F S

fehn ship management

UNSERE ERFAHRUNG SICHERT IHREN ERFOLG

ÜBER UNS

- gegründet 2003
- Sitz in Leer
- 12 eigene und fremde Schiffe im Management
- Schiffsgröße von 1260 dwat bis 9600 dwat

Teil der EMS-Fehn-Group

- 21 Unternehmen
- 14 Büros
- 8 Länder
- 300 Mitarbeiter

mehr Informationen unter www.fehnship.de

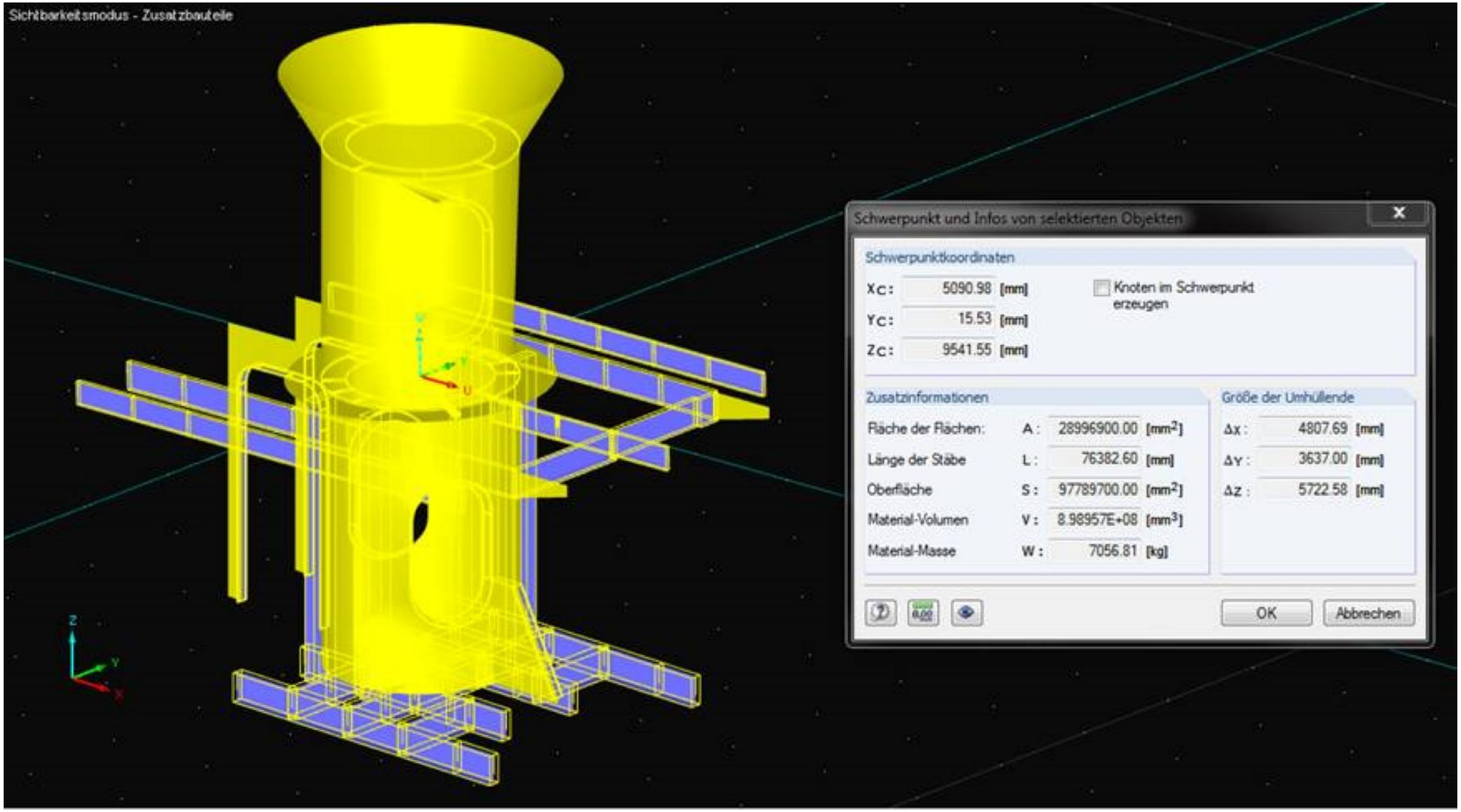
FEHN POLLUX

FEHN POLLUX

Schiffsdaten

Baujahr	1996
Länge	89,77 m
Breite	13,17 m
Tiefgang	5,7 m
Tragfähigkeit	4200 t
Maschine	930 kW

VORBEREITUNG SCHIFF



EINBAU JUNI 2018

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EINBAU JUNI 2018

EINBAUZEIT ACHT TAGE

SCHULUNG 1 BIS 3 TAGE

2 TAGE TEST UND KALIBRIERUNG

2 TAGE TEST UND KALIBRIERUNG

SEIT JULI 2018 IM EINSATZ

ECO FLETTNER REPORT

FM: [redacted], 2nd Mate „Fehn Pollux“

Operations:

1. Operation of rotor is not so difficult after you experience it one time using it but in any case operational procedure is text book sample prepared properly and ready for use.
2. Trouble shooting guide is good but not still applicable for ship’s crew due to experimental stage of the project.

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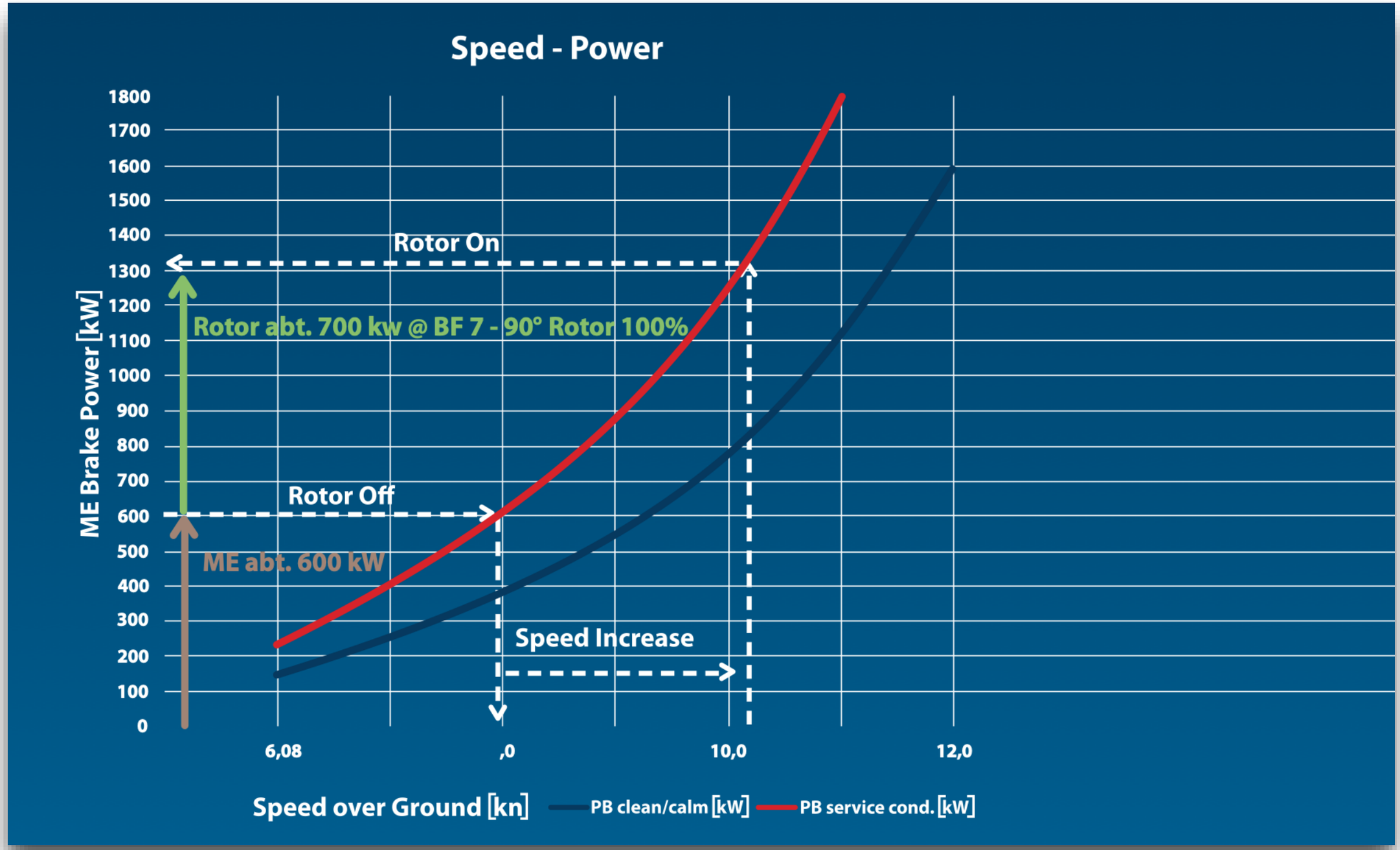
2. Trouble shooting guide is good but not still applicable for ship’s crew due to experimental stage of the project.
3. Console display very helpful since we have actual wind display and sensor readings as well.

LEISTUNG


Speed - Power
ME Brake Power [kW]
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
Rotor On
Rotor abt. 700 kw @ BF 7 - 90° Rotor 100%
Rotor Off
ME abt. 600 kW
Speed Increase
6,08
,0
10,0
12,0
Speed over Ground [kn]
PB clean/calm [kW]
PB service cond. [kW]

DANKE FÜR IHRE AUFMERKSAMKEIT

Design describtion of MV 4,900 DWT

General cargo ship, equipped for the carriage of containers, strengthened for heavy cargo, singledecker, gearless

Length o.a.:	89.95 m	Air draft:	26,50 m	Bow thrusters:	Yes
Breadth:	14.40 m	Gross tonnage:	2967 t	Speed:	abt. 10 kn
Draught:	6,22 m	Dwt.	4939 t	Main engine:	1980 kW
		Fuel :		Generator(s):	2 Diesel generators 168 kW,
		HFO/MGO			1 Shaft generator 312 kW

Saving potential of MV Musterschiff

One ECO FLETTNER on the forcastle

05.08.2019: exchange rate: 1 US-Dollar = 0,90 Euro

Estimated annual time at sea is 208 days (5000h, 57%)

Main Engine with 1980 kW, 75% propulsion efficiency PD 1485 kW, service speed 11 kn
SFOC, 199g/kWh: 7,1 t/day fuel consumption, MGO

Wind statistics and simulation based approach using historic weather forecasts
Moritz Götting, M. Sc., University of Applied Sciences Emden/Leer, 10/2018

Performance predictions per square meter sail area based on the results from MV Fehn Pollux and calculations of the University of Applied Sciences Emden/Leer, Prof. M. Vahs, 02/2019

EF18 Rotor sail performance (54m^2)

Fuel and CO2 saving potential with one EF18 on MV 4,900 DWT
in automatic modus

Medium Wind Areas:
2 kW/m^2 sail area
(Ship & Bunker, 19.03.2019) MGO approx. **620 $/t**:
MV Musterschiff 7,3% savings = 0.52 t MGO/day = 322 $/day = 66,980$
Annual fuel cost savings: **60,120 Euro**
Annual CO2 savings: **339 t**

Good Wind Areas:
2,5 kW/m^2 sail area = 135 kW in addition to ME-power (annual average)
(Ship & Bunker, 19.03.2019) MGO approx. **620 $/t**:
MV Musterschiff 9,1% savings = 0.65 t MGO/day = 403 $/day = 83,820$
Annual fuel cost savings: **75,240 Euro**
Annual CO2 savings: **432 t**

Very Good Wind Areas:
>3 kW/m^2 sail area = >162 kW in addition to ME-power (annual average)
(Ship & Bunker, 19.03.2019) MGO approx. **620 $/t**:
MV Musterschiff >11 % savings = 0.78 t MGO/day = 484 $/day = 100,670$
Annual fuel cost savings: **90,360 Euro**
Annual CO2 savings: **518 t**

EINSPARUNG

1. Version:	2. Version:
1 rotors on the foredeck with 18 m height and 3 m diameter	1 rotors on the foredeck with 22 m height and 3.60 m diameter
Investment costs: about 600,000 Euro	Investment costs: about 750,000 Euro
No impact in cargo operations	No impact in cargo operations
About 7 - 11 % fuel savings/year are possible	About 10.7 - 16% fuel savings/year are possible
About 60,120-90,360 Euro/year fuel cost savings	About 87,940–132,000 Euro/year fuel cost savings
About 339t – 518 t CO_2 savings/year	About. 505t – 757 t CO_2 savings/year