Sjöfartens Dag
MARITIME DAY

DFDS

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- Introduction
- Ro-Ro/PCTC Vessel Characteristics
- LASH FIRE
- DFDS Takeaways from the Project
- Carriage of Electric Vehicles (EV)
- Charging Onboard (Ro-Ro/Ro-Pax/Ferry)
- Fire Fighting Challenges
- Conclusions

Ro-Ro/-Pax Vessel Characteristics:

PCTC/LCTC Vessel Characteristics:

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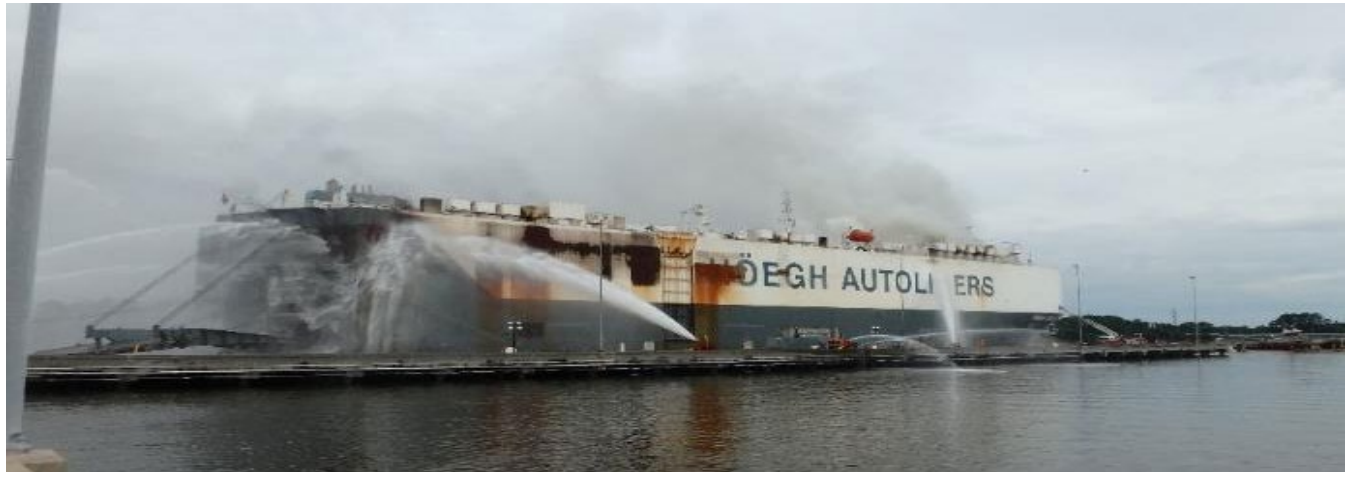

- Misconceptions → putting out EV fires → HRR → Toxicity
- Drenchers proven effective – early activation
- Effectiveness of CO2 and water mist
- Foam systems have had reliability issues – early activation paramount
- Tight stowage → blankets, other manual fire fighting not feasible
- Fire in port → need to be addressed → catastrophe waiting to happen!

LASH FIRE

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- **L**egislative **A**ssessment for **S**afety **H**azards of **F**ire and **I**nnovations in **R**o-Ro Ship **E**nvironment
- LASH FIRE: international research project aiming to reduce the risk of fires on board ro-ro ships
- First time Marine Insurance is invited as an active and important stakeholder

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LASH FIRE

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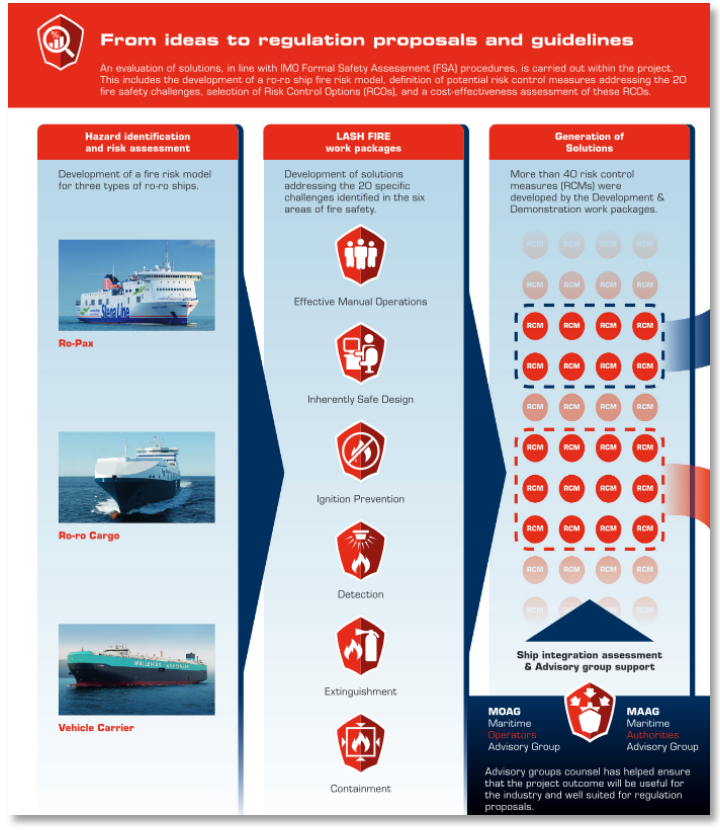
WORK PACKAGES WITH HOLISTIC VIEW ON:

- Co-operation and communication
- Formal Safety Assessment
- Ship Integration
- Effective Manual Operations
- Inherently Safe Design
- Ignition Prevention
- Detection
- Extinguishment
- Containment



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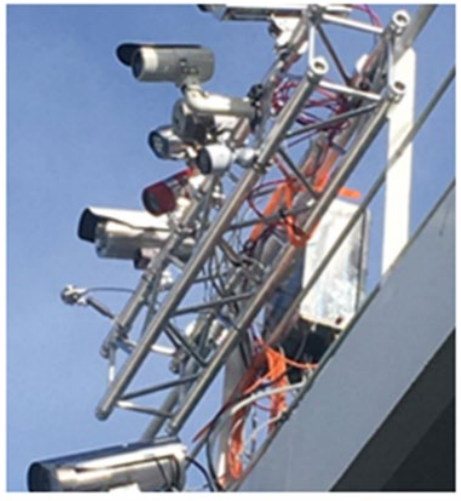

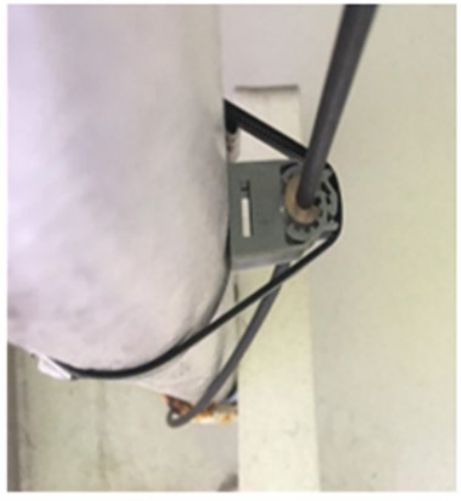

- 7 different optical detectors for weather deck
- 1 flame detector Open ro-ro space
- Linear heat detector cable 187m

LASH FIRE

Testing on board Hollandia Seaways

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LASH FIRE

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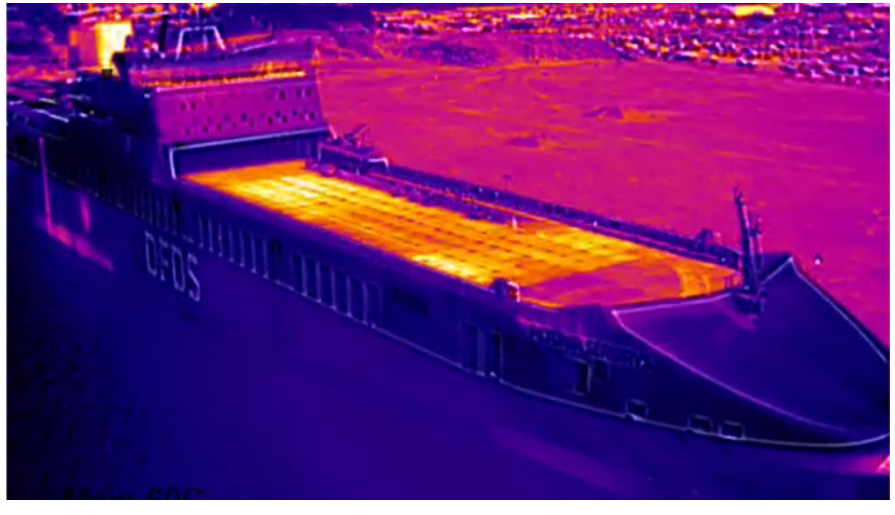
Drone testing Petunia Seaways



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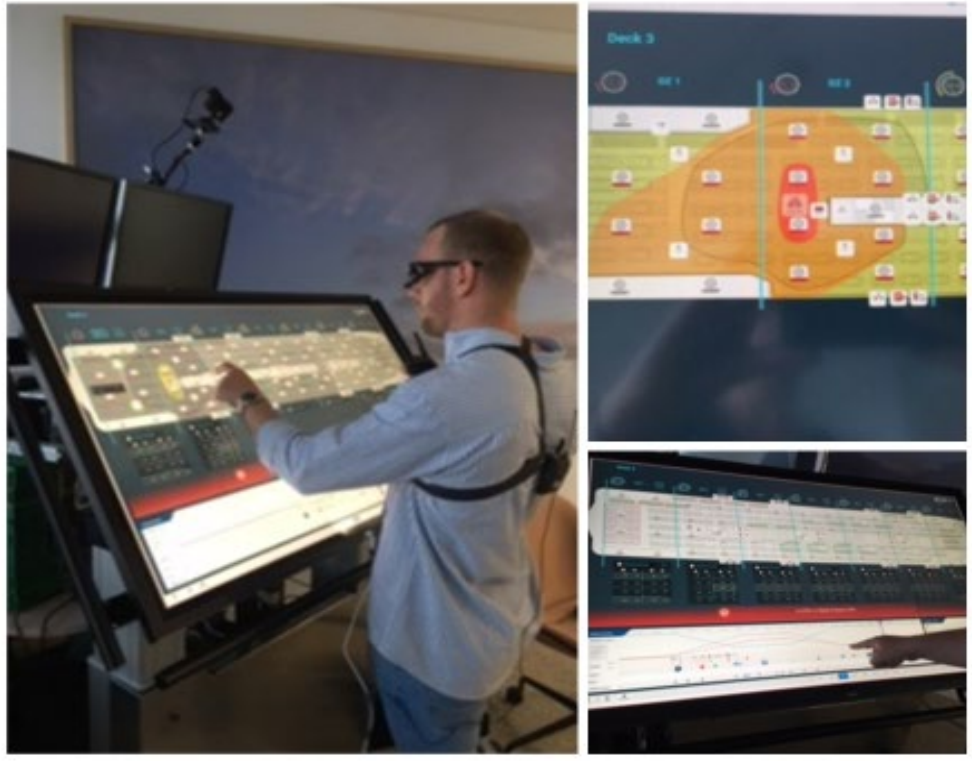

LASH FIRE

Digital Fire Panel

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ELBAS - NEW TECHNOLOGIES AND METHODS

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Special fire-fighting package for all DFDS vessels

4 x Fire blankets for EV/AFV
1 x FLIR K2 camera
2 x Boundary cooling units, “Jøni Type"
4 x Portable “grab & go” cooling pipes
1 x Fog nail
Special fire fighters suits EN469:2020 (X2,Y2,Z2)
Under garments (Long sleeve and long pants) to be used with the above suits

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Special fire-fighting package for all DFDS vessels

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E-learning and training on board

What is an additional risk when dealing with fires in AFV vehicles?

- ☐ The battery is likely to explode!
- ☐ Hydrogen Fluoride
- ☐ The drivetrain of an electric AFV might engage without notice.

✓ Submit

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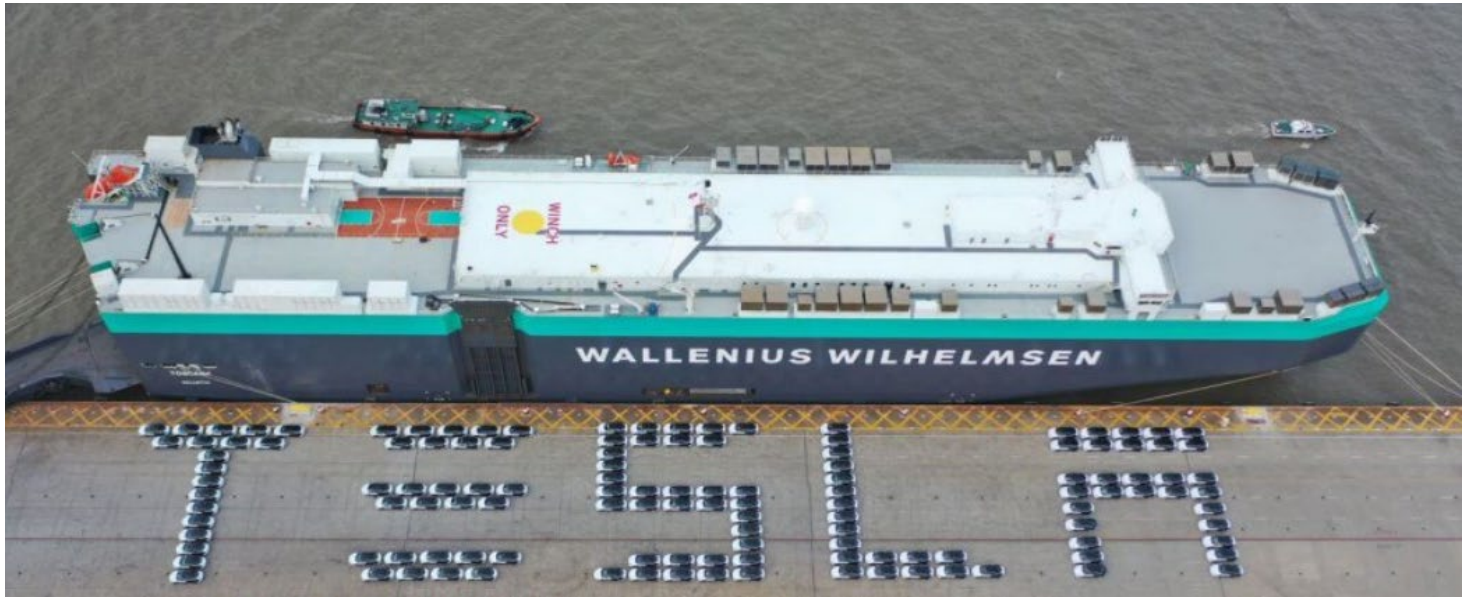
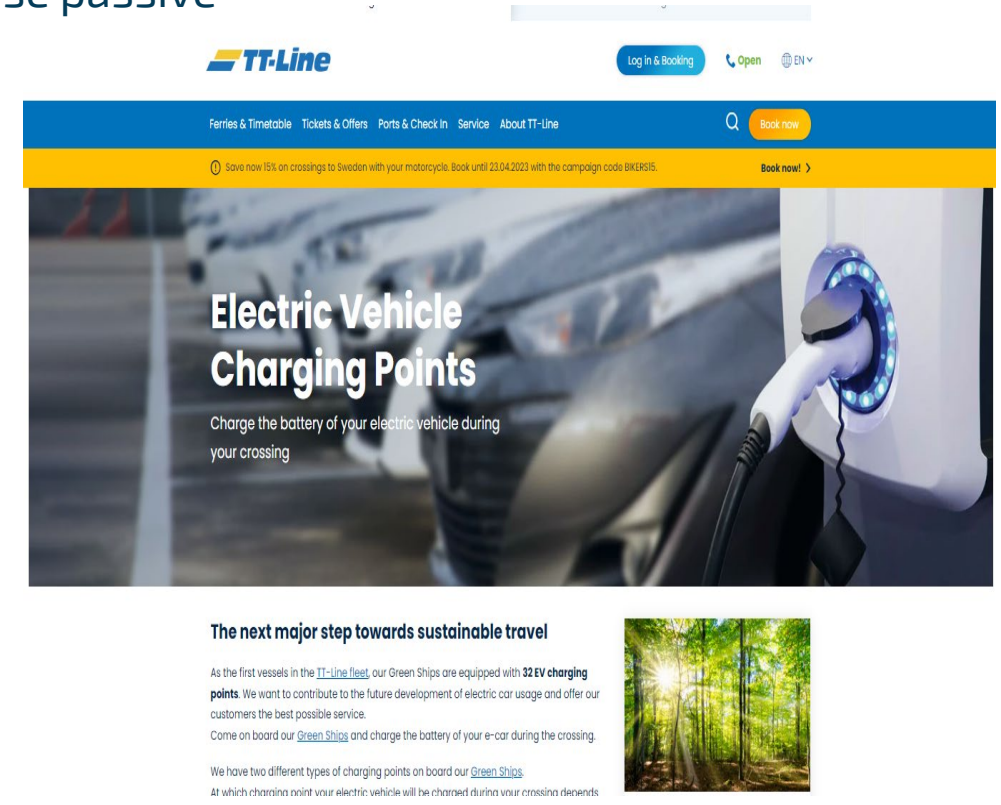
- Since 2011 → no documented fires on factory new vehicles
- 2015 WWL AFV Project = No elevated risk, controlled burn down
- Numerous on-going and finalised research projects → IUMI/Cefor/OEMs
- Current factory new ocean carriage volumes > 10% of total cargo and growing



- A few carriers offer charging onboard
- BMS safety systems active when charging – otherwise passive
- Limited capacity – incentive mostly commercial
- Marine Insurers have multiple voices on the issue!



COMPANY POLICY

- A damaged Alternative Fuel Vehicle (AFV) must be rejected and cannot be loaded or carried on board according to Global Ship Management System Doc#7.4.8.
- Charging is not allowed on board according to Global Ship Management System Doc#7.4.8

CONCLUSIONS:

- Fire and fire risks are now better under control and understood!
- We can suppress and limit vehicle fires!
- We can train crews with realistic fire scenarios!
- We see development and innovation for better fire equipment and methods!
- Collaboration: Industry and research institutes -> knowledge sharing -> share...
- The future is EV – Inherently better built and safer!
- Risks are not greater, but different!
- Agreed Global Standards needed!
- Clear Policies Needed – One Voice!

THANK YOU!

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