

HANSA

30th



SMM

09 | 2022

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Monaco Yacht Show

Das »Who is Who« der Yacht-Branche gibt sich an der Côte d'Azur die Ehre

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PortPIC-Konferenz in Hamburg

Regulierung, Projekte, Produkte: In-water-cleaning in Häfen gewinnt stetig an Bedeutung



SMM HAMBURG
HALLE B4 | Stand 212



SWATH@A&R: Es gibt kein schlechtes Wetter!

Krischan Förster
Chief Editor



Getting out of limbo

This year's SMM is coming with plenty of tailwinds. Amid geopolitical tensions with the war in the Ukraine still going on, the lasting COVID19 pandemic with recent lockdowns in China, and severe disruptions seen all over the world in ports and supply chains, the maritime industry still experiences mostly bullish markets.

All liners posted record earnings, the container shipping's orderbook reached one third of the existing fleet. This creates an urgent need of all kinds of equipment and a surge in orders for suppliers. Well, that is good news after a long period of drought, starting more than a dozen years ago after the Lehman collapse and then lasting for so long.

At the same time, tremendous challenges sweep onto the whole industry, starting with the implementation of EEDI, EEXI and CII and ending with more than ambitious regulations set by the IMO to get shipping on a speed lane towards decarbonization. Again, a lot of uncertainties are flying around – which technologies are best to be applied, which fuels will be available in due time, what kind of action must be adopted by the companies themselves?

Fortunately, another drought is about to end in a few days: The SMM as the world's leading maritime trade fair will make its comeback after a four years' forced break – not counting the less successful attempt last year to bridge the time with a digital light version.

There is still no alternative to a real trade show: People need to and want to meet and greet, to share insights, to refresh relationship or to establish new business contacts and to lay the ground for good business in the future. All of us did our best to cope with COVID limi-

tations. But without a doubt, living in a predominantly digital cosmos will always be the second best choice compared to the real world.

So when the doors of the exhibition halls open on 6 September, we can expect a rather agile and open-minded community hunting for new business opportunities. But all exhibitors and visitors must also be prepared for a new era into which the maritime industry is heading. While digitalisation remains a task for today and tomorrow, the decarbonisation of shipping will certainly be the main issue to focus on.

While political and regulatory pressure is increasing, shipping and suppliers remain in limbo despite many promising projects and futuristic ship designs. SMM has always been a marketplace where the most advanced products and applications are presented. Moreover, it is becoming increasingly important to harness swarm intelligence to discuss viable ideas and forge new paths of collaboration to successfully tackle the truly Herculean task of making shipping climate neutral.

This is where the SMM conferences come in, and we recommend you start right on Monday with this year's Maritime Future Summit, co-hosted by HANSA. Don't miss high-level experts discussing the latest digital trends and innovations!

By the way: We as HANSA will of course also be there, with our own stand, events and exclusive publications. Feel free to drop by – hall A1, booth 433.

We are looking forward to meeting you in person at **SMM Hamburg**



6-9 September

Stand number

Hall B4. EG Stand 107

Book a meeting by scanning QR code or visit

lr.org/smm



Rethink Shipbuilding

VAFT OPT is an innovative design approach to generate fuel savings of more than 5 % for newbuildings. The technology has been applied to optimize a container vessel (at SVA Vienna) and a bulk carrier (HSVA) for the purpose of validating the technology. Classes and flag states joined tests recently executed at HSVA as impartial witnesses for bulker tests

Maritime stakeholders face tough challenges in complying with future IMO regulations and natural demand coming from climate change and energy transformation. During this »most innovative SMM ever«, decarbonisation, fuel changes and fuel savings are amongst the hottest topics.

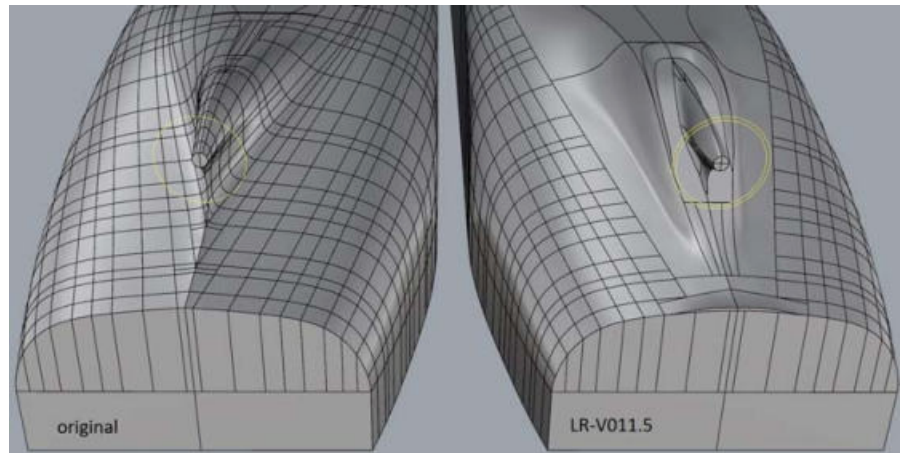
The traditionally very slowly adapting shipbuilding industry has to deal with challenges related to new designs from hull to engines. Stakeholders try to develop their know-how and improvements rather than utilising 3rd parties' technologies. Their main concerns are intellectual property rights and the cost of ship production, which seem to be more critical than the unutilised benefits for ship owners or charterers paying the bill.

While industry stakeholders focus a.o. on utilisation of different types of future fuels to comply with CII/EEDI-3 requirements, we, LR-Shipdesign AG, deliver previously unidentified solutions for ship hull design improvements with a unique patented hydromechanical and hydrodynamical innovation: AFT OPT.

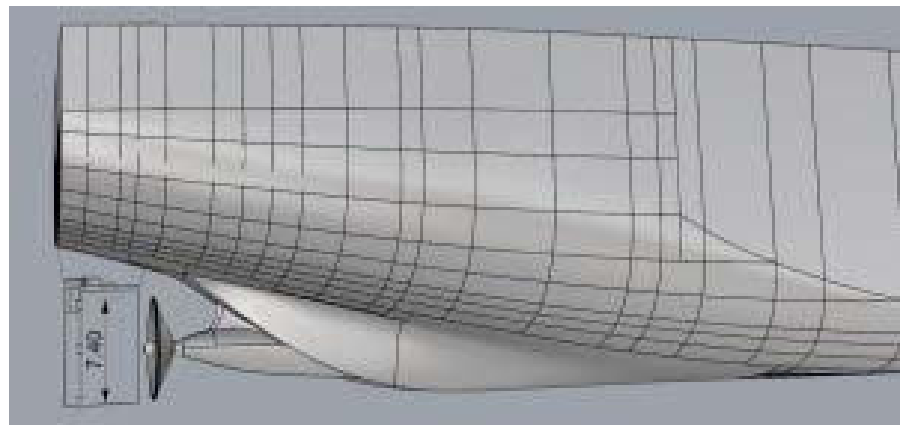
AFT OPT is nothing less than a unique detailed analysis of the flow of water cells underneath a ship's hull – from the bow to the rudder. The core of AFT OPT is a slightly modified area in the hull bottom aft section to accelerate the flow of water (»water jet«) in parallel to the main hull line. The effect: more water is delivered to the propeller disc with a better distribution to fill the whole disc area. Consequently, both a propeller and a twisted rudder, designed to deal with the vortex flow and increase propulsion, contribute to much more efficient energy utilisation.

All this can be implemented in ship newbuildings with minimal engineering effort compared to the shipbuilding cost.

Induced by the special AFT OPT form and input edges of the ship's bottom semi-circular form, the applied pressure is reduced, and the water flow is accelerated due to the indentation. The energy losses are reduced, and the flow pattern



An example of a bulk carrier tested at HSVA. Right hand side: AFT OPT modification of hull lines



long the edge lines (shoulder), stern, and trailing whirl are optimised.

This system essentially improves the water flow to the propeller and rudder. The propeller gains more pressure, especially in the 12.00 hrs position, and further savings are generated by an adaption of the transmission and/or propulsion.

Historically, the analysis of fuselage flow, the flow of air around the wings of aircrafts, led to the question at LR-Shipdesign, whether a specific new approach can be made to improve the flow of water underneath the keel.

AFT OPT today consists of its CFD and calculation tools. Results have been

validated at SVA Vienna (3,500 TEU container vessel) and HSVA for a Panamax bulk carrier. International partners delivered their latest designs as input information to LR-Shipdesign. The aim was to improve the vessels' efficiency without changing the cargo capacity. The engine manufacturer has approved minor modifications regarding the main engine room.

In both cases, the hull's resistance without attachments was improved by more than 3–4% in full scale (4–5% in model scale). The overall result for the bulk carrier reached a 9.7% improvement in full scale with propeller and rudder attached. These results were

Using the panamax bulk carrier as an example: The comparison of the flow of streamlines at the stern is shown (hydrostatic pressure is excluded); Original (above) vs AFT OPT (below)

achieved in June 2022 at HSVA; based on these tests, further slight improvements have been identified.

The competitive advantages of the Patented Lindinger Hull are:

- A Fuel reduction of more than 5%, up to 10% in regular operation
- No additional maintenance expenses during operation
- Enhanced efficiency of the propeller by reducing both – the thrust deduction fraction and slip
- Lower vibration and lower noise development due to the propulsion unit
- Functional for all semi-glider and displacement hulls

Conclusion

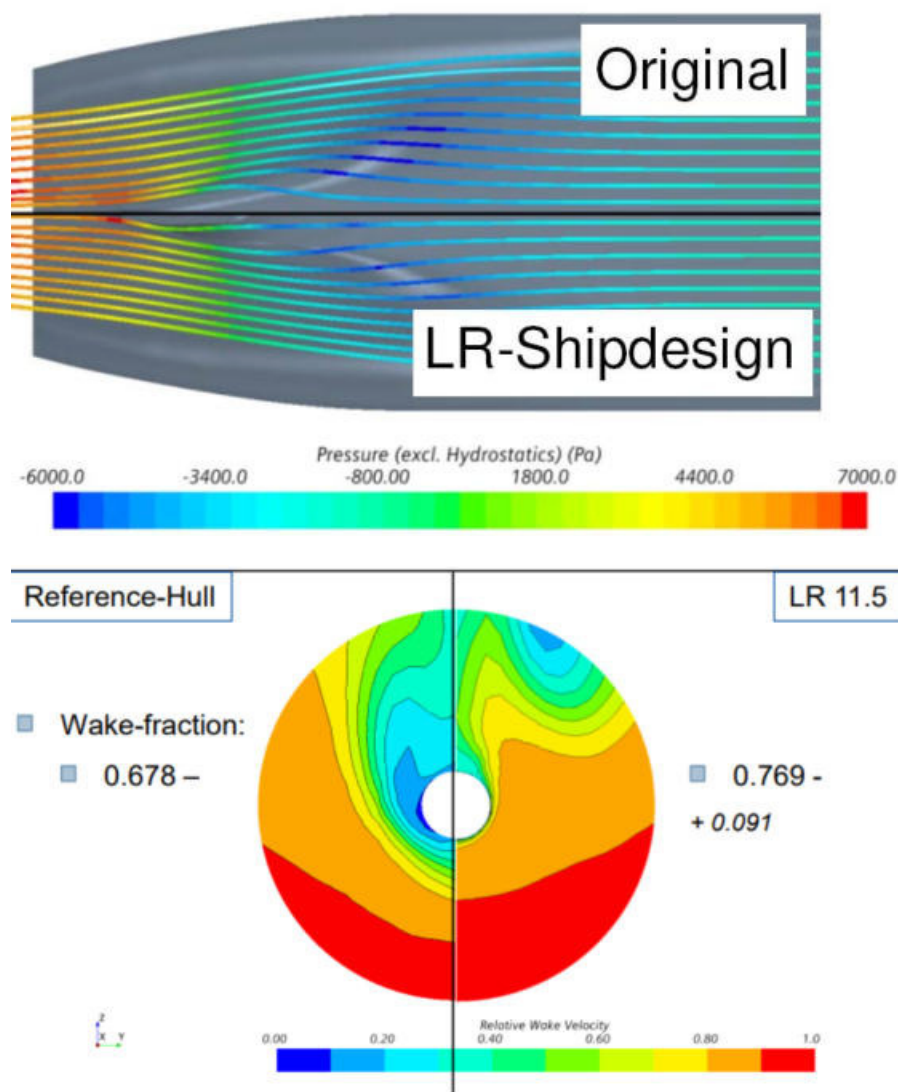
Ships are only sustainable future assets when combining all new requirements of builder and user. Shipowners should not be shy to use their purchasing power to combine more economical shipbuilding know-how with their ship's operational requirements. The cost for new merchant vessels is relatively low compared with the OPEX during a ship's lifetime.

Authors:

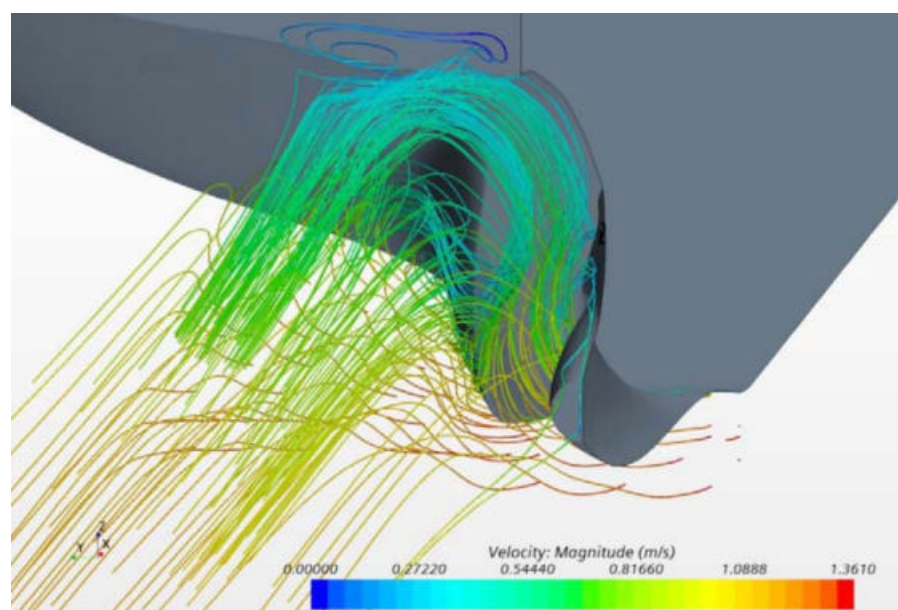
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In consequence, the propeller disc for the original hull on the left vs AFT OPT on the right: the better distribution of forces is recognisable already in the model scale. The full-scale vessel will have an even better-predicted wake flow in the propeller disc



The CFD simulation indicates the velocity streamlines with a slight vortex but without stall

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