

Two perspectives of the installation of Ballast Water Treatment Systems Concerns

1. The high-level perspective by Jenny Braat



2. The Installation perspective by Ivan Larsen



About Danish Maritime



Jenny N. Braat,
Managing Director

Danish Maritime

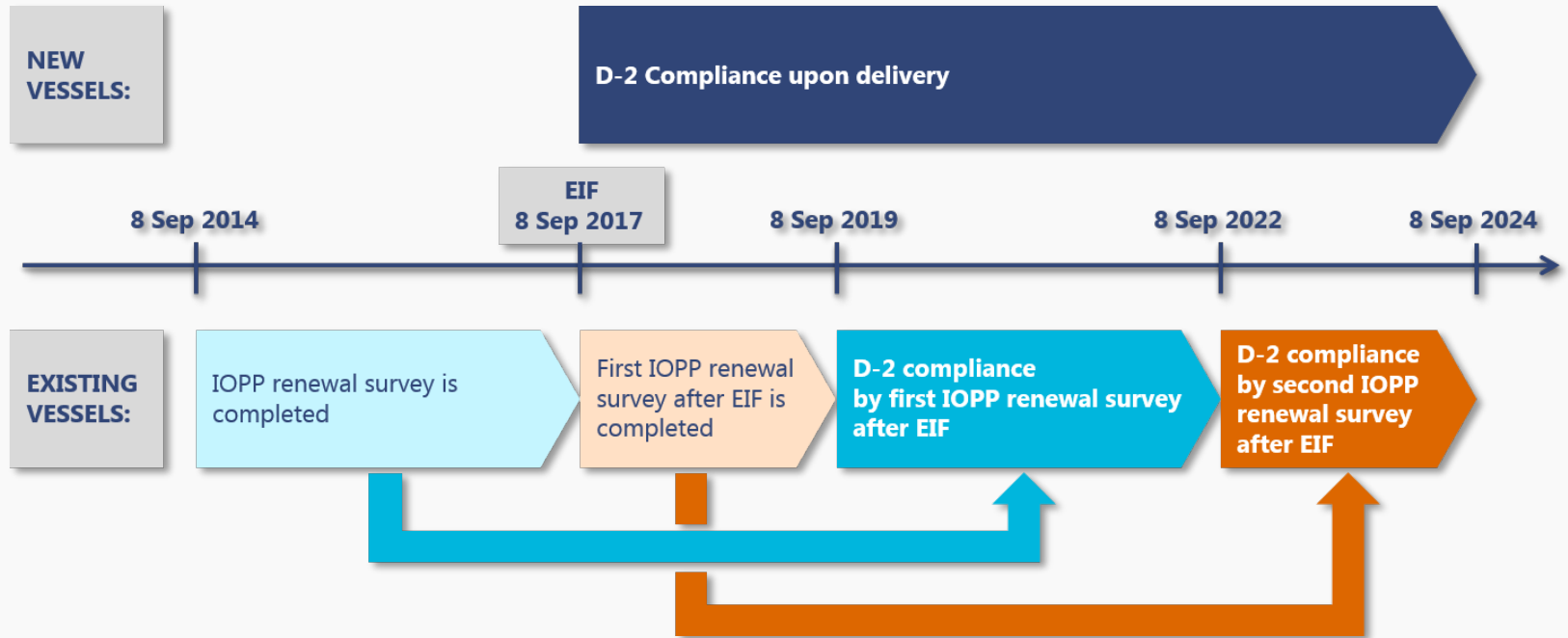
- Danish Maritime is a trade organization founded in 1919 by Danish shipyards and maritime equipment manufacturers
- Our members are involved in all facets of the industry - innovation, research, development, production, technical support, repairs and service
- Through policymaking, our aim is to collectively safeguard the common interests of businesses in the Danish maritime industry.



IMO	Year of construction	Ballast water capacity (m3)	2009	2010	2011	2012	2013	2014	2015	2016	
			Newbuilds	In or after 2009	< 5,000	D2					
2009 but before 2012	≥ 5,000	D1 or D2							D2		
In or after 2012	≥ 5,000						D2				
Existing vessels	Before 2009	1,500 – 5,000	D1 or D2					D2			
	Before 2009	<1,500 or >5,000	D1 or D2							D2	



MEPC 71 amendments to the Ballast Water Management Convention, 2017



What do we want

- Sustainable or non sustainable development
- Globalization or regionalization
- Innovation or stagnation
- Costs for the surrounding society



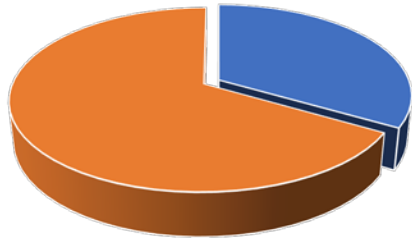
Speed is all
- Quality is everything



FAYARD Key Figures

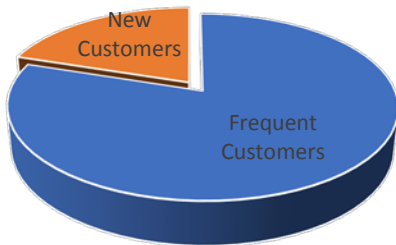
4 Large Graving Docks
130 Vessels for services per year
A Vessel departures every 3rd day

Project Orientated &
Networking Organisation



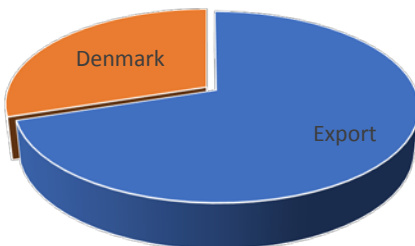
33% FAYARD
66% Partners

Customer's Appreciation



80% Frequent Owners
20% First Timers

International



70% International Owners
30% Danish Owners



The BWM Convention enter into force this Friday!

- Owners need clear communication from IMO, USCG, Flagstate, Classification Society amongst others, for successful compliance
- Makers challenged type approval method
- Contractors like FAYARD need for clear rules and guidelines for efficient installation and commissioning

Avoid



Ideal



**No BWTS Installation
to exceed the
duration of a normal
Yardstay!**



Speed is all - Quality is everything

Owner's Concerns

- Approvals
- Real life experience
- Efficacy
- Treatment method
- Installation
- Investment
- Operation
- Maintenance
- Trading pattern
- Compliance
- Spares availability
- CAPEX
- OPEX

FAYARD's Concerns

- Footprint
- Access for maintenance
- BWTS Power consumption
- Power/Energy availability
- Piping and Tie-ins
- Ballast pump capacity
- Pressure drop
- Ballast water capacity
- Method of ballasting
- Integration of controls
- Approvals and Class requirements
- Compliance monitoring
- Compliance documentation

Speed is all
- Quality is everything

Turnkey Solution or Individual Contracts?

OWNER

Installation

Installation

MAKER

FAYARD

Installation: Yard, Alongside or During Voyage?

Speed is all - Quality is everything



FAYARD BWTS RESPONSE to OWNERS choice of Maker and System:

- Desktop Survey
- Vessel Survey
- 3D Scan for modelling to CAD allowing prefabrication of major components
- Installation Design and Layout
- Cost benefit analysis for installation options
- Isometric drawings for structural and piping requirements
- Preparation and submission of documentation for Class approval of installation
- Safe storage of Owner's purchased BWTS while preparing installation
- Purchasing of installation material and installation components required
- Pre-fabrication of piping systems etc.
- Installation
- Red Line update of relevant P&IDs
- Installation manual showing tie-ins to existing systems etc.
- Update BWM Plan & Trim and Stability Manual, if required
- BWTS commissioning assistance to BWTS Maker
- Training the ship's crew in the new installation

Choosing the right solution

Custom made integration design

Detailed Design & Planning

Optimized Installation

Speed is all

- Quality is everything

PREPARATION of all interfaces and dependencies throughout the supply chain:

- Owners Decision in Due time of Maker and Solution
- Engineering and Design Availability & Capacity
- Maker's timely delivery
- Installation Capacity & Facilities Availability
- Equipment/Material for Installations Availability
- Class Capacity
- etc.

Speed is all - Efficiency is everything

130 vessels in 365 days: Average re-delivery of vessel every 3rd day year round.

Delivery time of BWTS: Makers like Alfa Laval, Wartsila, Desmi Oceanguard...: Minimum 12 weeks delivery time from clarified order.

CONCERN:

FAYARD constantly to manage 28+ BWTS projects in various phases at the same time during the 5 year period

NEED:

Clear Rules and Guidelines from all stakeholders

Thank you for your attention
www.fayard.dk
and welcome at stand A34