INTERFERRY CONFERENCE 2024 MARRAKECH

Safety Spotlight:
Alternative fuels for ship and cargo

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Safe transport of electric vehicles

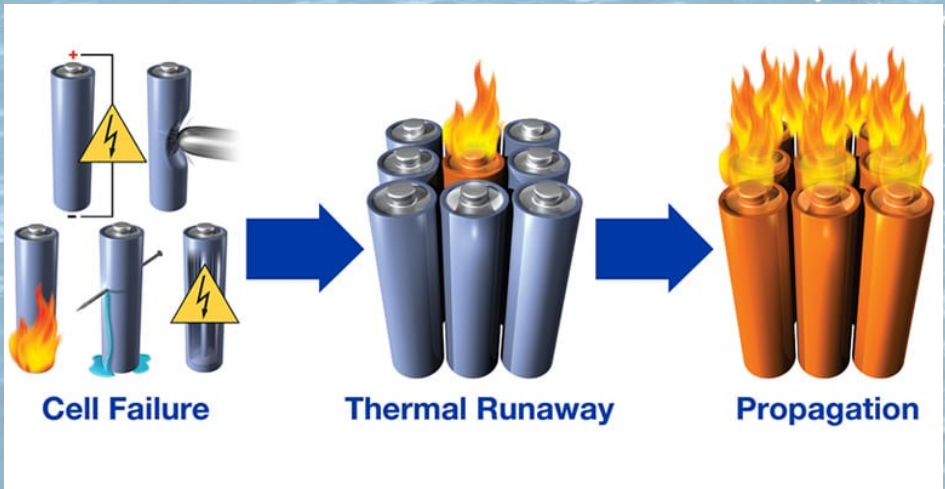
Vehicles with Li-Ion batteries onboard

- Electric cars
- Hybrids
- Light vehicles
- Heavy vehicles
- Loaded on trailers

Li-Ion battery thermal runaway

Causes of thermal runaway

- Manufacturing error
- Mechanical impact
- External heat
- Overcharging



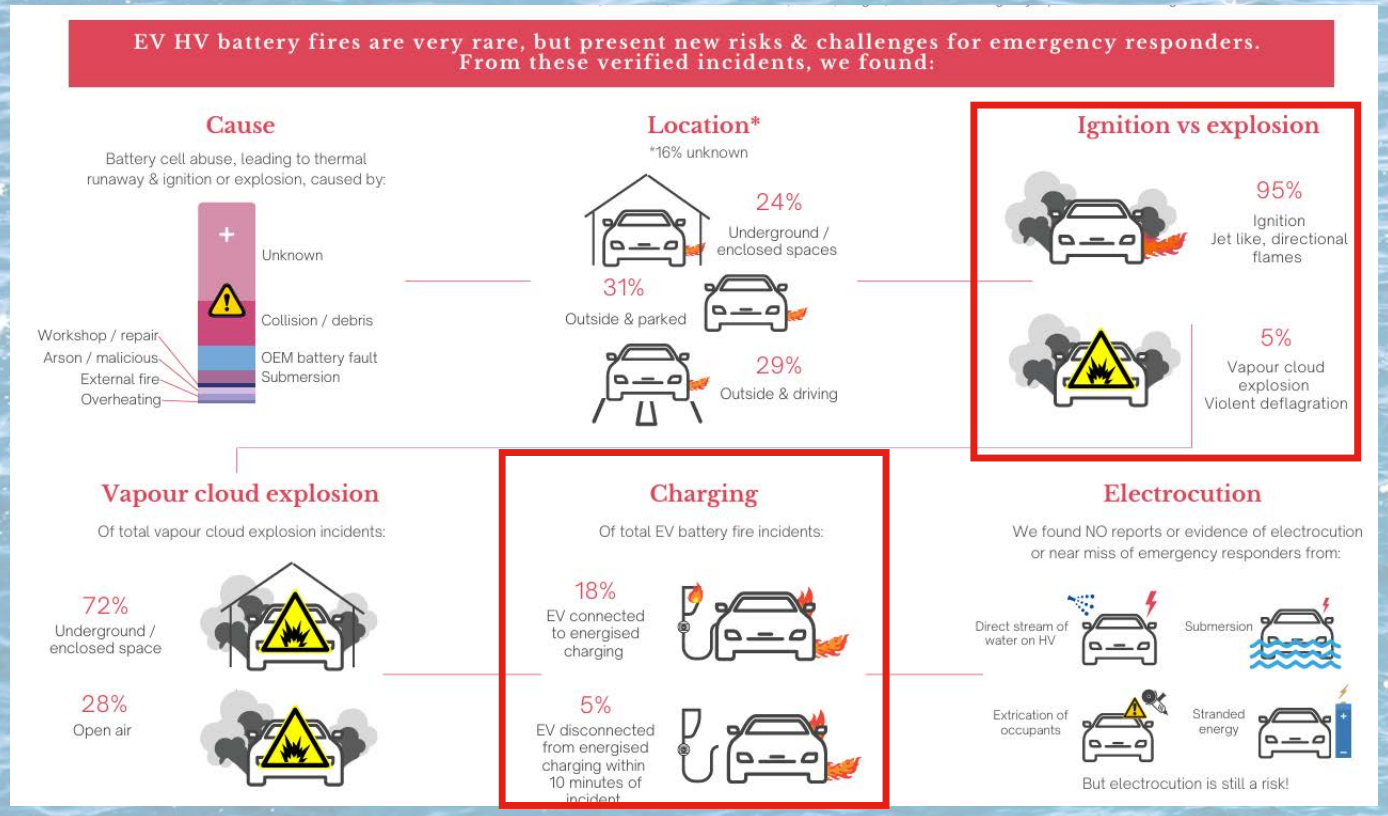
Potential consequences

- Toxic gases
- Dramatic ignition
- Gas explosion
- Intense battery fire
- Spread of energi rich objects
- No means of definite extinguishing
- Long period of risk of re-ignition

Indicents marine and ashore – less EV involvement than you may think

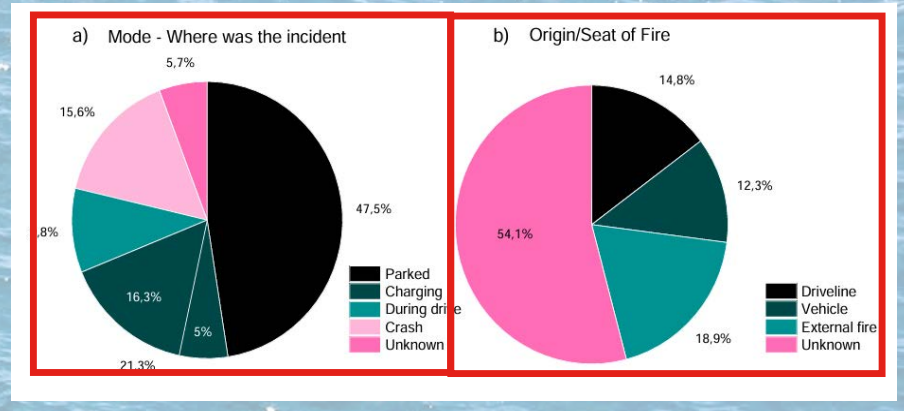
- Fremantle Highway, Felicity Ace,…
- Pearl of Scandinavia 2010, charging
- 24 million new EVs shipped…

Fire statistics



"Thatcham Research, the UK motor insurers' research centre, conducted research from 2018 to 2020. They found that 0.001% of plug-in hybrids and 0.003% of range extended electric vehicles were the subject of fire claims. That was lower than the 0.007% of petrol vehicles and 0.011% of diesel vehicles."

INFRA.GLOBAL/ARUP-PRODUCES-EV-FIRE-SAFETY-GUIDELINES



For RoPax, not <u>larger</u> fire risk but <u>different</u>, fits into the risk portfolio

Largest risk: Hesitation to act on RoRo fires due to lack of EV knowledge

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Where do we stand and where do we go?

- E-TOX, Brend, Albero, LASHFIRE, ELBAS, Safe & Suitable Firefighting
- Guidance notes from Flags, requirements from Class
- SOLAS ongoing/IMDG ongoing/STCW to be initiated
- Sharing learnings between operators
- Maturing in progress, different stage
- Open mind to new findings
- Coming projects: *EDOT, COFFEE, COMBAT, ARCTIS, roroFF, BMS Rescue…*
- Onboard info and training needed

10 bullets for safe RoPax operation

1. Educate crew on risks and safety precautions
2. Risk-assess decks ventilation/open decks
3. Remote observation, CCTV with replay, use IR
4. Fast application of fixed systems, boundary cooling and suppression
5. Local additional sprinkler devices as alternative
6. Train fire teams for safe manual activities
7. Use adequate protective suits and gear
8. Proactive and emergency routines for small units
9. Large realistic drills with ports and shore fire brigade
10. Continue to listen in, learn, update

Value of collaboration drills

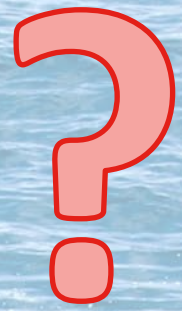
Will our car decks be less safe onward?

- Nope, not if we do our homework!
- Addition to to our risk portfolio, more complex world
- But temporarily, yes, if lack of knowledge and if hesitating to act by fear
- Full control of our vessels but very little control of our cargo
- Replace fear by facts
- Proactiveness, continous learning
- Collaboration and sharing INTERFERRY Representing the Ferry Industry Worldwide

Be curious, learn and sail safe!

Thank you for your time!

Myths (and facts) about EV fires



- ”BEVs burn more often than ICEVs”
- “BEV fires are more intense than ICEV fires”
- “Jet flames from BEV fires will spread fire faster than ICEV fires”
- “Battery fires can’t be extinguished & the drencher cannot control BEV fires”
- “BEV fires burn very hot and can melt the deck below the fire”
- “You can get electrocuted whilst extinguishing a BEV with water”
- ”Hydrogen fluoride produced from BEV fires is highly toxic”
- ”The fire crew is not protected from BEV fires by the standard fire suits”
- “Overcharging a Li-ion battery can cause thermal runaway”

BEV = Battery Electric Vehicle ICEV = Internal Combustion Engine Vehicle