 Southern Wind switched from exploiting sandwich foam core to sandwich with honeycomb in paper obtaining considerable weight reduction. Then in 2009/2010 the sandwich core became a Nomex honeycomb thereby reducing thickness and saving more weight for the same results. This concept was applied to furniture doors, shutters, drawers so in 2010 the yard switched from a door the central part of which was in sandwich with a wood frame around it, which was light, but not so much to an all sandwich one bearing wood re-enforcements only where needed. This construction method is only applicable when the cabin is pre built on the ground off the yacht before the furniture is lined and painted, which is why the yard decided to incorporate final lining into the in house construction department as well. The adoption of new fabrics or products has not always proved to be 100% positive. For example Southern Wind had been using Velcro™ to secure ceiling panels, then changed to synthetic clips but discovered that clip supports would tear off from the ceiling panels as they were very thin in order to be light weight. This inconvenience was happily resolved by deploying clips and Velcro™ together. Other elements which evolved a lot were bands around the edges. The initial ones were highly classic in solid teak wood, or laminates, they were also very high with 50 to 100 mm radii of curvature. Their design has changed considerably since 2004 taking on a more modern minimalist appeal with a resulting radius curvature of less than 20 mm and sport a better uniform colouring insofar as teak solid wood has a different colour than teak lining. In 2008 the bands around the edges became teak lined for total uniformity of colour and make for easy replacements since only the teak lining needs to be stripped off while corner posts remained in solid wood. In 2010 bands around the edges underwent further changes and teak skins were applied to less valuable 5mm thick sandwich foam. Areas were differentiated according to the function they fulfilled. For example crew quarters need to be above all functional and robust. The design of the furniture should be less audacious while even the colour schemes and paint should feature practicality: if for instance an owner selected an eggshell paint, the yard would recommend a gloss finish instead for the crew's quarters which unlike the first choice does not withhold dirt. Unfortunately conflicting solutions for efficient soundproofing with weight saving means, still remain in the sense that sandwich foam core and Nomex well transmit sound waves. So high density sound absorbing strata and rockwool layers are called for. A further important aspect in this sense is the reduction of vibration which is cause for added noise. To this effect Southern Wind has adopted cabin soles and flooring in sandwich honeycomb aluminium core and carbon and every furniture piece is mounted onto a 50x50 mm aluminium grid with an isolating rubber layer under it and glued to the hull in perfect alignment. Originally this strata was 2mm thick and proved to be insufficient and allowed for only small corrections in terms of verticality. The isolating rubber layer was subsequently increased to 10 mm but the extra weight seemed excessive and today the yard considers 5 mm thick layers as being the ideal compromise. As of 2010 handmade carbon fibre floor support brackets can substitute the otherwise heavier ones – the weight saved on a 94' sailing superyacht is 250 kg but since the supports are handmade they

happens in the industrial world so Southern Wind started to make a change by introducing new technology and has been experimenting with novelties and upgrades thereby obtaining the necessary know how to obtain positive results. To make an example a sandwich built panel behaves very differently to a marine plywood one, it can't just be substituted since the sandwich panel needs to be closed off along each side and needs to be re-enforced where screws are to be driven etc. Once this sort of know how was well understood back in 2001 Southern Wind switched from exploiting sandwich foam core to sandwich with honeycomb in paper obtaining considerable weight reduction. Then in 2009/2010 the sandwich core became a Nomex honeycomb thereby reducing thickness and saving more weight for the same results. This concept was applied to furniture doors, shutters, drawers so in 2010 the yard switched from a door the central part of which was in sandwich with a wood frame around it, which was light, but not so much to an all sandwich one bearing wood re-enforcements only where needed. This construction method is only applicable when the cabin is pre built on the ground off the yacht before the furniture is lined and painted, which is why the yard decided to incorporate final lining into the in house construction department as well. The adoption of new fabrics or products has not always proved to be 100% positive. For example Southern Wind had been using Velcro™ to secure ceiling panels, then changed to synthetic clips but discovered that clip supports would tear off from the ceiling panels as they were very thin in order to be light weight. This inconvenience was happily resolved by deploying clips and Velcro™ together. Other elements which evolved a lot were bands around the edges. The initial ones were highly classic in solid teak wood, or laminates, they were also very high with 50 to 100 mm radii of curvature. Their design has changed considerably since 2004 taking on a more modern minimalist appeal with a resulting radius curvature of less than 20 mm and sport a better uniform colouring insofar as teak solid wood has a different colour than teak lining. In 2008 the bands around the edges became teak lined for total uniformity of colour and make for easy replacements since only the teak lining needs to be stripped off while corner posts remained in solid wood. In 2010 bands around the edges underwent further changes and teak skins were applied to less valuable 5mm thick sandwich foam. Areas were differentiated according to the function they fulfilled. For example crew quarters need to be above all functional and robust. The design of the furniture should be less audacious while even the colour schemes and paint should feature practicality: if for instance an owner selected an eggshell paint, the yard would recommend a gloss finish instead for the crew's quarters which unlike the first choice does not withhold dirt. Unfortunately conflicting solutions for efficient soundproofing with weight saving means, still remain in the sense that sandwich foam core and Nomex well transmit sound waves. So high density sound absorbing strata and rockwool layers are called for. A further important aspect in this sense is the reduction of vibration which is cause for added noise. To this effect Southern Wind has adopted cabin soles and flooring in sandwich honeycomb aluminium core and carbon and every furniture piece is mounted onto a 50x50 mm aluminium grid with an isolating rubber layer under it and glued to the hull in perfect alignment. Originally this strata was 2mm thick and proved to be insufficient and allowed for only small corrections in terms of verticality. The isolating rubber layer was subsequently increased to 10 mm but the extra weight seemed excessive and today the yard considers 5 mm thick layers as being the ideal compromise. As of 2010 handmade carbon fibre floor support brackets can substitute the otherwise heavier ones – the weight saved on a 94' sailing superyacht is 250 kg but since the supports are handmade they

happens in the industrial world so Southern Wind started to make a change by introducing new technology and has been experimenting with novelties and upgrades thereby obtaining the necessary know how to obtain positive results. To make an example a sandwich built panel behaves very differently to a marine plywood one, it can't just be substituted since the sandwich panel needs to be closed off along each side and needs to be re-enforced where screws are to be driven etc. Once this sort of know how was well understood back in 2001 Southern Wind switched from exploiting sandwich foam core to sandwich with honeycomb in paper obtaining considerable weight reduction. Then in 2009/2010 the sandwich core became a Nomex honeycomb thereby reducing thickness and saving more weight for the same results. This concept was applied to furniture doors, shutters, drawers so in 2010 the yard switched from a door the central part of which was in sandwich with a wood frame around it, which was light, but not so much to an all sandwich one bearing wood re-enforcements only where needed. This construction method is only applicable when the cabin is pre built on the ground off the yacht before the furniture is lined and painted, which is why the yard decided to incorporate final lining into the in house construction department as well. The adoption of new fabrics or products has not always proved to be 100% positive. For example Southern Wind had been using Velcro™ to secure ceiling panels, then changed to synthetic clips but discovered that clip supports would tear off from the ceiling panels as they were very thin in order to be light weight. This inconvenience was happily resolved by deploying clips and Velcro™ together. Other elements which evolved a lot were bands around the edges. The initial ones were highly classic in solid teak wood, or laminates, they were also very high with 50 to 100 mm radii of curvature. Their design has changed considerably since 2004 taking on a more modern minimalist appeal with a resulting radius curvature of less than 20 mm and sport a better uniform colouring insofar as teak solid wood has a different colour than teak lining. In 2008 the bands around the edges became teak lined for total uniformity of colour and make for easy replacements since only the teak lining needs to be stripped off while corner posts remained in solid wood. In 2010 bands around the edges underwent further changes and teak skins were applied to less valuable 5mm thick sandwich foam. Areas were differentiated according to the function they fulfilled. For example crew quarters need to be above all functional and robust. The design of the furniture should be less audacious while even the colour schemes and paint should feature practicality: if for instance an owner selected an eggshell paint, the yard would recommend a gloss finish instead for the crew's quarters which unlike the first choice does not withhold dirt. Unfortunately conflicting solutions for efficient soundproofing with weight saving means, still remain in the sense that sandwich foam core and Nomex well transmit sound waves. So high density sound absorbing strata and rockwool layers are called for. A further important aspect in this sense is the reduction of vibration which is cause for added noise. To this effect Southern Wind has adopted cabin soles and flooring in sandwich honeycomb aluminium core and carbon and every furniture piece is mounted onto a 50x50 mm aluminium grid with an isolating rubber layer under it and glued to the hull in perfect alignment. Originally this strata was 2mm thick and proved to be insufficient and allowed for only small corrections in terms of verticality. The isolating rubber layer was subsequently increased to 10 mm but the extra weight seemed excessive and today the yard considers 5 mm thick layers as being the ideal compromise. As of 2010 handmade carbon fibre floor support brackets can substitute the otherwise heavier ones – the weight saved on a 94' sailing superyacht is 250 kg but since the supports are handmade they

happens in the industrial world so Southern Wind started to make a change by introducing new technology and has been experimenting with novelties and upgrades thereby obtaining the necessary know how to obtain positive results. To make an example a sandwich built panel behaves very differently to a marine plywood one, it can't just be substituted since the sandwich panel needs to be closed off along each side and needs to be re-enforced where screws are to be driven etc. Once this sort of know how was well understood back in 2001 Southern Wind switched from exploiting sandwich foam core to sandwich with honeycomb in paper obtaining considerable weight reduction. Then in 2009/2010 the sandwich core became a Nomex honeycomb thereby reducing thickness and saving more weight for the same results. This concept was applied to furniture doors, shutters, drawers so in 2010 the yard switched from a door the central part of which was in sandwich with a wood frame around it, which was light, but not so much to an all sandwich one bearing wood re-enforcements only where needed. This construction method is only applicable when the cabin is pre built on the ground off the yacht before the furniture is lined and painted, which is why the yard decided to incorporate final lining into the in house construction department as well. The adoption of new fabrics or products has not always proved to be 100% positive. For example Southern Wind had been using Velcro™ to secure ceiling panels, then changed to synthetic clips but discovered that clip supports would tear off from the ceiling panels as they were very thin in order to be light weight. This inconvenience was happily resolved by deploying clips and Velcro™ together. Other elements which evolved a lot were bands around the edges. The initial ones were highly classic in solid teak wood, or laminates, they were also very high with 50 to 100 mm radii of curvature. Their design has changed considerably since 2004 taking on a more modern minimalist appeal with a resulting radius curvature of less than 20 mm and sport a better uniform colouring insofar as teak solid wood has a different colour than teak lining. In 2008 the bands around the edges became teak lined for total uniformity of colour and make for easy replacements since only the teak lining needs to be stripped off while corner posts remained in solid wood. In 2010 bands around the edges underwent further changes and teak skins were applied to less valuable 5mm thick sandwich foam. Areas were differentiated according to the function they fulfilled. For example crew quarters need to be above all functional and robust. The design of the furniture should be less audacious while even the colour schemes and paint should feature practicality: if for instance an owner selected an eggshell paint, the yard would recommend a gloss finish instead for the crew's quarters which unlike the first choice does not withhold dirt. Unfortunately conflicting solutions for efficient soundproofing with weight saving means, still remain in the sense that sandwich foam core and Nomex well transmit sound waves. So high density sound absorbing strata and rockwool layers are called for. A further important aspect in this sense is the reduction of vibration which is cause for added noise. To this effect Southern Wind has adopted cabin soles and flooring in sandwich honeycomb aluminium core and carbon and every furniture piece is mounted onto a 50x50 mm aluminium grid with an isolating rubber layer under it and glued to the hull in perfect alignment. Originally this strata was 2mm thick and proved to be insufficient and allowed for only small corrections in terms of verticality. The isolating rubber layer was subsequently increased to 10 mm but the extra weight seemed excessive and today the yard considers 5 mm thick layers as being the ideal compromise. As of 2010 handmade carbon fibre floor support brackets can substitute the otherwise heavier ones – the weight saved on a 94' sailing superyacht is 250 kg but since the supports are handmade they

happens in the industrial world so Southern Wind started to make a change by introducing new technology and has been experimenting with novelties and upgrades thereby obtaining the necessary know how to obtain positive results. To make an example a sandwich built panel behaves very differently to a marine plywood one, it can't just be substituted since the sandwich panel needs to be closed off along each side and needs to be re-enforced where screws are to be driven etc. Once this sort of know how was well understood back in 2001 Southern Wind switched from exploiting sandwich foam core to sandwich with honeycomb in paper obtaining considerable weight reduction. Then in 2009/2010 the sandwich core became a Nomex honeycomb thereby reducing thickness and saving more weight for the same results. This concept was applied to furniture doors, shutters, drawers so in 2010 the yard switched from a door the central part of which was in sandwich with a wood frame around it, which was light, but not so much to an all sandwich one bearing wood re-enforcements only where needed. This construction method is only applicable when the cabin is pre built on the ground off the yacht before the furniture is lined and painted, which is why the yard decided to incorporate final lining into the in house construction department as well. The adoption of new fabrics or products has not always proved to be 100% positive. For example Southern Wind had been using Velcro™ to secure ceiling panels, then changed to synthetic clips but discovered that clip supports would tear off from the ceiling panels as they were very thin in order to be light weight. This inconvenience was happily resolved by deploying clips and Velcro™ together. Other elements which evolved a lot were bands around the edges. The initial ones were highly classic in solid teak wood, or laminates, they were also very high with 50 to 100 mm radii of curvature. Their design has changed considerably since 2004 taking on a more modern minimalist appeal with a resulting radius curvature of less than 20 mm and sport a better uniform colouring insofar as teak solid wood has a different colour than teak lining. In 2008 the bands around the edges became teak lined for total uniformity of colour and make for easy replacements since only the teak lining needs to be stripped off while corner posts remained in solid wood. In 2010 bands around the edges underwent further changes and teak skins were applied to less valuable 5mm thick sandwich foam. Areas were differentiated according to the function they fulfilled. For example crew quarters need to be above all functional and robust. The design of the furniture should be less audacious while even the colour schemes and paint should feature practicality: if for instance an owner selected an eggshell paint, the yard would recommend a gloss finish instead for the crew's quarters which unlike the first choice does not withhold dirt. Unfortunately conflicting solutions for efficient soundproofing with weight saving means, still remain in the sense that sandwich foam core and Nomex well transmit sound waves. So high density sound absorbing strata and rockwool layers are called for. A further important aspect in this sense is the reduction of vibration which is cause for added noise. To this effect Southern Wind has adopted cabin soles and flooring in sandwich honeycomb aluminium core and carbon and every furniture piece is mounted onto a 50x50 mm aluminium grid with an isolating rubber layer under it and glued to the hull in perfect alignment. Originally this strata was 2mm thick and proved to be insufficient and allowed for only small corrections in terms of verticality. The isolating rubber layer was subsequently increased to 10 mm but the extra weight seemed excessive and today the yard considers 5 mm thick layers as being the ideal compromise. As of 2010 handmade carbon fibre floor support brackets can substitute the otherwise heavier ones – the weight saved on a 94' sailing superyacht is 250 kg but since the supports are handmade they



Southern Wind Shipyard

carpentry: yachting
technology's Cinderella

cost more to build and install than the aluminium ones. Probably the ideal compromise even if heavier is riveted aluminium. A similar situation was encountered when cutting panels in sandwich honeycomb core. At a given point in time somebody thought that laser cutting directly from 3D computerised models would have been a winning proposition but they immediately realised that wasn't the case as sandwich honeycomb core panels were cut below standard and the yard reverted to traditional cutting methods.

Today lasers are deployed in cutting ceiling panels and some of the furniture's internal panels and locker lids. Laser beams seem ideal in cutting out air vents into beds for enhanced ventilation. The need to be in line with different norms and rules which are all the more tighter for MCA classification also in terms of weight, which means they have to be studied carefully rather like solicitors do. In a nutshell behind a carpenter's workshop for superyachts like Southern Wind there's a lot more going on than a single "Master Craftsman" there are technicians, engineers, computer programmers, Customer care, specialised carpenters, cabinetmakers, painters, an exceptional team which transforms yachting technology's Cinderella into the Prince's favourite dancing partner...for a dance during which the clock will never ever strike midnight again!

For further information: Southern Wind Shipyard; Reen Avenue – Athlone Industry 1; 7780 Cape Town – South Africa; Tel. (+27) (0)21 6378043; Fax (+27) (0)21 6378016; web: www.southernwindshipyard.com e mail: info@sws-yachts.com

HOW
A CABIN
IS BORN

