Marine Division by numbers
- Order intake (OI) based on LTM September 30, 2018,

Order intake:
SEK Bn 16.5 (+39%*)

Sales:
SEK Bn 13.0 (+16%*)

*) Compared with WY 2017, fixed rates
Industries and Growth drivers
Distribution of orders LTM September 2018

<table>
<thead>
<tr>
<th>Driver</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ship building</td>
<td>33%</td>
</tr>
<tr>
<td>Environ., Gas &amp; Energy, Marine</td>
<td>32%</td>
</tr>
<tr>
<td>Offshore</td>
<td>8%</td>
</tr>
<tr>
<td>Engine power</td>
<td>4%</td>
</tr>
<tr>
<td>Service</td>
<td>23%</td>
</tr>
</tbody>
</table>

- Driver: World trade & Fleet capacity, Legislation and fuel cost, Energy needs, Electrical power needs, World trade
- Share: 33%, 32%, 8%, 4%, 23%
Alfa Laval on board
- Product, system & application leadership, 17 product groups

Steam and heat generation
Thermal fluid heating
Cooling and heating
Waste heat recovery
Freshwater generation
Ballast water treatment
Inert gas systems
Gas combustion
Cargo pumping
Fuel conditioning
Filtration
Oil treatment
Tank cleaning

Container ship
Bulk carrier
Tanker
Gas tanker

Exhaust gas cleaning
Crankcase gas cleaning
Oily waste treatment

16 30
Product launches LTM  Product launches NTM

www.alfalaval.com
Test & Training Centre
Total solutions in ballast water treatment
The complete Alfa Laval PureBallast offering

- Optimal fit for your vessel and budget
  - Feasibility studies
  - Legislation experts
  - Financing

- Securing compliant and reliable operation
  - Easy reporting to authorities
  - Compliance service package
  - Sampling and testing service packages
  - Crew trainings – offline and online

- Project execution you can trust
  - Project management
  - Commissioning
  - Various commissioning options
  - Network of trained engineering- and installation partners
International Marine Service
Yard contracting
- 1st October 2018, including all ships above 2,000 Dwt/Gt

Trend 2019
- Tanker
- LNG
- Bulk carrier
- Container
- Cruise

Number of vessels

Source: Clarkson Research Services Limited
www.alfalaval.com
FPSEO awards

FPSEO Awards Historical and Forecasted 2018-2022
(Historical and High, Middle and Low Case)

Source: EMA FPS Industry Report - Q1, 2018
Ballast water treatment

- Expected market development (MEUR), as communicated at CMD 2017
Ballast water treatment

- Expected market development (MEUR)

M€

0 200 400 600 800 1,000 1,200 1,400 1,600 1,800

2018 2019 2020 2021 2022 2023 2024 2025 2026

Retrofit

New build

EUR 9 B
market value

October, 2018
Scrubbers
- Expected market development (MEUR), as communicated at CMD 2017

M€


New build

Retrofit

market potential

€ 5B
SOx Scrubbers development
- Uptake Accelerating In 2018

Clarksons Research Scrubber Count (No. Vessels)

- Orderbook
- Fleet (Fitted)
- Fleet (Retro-fit Pending)

Orders not yet published/linked to individual ships.

x 4 increase in count confirmed since start year.

Source: Clarksons Research. Figures exclude some orders still to be linked to individual vessels. Actual aggregate numbers will be higher. Please contact Clarksons Research and/or visit World Fleet Register for the latest numbers.
SOx Scrubber comments

- Total market of orders in 2018 higher than expected
- Order backlog has an even split between newbuilds and retrofit.
- Newbuild order backlog according to Clarkson now contains 16% scrubbers (# ships) with higher numbers for tankers (26%), Containerships (26%) and lower for bulkers (13%)
- Higher percentage of scrubbers on ships with larger engines (above 12-14 MW)
- Average shipset value higher than 1.0 MEUR due to larger engine sizes
- Latest market reports 2018 show a trend to a possible higher market potential 2018-2026 than our 2017 guidance
- Potential very much depends on the fuel price delta between 0.5% sulphur fuel and HFO, availability of fuels, adoption rate per ship segment and assessment of environmental impact of scrubbers
Further distillation of HFO at the refineries will be costly and will increase CO2 emissions due to higher energy consumption.

Combustion converts Sulphur into harmful SOx. The scrubbing process converts SOx to harmless sulphate salts which are naturally present in the oceans. Sulphur is thus not thrown into the water.

Harmful particulate matters (unburned HFO, lube oil, soot, calcium, nickel, vanadium = PM) are caught in the scrubber.

LNG combustion slips methane which is a 28 times more powerful greenhouse gas than CO2.
In conclusion...

- Marine Division

- Yard contracting is forecasted to increase in 2019 and the years thereafter.

- Orders of Ballast water equipment and SOx Scrubbers are developing above previous expectations. Ballast water equipment potential 2018-2026 upgraded. Scrubber potential 2018-2026 possibly higher than 2017 guidance.

- Innovation of our product and systems assortment is high and will continue to have a top priority the coming years.