RV Jákup Sverri

update on performance and operations

27th ERVO

HAVSTOVAN
FAROE MARINE RESEARCH INSTITUTE

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european research vessel operators

JS Topics at 27’th Ervo

- Energy consumption
- Anti-roll system use & further developement.
- Topas18 ground truthing
- Mapping: Gethin Roberts presentation tomorrow
- Poster session
- Round-trip onboard Jákup Sverri

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Energy consumption

Vessel main particulars:

- Multipurpose RV vessel, Silent- R, Tier III, 13 crew + 12 scientist
- Propulsion: 2400 kW AC (2*1200kW doublewounded motor)
- Diesel Gensets: 2 of 1499 kW Wartsila 8L20
- Emergency/Harbour generator: 1 of Scania Nordhavn 6 cyl. 300kW

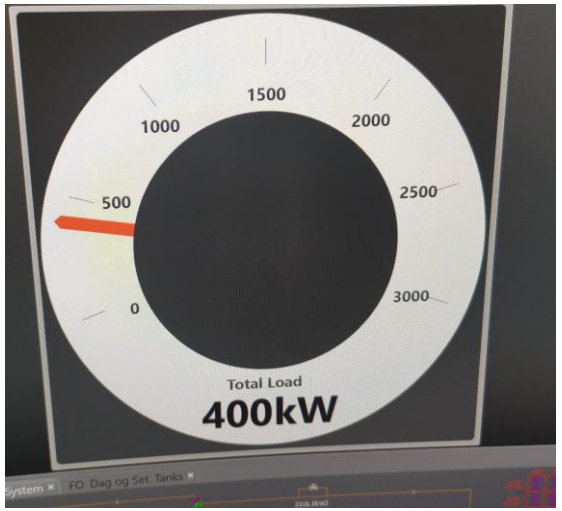
Heating system:

- Oil central kettle heating.
- Hotel heated by air condition 19 C that gets heating from kettle water.
- Big floors in changing room heated by water.
- Additional electrical heating in aircon inlets and WC floors.
- Heat exchangers on generator sets provide heating when in operation.

Harbour mode consumption:

Energy for cooling plant, aircondition, heating and electrical power total around 90-100 kW load.

- One Wartsila generator running: 1200 l/day (load/effiency not optimal)
- Harbour generator 550-600 l/day

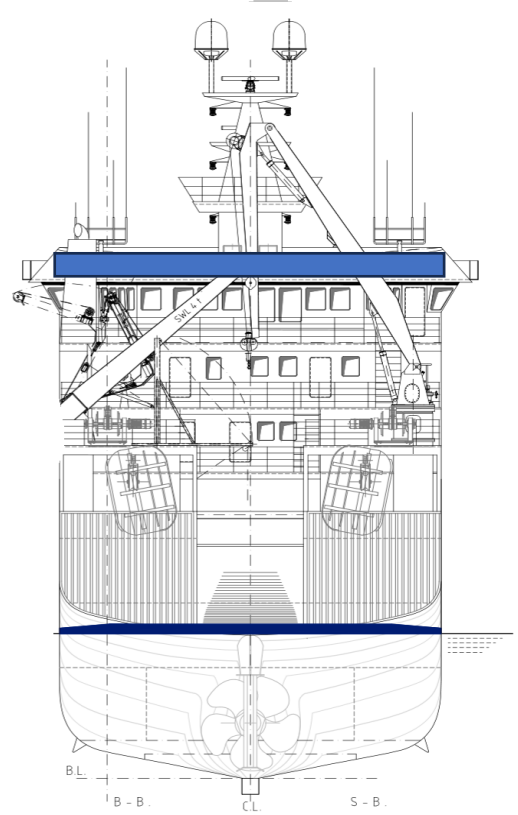


Main working mode consumption numbers:

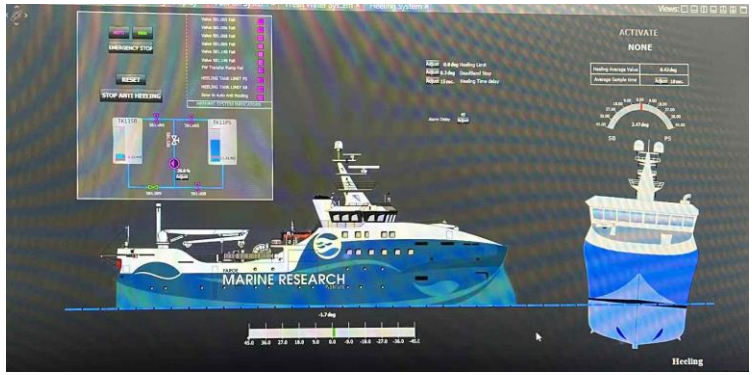
- Sea trial 750 kW propulsion/11 knot (half bunkers) in dead water.
- Transit 10-11 kn. Total energy consumption 1000-1200 kW (calc. 5700-6880 l/day)
- Bottom trawl 900 - 1000 kW (calc. 5130-5700 l/day) 1 genset
- Pelagic trawl 1500 - 2000 kW (calc. 8550-11400 l/day) 2 gensets
- Yearly Average at sea 3500-4000 l/day (Transit, trawl operations, stations)
- *The Outlier: Seismic operations 4 km streamer 4 kn. 400 kW (calc. 2280 l/day)*

Anti-roll system use & further developement

- Passive anti roll tank system
- In specs. from the start of project.
- Idea: Simple system, works even when vessel is at 0 knots.
- Fresh water system and by that not a ballast tank. (no cleaning system for ballast water)
- Should be simple but:
- Passive tanks works best when trim is 0. JS is a high vessel (lots of wind load, and to much manual trim required. On the positive side, the higher the tank less volume needed.
- Getting the water back into water tanks.
- To much pumping back and forth moving weight in bottom tanks.



- Missing items: line/valve for salvaging fresh water to watersupply tanks. Precise measurement of volume entering the tank. Automatic trim of vessel.
- Last year started programming of automatic trim system keeping the vessel upright automatically.

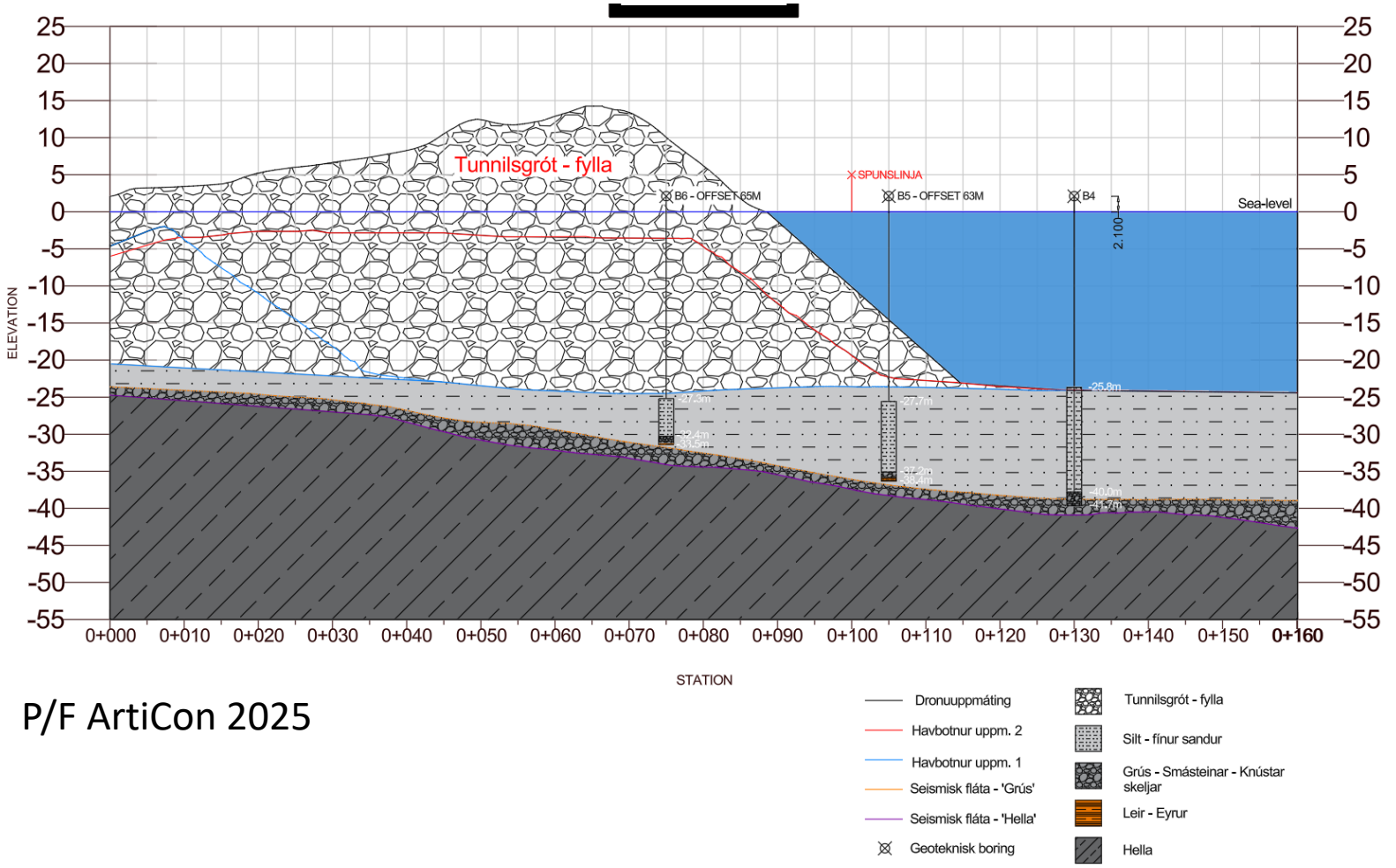


- Anyway: Now in use all the time return pipe and valve for reuse of water , automatic trim in use and refined when issues arise
- Different conditions requires different volumes between 4 to 7 tonnes of freshwater.

Topas18 sub bottom profiling

Ground truthing

- Harbour construction in Faroe islands
- Topas18 survey, postprocessing Faroe Geological Survey
- Results: Bottom, seismic layer 1 and seismic layer 2.
- Geotechnical drilling confirms layers
- And indentifying material



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Additional Jákup Sverri info at this meeting

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- Poster session
- Round-trip onboard Jákup Sverri & MEST

Thanks for listening!
Questions?