

Full steam ahead

Ships have been built in the Hanseatic city of Greifswald since 1361. In the early days, solid and reliable hanseatic cogs were built, reflecting the enormous respect in which the Greifswald shipbuilders held the mighty and dangerous power of the sea. Through centuries of political and economic upheaval, this admirable tradition still has a tangible role to play today, when ultra-modern yachts and ocean-going boats are produced on equally progressive production lines.

Following a rather leisurely period as a boatbuilding and repair shipyard in the days of the German Democratic Republic, the latest episode in the history of HanseYachts AG was launched in the summer of 1993 with a “big bang”: The HANSE 291, a boat for the unbelievable price of 44,444 Deutschmarks! An unbeatable bargain, giving rise to the stiff breeze of economic success which continues to blow around this remarkable shipyard.

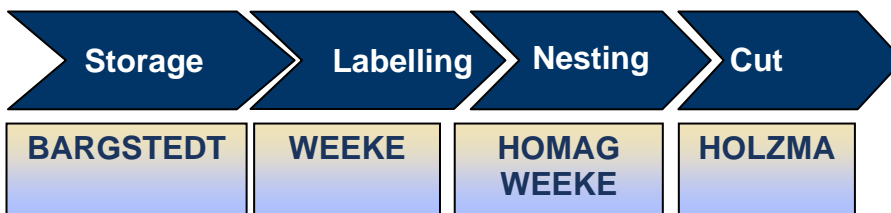
HanseYachts is Germany’s second biggest producer of pleasure craft and the third biggest series producer of sailing yachts in the world. The company also runs a marina. HanseYachts AG practices a consistent policy of developing its own in-house expertise based on research and development, which is one of the foundation stones of its success. The company’s own internal design department also produces exquisite interior designs which are quickly implemented in the form of prototypes and developed to the series stage following exhaustive testing. This allows several new models to be developed and implemented every year. Multiple “European Yacht of the Year” awards testify to the success of the concept.

To secure continued success for the future, Michael Schmidt, company Chairman and Development and Sales Director, has come up with another ground-breaking new concept. This latest innovation is not designed to be a price buster – HANSE Yachts are now firmly established in the luxury segment – but instead counts as something of a technological breakthrough: High-efficiency nesting processing cells for extremely flexible and efficient production of individual interior fittings to the highest possible standard of quality.

This constitutes just as much of a “big bang” according to Production Director Nils Leinker, wood engineering graduate in charge of furniture manufacture, and one which is set to drive the shipbuilding company full steam ahead.

Cell production with batch size 1

Using a decision matrix, the market was sounded out for viable production technologies which would effectively implement the fundamental requirement of increasing productivity and capacity levels, reducing throughput times and cutting down on material costs. The final selection whittled the choice down to just two suppliers. Further scrutiny resulted in a final decision in favour of the HOMAG Group solution as the soundest concept, encompassing all the components required for efficient cell production engineering including storage and nesting technology, all in a highly impressive format featuring a common, networked material flow.



Production sequence

The concept entailed storage and handling, panel dividing, and individual component processing (**Fig. 1**). Despite the involvement of several different manufacturers, the integral control logic and cross-functional software packages used practically eliminated any unknown interfaces. Even the already installed HOLZMA pressure beam saw (**Fig. 2**) was successfully integrated as a “bypass machine” into the area storage system, from where it is operated.

The material processed is waterproof glued marine plywood. The panels are exclusively veneered using mahogany and cherrywood veneers with a pattern structure. These are taken into consideration when cutting the fronts. In addition, the production hall is kept at a constant 50% relative humidity level using a humidifier to protect the often sensitive woods.

The nerve centre of the production cell is the area storage system produced by BARGSTEDT, which assumes the production control “master function”. From here, the production jobs are organized, as are the resulting panel requirements for the HOLZMA panel dividing saw, the HOMAG BOF processing centre (**Fig. 3**), the WEEKE BHP processing centre (**Fig. 4**) and the WEEKE labelling unit (**Fig. 5**). Production orders can be exchanged on a “flying” basis between the two BAZ units, guaranteeing maximum production cell process reliability and flexibility. HanseYachts collates several different ship interior fittings commissions together to form a joint production order. The optimization run is initiated from this production pool in the production engineering department, and once complete is transferred online to the production department. This affords the production foreman maximum decision-making freedom in answering questions such as: “When do I kick off the production orders?” and “Which plant are they produced on?”.

The reason for this is the enormous variance which exists between the boats. On the basis of a modular design concept for individual configuration, starting from the hull, each client gets to choose the underlying structure and configuration as well as the interior fittings of his boat. Only when the order has been given the go-ahead by Sales is it integrated into the production schedule.

Based on the pool of existing orders, a production week is planned according to defined rules and using a defined production matrix. All the upstream departments produce their part of the value added chain and deliver precisely timed to order to the relevant assembly conveyors (client – supplier relationship). The optimization phase for the nesting process takes place using a similarly automatic process (processing programs “CutRite” and “WoodNest”).

The large-format gantry suction beam which stretches across both processing centres picks up the nested parts and places them on the sorting belt. The produced trimmed parts are manually assigned to their respective orders on the basis of the applied labels and placed in the provided furniture carriages. From here, the parts are forwarded to the next processing stages, such as edge processing and/or lacquering.

Enhanced production and flexibilization

HanseYachts AG considers the nesting processing technology it employs to be unquestionably the most modern production process used in any European shipyard. By slashing response times, it allows the company to offer delivery periods for completed boats of between three and six weeks despite an ever expanding choice of different variants. At the same time, the shorter throughput times have meant greater flexibility. As the new production technology has reduced manual handling to practically zero for standard panels, the forecast further increase in growth will also remain

manageable for the producer. The system has also permitted two newly acquired boat brands – the traditional brands “Moody” (UK) and “Fjord” (Norway”) – to be simply integrated into the production process despite their widely differing design features.

Nils Leinker sums up the benefits of the production line: “For our company, the new nesting processing centres mean that we can produce full steam ahead, and in more ways than one”. He is referring here to aspects such as material management with simple, precise order scheduling due to the improved transparency of inventories. The minimized material movements mean a reduction in both time taken and also incidences of damage. There is also no longer any need to hoard “emergency stocks” as in former times, meaning less capital tie-up. The reduced physical strain on employees is also a clearly evident side benefit of the new system.

The budding shipbuilders and joiners among the group of currently twenty trainees working in the company proudly explain the unusual production facilities they are being trained on – an optimum foundation for their future.

The company

HanseYachts AG

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Founded	1991 after takeover of the former GDR Boatbuilding and Repair Shipyard by today's Chairman and Majority Shareholder Michael Schmidt 1993 restructuring of the company for the production of sailing and motor yachts
General Management	▪ Michael Schmidt, Chairman, CEO, Marketing, Sales, Purchasing, Development Director ▪ Udo Potthast, Finance Director ▪ Gregor Bredenbeck, Production Director
Plants	in Greifswald (boatbuilding, shipyard) in Goleniów, Poland (ships' hulls)
Production Manager	Graduate wood engineer Nils Leinker
Products	Sailing – motor yachts Brands 'Hanse', 'Moody' and 'Fjord'
Workforce	around 500
Company size	
Greifswald plant	Site: 162,000 sq.m. Production area: 19,000 sq.m.
Turnover	135 mill. Euro (Group) in 2007/2008 Export share: 85 %
Sales	Through an international dealership network
Quality mark	Classification in accordance with Germanischer Lloyd
Investment	Appr. 30 million € during the financial year 2007/2008 in the overall company infrastructure



Fig. 1:
Overview of cell production



Fig. 2:
Existing HOLZMA pressure beam saw integrated into the area storage system



Fig. 3:
Cell 1 HOMAG processing centre with direct loading from the panel store



Fig. 4:
Cell 2 WEEKE processing centre for automatic and manual infeed



Fig. 5:
Labelling of large-format panel prior to nesting



Fig. 6:
Hanse 630 yacht



Fig. 7:
HanseYachts AG company site

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