

## **First CP Propellers Ordered with Fuel-saving MAN B&W Kappel Blades**

**Frederikshavn, 3 March 2004.** MAN B&W Diesel A/S, Alpha, Denmark has been awarded the contract to supply the new MAN B&W Kappel Controllable Pitch Propeller blades as part of Scandlines' extensive refurbishment of the ferries M/F PRINS JOACHIM and M/F KRONPRINS FREDERIK.

The propeller contract is a successful verification of the new cooperation agreement between MAN B&W Diesel and JJ Kappel, that was signed and celebrated last year in connection with MAN B&W's 100 years propeller anniversary conference on December 3<sup>rd</sup>.



*M/F PRINS JOACHIM and M/F KRONPRINS FREDERIK in their original colours at the time they served as the Danish Great Belt 'bridge connection'*

MAN B&W Diesel A/S  
Alpha  
Niels Juels Vej 15  
DK-9900 Frederikshavn  
Denmark  
Tel.: ++45 9620 4100  
Fax: ++45 9620 4030  
[www.manbw.com](http://www.manbw.com)

Contact for further information:  
Torben Klingenberg  
PR & Documentation  
Tel.: ++45 9620 4243  
Fax: ++45 9620 4030  
E-mail: [tok@manbw.dk](mailto:tok@manbw.dk)

DIESEL

Blohm+Voss GmbH, Hamburg will be in charge of each vessel's two months contractual work and upgrading – and the vessels are scheduled to return to the Gedser-Rostock shuttle service during October and December this year.

In addition to Scandlines innovative approach towards unconventional propellers, the company expects with this upgrade operation to have at least another ten years service potential put into the ferries. The vessels were originally built by the Nakskov Shipyard, Denmark as the InterCity Train ferries for the Danish State Railways and were delivered during 1980 and 1981.

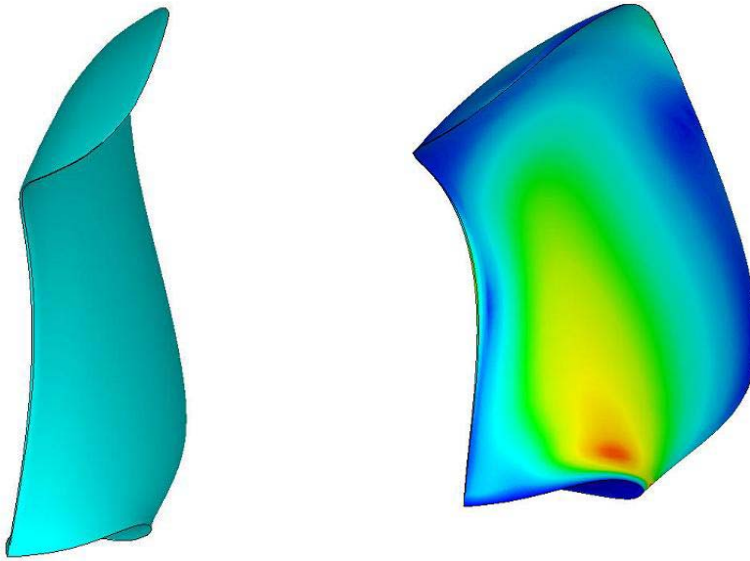
A very interesting aspect for Scandlines and MAN B&W Diesel, is the opportunity to conduct full-scale tests and comparisons between the fuel-saving Kappel propeller blades and the conventional propeller blades – due to the fact that the first vessel, the PRINS JOACHIM will be fitted with conventional propellers and the following KRONPRINS FREDERIK will be fitted with Kappel propeller blades. Having two similar vessels operating on the same shuttle route will be an excellent basis for propeller performance comparisons.

Additionally, Scandlines have an option for another eight Kappel spare blades to allow for retrofitting the propellers of PRINS JOACHIM at a later stage.

MAN B&W Diesel A/S  
Alpha  
Niels Juels Vej 15  
DK-9900 Frederikshavn  
Denmark  
Tel.: ++45 9620 4100  
Fax: ++45 9620 4030  
[www.manbw.dk](http://www.manbw.dk)

Contact for further information:  
Torben Klingenberg  
PR & Documentation  
Tel.: ++45 9620 4243  
Fax: ++45 9620 4030  
E-mail: [tok@manbw.dk](mailto:tok@manbw.dk)

TEST  
DIESEL



*The propeller design flow includes the FEM calculations and strength analysis of MAN B&W's Kappel propeller blades.*

*Kappel propeller blade poses new challenges with regard to strength analysis*

Both vessels' original tailshafts, stern tubes, bearings and intermediate shaftlines will be reused and refitted to the new VBS1380 type propellers with ODS oil distribution units and hydraulic PowerPacks. This new propeller configuration, with propeller diameters increased from the original 4.3 m to 4.5 m, will be absorbing 11 000 kW per shaftline for a maximum ship speed of approx. 21 knots.

The propellers are strengthened according to LRS Ice class 1C. An important aspect for the new propeller design is the design parameters for achieving high efficiency, reduction in pressure impulses to the hull, low noise and high manoeuvrability – in addition to the efficiency improvement calculated for the Kappel propeller blade profiles.

MAN B&W Diesel A/S  
Alpha  
Niels Juels Vej 15  
DK-9900 Frederikshavn  
Denmark  
Tel.: ++45 9620 4100  
Fax: ++45 9620 4030  
www.manbw.dk

Contact for further information:  
Torben Klingenberg  
PR & Documentation  
Tel.: ++45 9620 4243  
Fax: ++45 9620 4030  
E-mail: tok@manbw.dk

DIESEL  
TEST

MAN B&W's Alphatronic 2000 PCS system will be tasked to manage the Propulsion Control for the propellers, which will each be powered by three main engines.

### **The MAN B&W / Kappel agreement**

*The basic result of the agreement is that MAN B&W Alpha for future projects will be able to offer CP Propellers applying the KAPPEL hydrodynamic design, resulting in a 3-5 % increase in the propeller efficiency – corresponding to a similar reduction in the fuel consumption. JJ Kappel has for some time been working with the hydrodynamic design of unconventional propellers, mainly with the blades curved in the direction of the suction/ahead side towards the tip, named 'KAPPEL propellers'. The design of Kappel blades intends to provide higher efficiency than conventional propellers. The theory of the design and the results of the tests in model and full scale have been published in scientific fora.*

No 26/TOK

MAN B&W Diesel A/S  
Alpha  
Niels Juels Vej 15  
DK-9900 Frederikshavn  
Denmark  
Tel.: ++45 9620 4100  
Fax: ++45 9620 4030  
[www.manbw.dk](http://www.manbw.dk)

Contact for further information:  
Torben Klingenberg  
PR & Documentation  
Tel.: ++45 9620 4243  
Fax: ++45 9620 4030  
E-mail: [tok@manbw.dk](mailto:tok@manbw.dk)

DIESEL