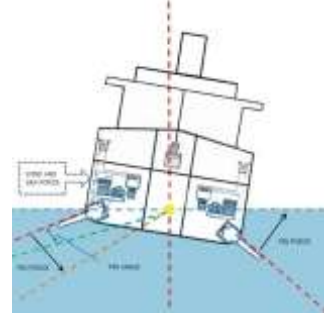


STABILIZING FINS REPAIR & RETROFITTING



PINFABB – GODBY AGREEMENT

Pinfabb SRL, worldwide stabilizing fins Leader Company, is proud to announce the successful installation of PINFABB ECO System on board the ship Miranda, owned by the Finnish Company Godby Shipping AB.

Godby Shipping is a privately owned shipping company established 1973. The aim of the company is to offer high class tailor made sea transportation for the forest industry and liner operators.

As a modern and future oriented company, the Finnish company operates a competitive and efficient fleet. At the beginning of 2015 Godby Shipping, with the aim to keep a good level of safety and to improve their fleet efficiency reducing the CO2 emissions, decided to upgrade the Stabilizing Fins System of m/s Miranda installing PINFABB ECO, replacing the existing Stabilizers control.

PINFABB ECO

Thanks to its experience, composed by more than 30 years of works and upgrades for any type of fins ever built, in 2014 Pinfabb SRL has designed and produced the 3rd version of its own Stabilizers Digital Control, renamed "PINFABB ECO".

Responding to the demanding shipping world of today, PINFABB ECO has been designed focusing on the ship efficiency and on CO2 emissions reduction, providing several benefits to its users:

- It can be installed on ANY type of stabilizers, no matter which is the plant or the age
- It demonstrated to provide high quality stabilization, also at low speed
- It is a useful Fuel Saving Tool, as in ECO mode it can reduce fins drag and consumption up to 60%
- It has the most advanced Human-Machine-Interface, easily providing several real time information
- It could be integrated with ship equipment and its info could be shared with company office



THE EASY INSTALLATION

PINFABB ECO has been designed and built with great attention to the ease of installation, resulting to be the most easy-to-install Stabilizers Electronic Control in the market.

The system is composed by 5 electronic cabinets (wheelhouse, engine room, fins room) connected using a single Ethernet cable.

PINFABB ECO installation on board MIRANDA:

- Took few days to be performed
- Perfectly fitted using existing stabilizers cabinets, cables
- Perfectly interfaced using the existing hydraulic and mechanical plants



OLD ANALOGIC
CONTROL PANEL



NEW TOUCHSCREEN
TFT CONTROL DISPLAY

Bridge Control Panel



New and Suitable Main Panel Installed near the old unit. All the needed signals are connected easily just using 1 meter cable.

PINFABB ECO Main Panel is composed by industry and military standard components.

The system proved to be highly reliable and flexible.



New Digital Automation (FDA) installed inside the old automation box.

All the connections, from the local unit to the bridge, are performed using a single Ethernet Cable.

START & STOP buttons have been added for simple operation by the crew also from local, when needed.



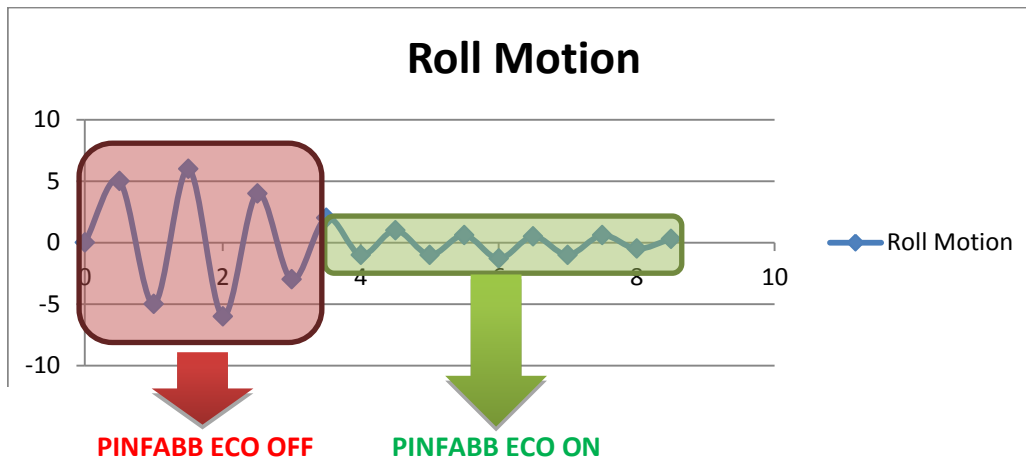
Looking inside the existing panel it's impossible to see any added cables. The existing panel remains clean and in perfect order.

SEA TRIALS RESULTS

On 27th May 2015, Pinfabb Engineers together with the Captain and the crew of the m/s Miranda carried out the sea trials of the system during the ship trip from Genoa (Italy) to Palermo (Italy) and from Palermo (Italy) to Genoa (Italy) during the next days.

The friendly collaboration, high expertise and great knowledge of the Miranda crew, mixed with the technical competence of PINFABB Engineers, was a key factor in the good tuning and calibration of the system.

As PINFABB ECO is a fully tailored stabilizer system, it was possible, during the trip, to test different attitudes and fins settings, in order to find the best and most efficient solution.



During the tests, PINFABB ECO resulted to reduce significantly the roll motion and roll accelerations of the ship. It was also found how much PINFABB ECO can reduce the Fins Drag Consumption, improving the ship efficiency without affecting the cruise speed also when fins are extended.



Fins just housed and the ship starts rolling

Ship cruise speed with fins in is 18,5 knots



Fins extended and controlled by PINFABB ECO: roll motion of the ship starts to decrease

Ship cruise speed with fins out can remain stable. PINFABB ECO provides stabilization saving the cruise speed, that is usually decreased by traditional control up to 1 kn

CONCLUSION

- PINFABB ECO has been installed in few days and immediately tested
- The installation of the system is very simple and clean
- The Control is very easy to use and the crew reported to be very intuitive for them
- PINFABB ECO reduces significantly the roll motion of the ship
- PINFABB ECO saves 60% of the fins drag, and the cruise speed can suffer NO variations also when the stabilizers are extended
- Consequently it can be adopted as a Fuel and CO2 emissions reduction instrument

For Matteo Fabbricotti (Pinfabb SRL CTO and PINFABB ECO developer):

"We are really proud to have been chosen by Godby Shipping, a company that is well known for the efficiency of its fleet, so it was a prestige for us to install our PINFABB ECO on board Miranda. I am especially satisfied by the progress of the installation that has demonstrated how PINFABB solution is a clever and simple step for ship owners/operators who want to renew their stabilizers with a very competitive and innovative solution.

As soon as installed the system was immediately put into service, demonstrating once again how PINFABB ECO is fully compatible with every stabilizing fins system.

From our side, special thanks go to all the Godby Management Personnel, who believe into this project and gave us full support, and to the m/s Miranda crew, who helped us with the installation and with the calibration of the system with their great experience and marine knowledge".

For Mikael Fredriksson (Godby Technical Manager and m/s Miranda Superintendent):

"Pinfabb showed a very professional attitude during the whole project.

Cooperation between Godby Shipping / Miranda crew / Pinfabb went smooth and we are very pleased with the end result of the project.

I can recommend Pinfabb Eco to other operators"



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