The rising risks of shipping electric vehicles for shipowners, carriers and cargo interests

MARCH 2022

wotton kearney

A founding member of LEGALIGN GLOBAL

AT A GLANCE:

- The demand for electric vehicles (EVs) is rising, with lithium-ion cell battery technology being embraced as part of the solution in tackling climate change.
- The significant uptake of EVs is not without risk, particularly during transportation, because of the potential fire hazards posed by lithium-ion batteries and the fact EVs presently do not have to be declared as dangerous goods on roll-on/roll-off (ro-ro) vessels.
- Given the high value of damages associated with shipping fires, and the complexities of establishing causation and apportioning liability, it seems more needs to be done to manage the rising risks.

A RISING RISK

With the growth of electric vehicles (EVs) sales forecast [1] to reach 31.1 million vehicles by 2030, the demand for EVs to be transported by sea will also increase – as will the risks associated with shipping vehicles containing lithium-ion batteries.

Lithium-ion battery fires reach extremely high temperatures, produce toxic gases and are difficult to extinguish. Once a fire starts onboard it poses considerable safety risks to crew, cargo, the ship and the environment.

There have been numerous fires onboard car carrier vessels, including roll-on/roll-off (ro-ro) ferries, ro-ro car vessels and roll-on/roll-off passenger (ro-pax) vessels, some of which have been attributed to faults in the vehicles being carried on board. A vivid example of the possible exponential costs of an electrical fire was seen in February 2022 with the fire onboard the Felicity Ace, [2] a ro-ro car carrier vessel. That unfortunate vessel was carrying around 4,000 luxury vehicle (including EVs) worth hundreds of millions of dollars, [3] when she caught fire and subsequently sank two weeks later while she was being towed to safety.

Transporting EVs under the IMDG Code

The International Maritime Dangerous Goods Code (**IMDG Code**), based on the UN Recommendations on the Transport of Dangerous Goods, was developed to provide a detailed set of requirements covering the transport of dangerous goods by sea. It classifies substances into different categories and states how the substances should be packaged and handled. Countries that have signed up to the International Convention for the Safety of Life 1974 (SOLAS) must comply with the IMDG Code by incorporating it into domestic law, as Australia has done through the *Navigation Act 2012 (Cth)* and a series of Marine Orders.

Lithium-ion batteries and vehicles are covered by the IMDG Code and must be shipped as dangerous goods. However, Special Provision 961 exempts EVs from the IMDG Code that are transported on ro-ro vessels, and other vessels that have designated areas approved by the flag state for storing vehicles, meaning EVs can be shipped as non-dangerous goods so long as the other conditions specified in Special Provision 961 are met (including the lithium-battery transporting testing requirements criteria of UN 38.3 detailing pressure, temperature, crush, and impact tests). EVs that are shipped in container slots on a ro-ro vessel must be shipped as dangerous goods.

> **The uptake of electric vehicles is not without risk particularly during transportation.**

Vehicles that do not meet the conditions of Special Provision 961 must be declared as dangerous goods but may be exempted from the IMDG Code's requirements concerning the marking, labelling and placarding of the vehicles and containers if they meet the criteria of Special Provision 962. EVs that are shipped by container vessel must be declared as dangerous goods.

SOME CONCERNS WITH THE CURRENT APPROACH

There are concerns that ro-ro vessels are more exposed to fire and stability issues, compared to other vessels, due to their semi-open decks, cars being stowed closely together with no segregation guidelines other than lashing requirements, and the mix of new and second-hand cars (which can have heightened risks of pre-existing battery damage) they carry.

Given the unstable nature of lithium-ion batteries in some circumstances, and the fact that EVs are not required to be declared as dangerous goods when shipped by ro-ro vessels, the transportation of EVs on ro-ro vessels creates further safety risks. These risk scenarios include battery fires occurring because of onboard charging, manufacturing defects, pre-existing damage, or accidental impact during cargo operation or vessel movement in bad weather, and other battery fires in the surrounding area causing a chain reaction effect if a fire takes hold.

There is also presently no clear regulation governing the safe electrical charging facilities of the EVs onboard ro-ro and ro-pax vessels. This is a pressing issue given newbuild ferries are being equipped with battery charging infrastructure.

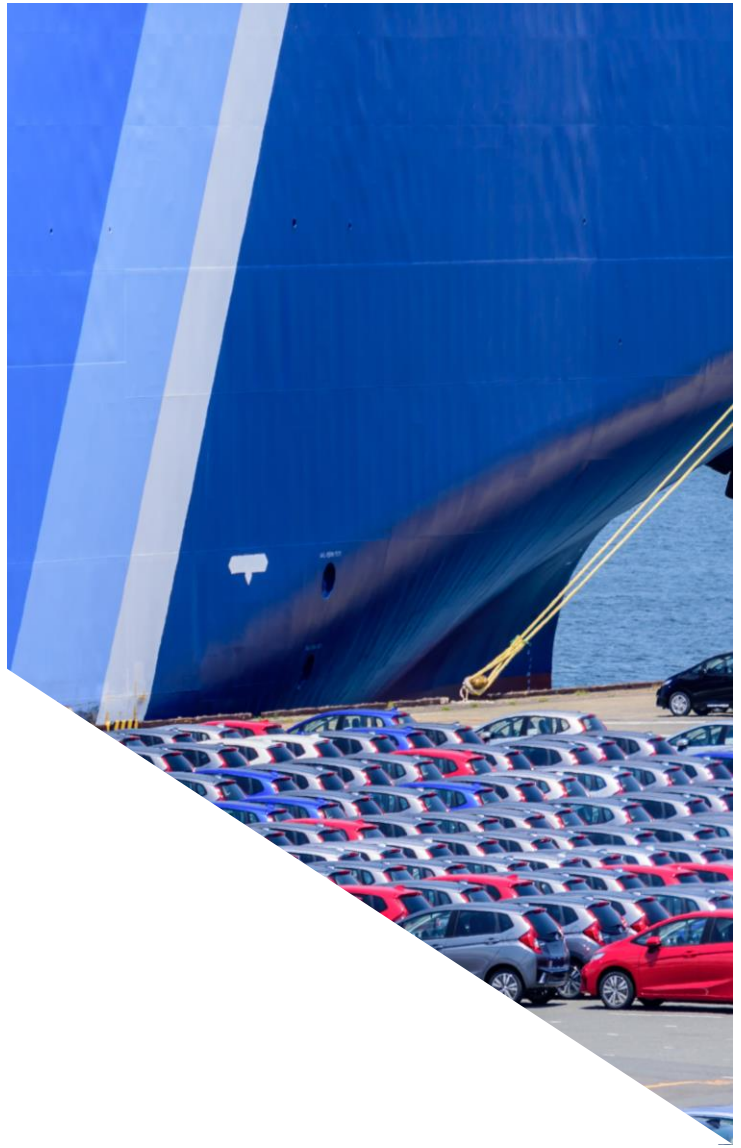
LIABILITY AND CLAIMS ISSUES FOR STAKEHOLDERS ACROSS THE SUPPLY CHAIN

Given the risks associated with transporting dangerous cargo, most shipping documents and contracts prohibit the shipment of dangerous goods in the absence of special arrangements being agreed to.

Under the Hague-Visby Rules/COGSA, which set out the liability regime for the carriage of most cargo to and from Australia, neither the carrier nor the shipowner is responsible for loss or damage arising or resulting from fire (Art 4 rule 2(b)), unless the fire is caused by the actual fault or privity of the shipowner or carrier.

However, under the Hague-Visby Rules (if incorporated into a charter party or bill of lading), carriers have an overriding obligation to exercise due diligence to make the ship seaworthy before and at the beginning of the voyage (Art 3 rule 1).

Under this rule, a lack of specialised firefighting equipment/systems or trained crew could be relevant and may result in the carrier being unable to rely on the defences available in Art 4 rule 2, including the fire exception. The requirement to make the ship seaworthy will also include cargo worthiness, and whether the vessel is fit to carry the cargo. With ro-ro vessels – given the concerns about high fire risks associated with EVs – carriers may find it difficult to defend allegations of unseaworthiness and show they exercised due diligence.



If carriers can prove they exercised due diligence regarding making the ship seaworthy, then the onus will be on cargo interests to prove the fire was caused due to the carrier's fault and privity. On that score, one of the issues is that the cause of electrical fires (and in our experience, particularly fires involving lithium-ion cells) can be forensically challenging to pinpoint, which raises difficulties with establishing the cause of the loss or damage to cargo. It may also be difficult for cargo interests to demonstrate that the ship was unseaworthy and that the unseaworthiness caused the loss or damage – particularly if the fire caused a total loss to the vessel or destroyed vital evidence.

Assuming the carrier satisfies the seaworthiness obligation of Art 3 rule 1 of the Hague-Visby Rules, goods shipped without notice of their dangerous qualities may render cargo interests liable for any damage to the vessel and other cargo.

There is an additional responsibility that the carrier must fulfill under Art 3 rule 2, which addresses the carrier's obligation to properly and carefully carry the cargo. Given the increased fire risks with EVs, cargo owners may be successful in their claim against a carrier if they can demonstrate that the carrier failed to correctly load, handle, stow, carry, keep and care for the cargo (provided that such cargo was correctly declared) in line with the IMDG Code.

Working out who bears liability under the Hague-Visby Rules may not be straightforward and can turn on what each party knew about the dangerous nature of the cargo. For example, while lithium-ion batteries have potentially dangerous characteristics, the precise nature of the risk may not be known.

In complex claims, resolution of who bears the risk for liability caused by the transportation of EVs will take time. It is also possible that not all the losses or damage will be claimable.

If carriers can successfully defend liability owed to the shipper, cargo interests may find that there are gaps in their insurance cover. For instance, cargo interests may only be covered under a cargo policy for physical loss or damage to the insured cargo from a fortuitous cause. If the dangers of lithium-ion batteries are a known risk, there may be scope to argue that the loss was non-fortuitous because the loss was caused by the improper packing or preparation of the subject-matters and excluded exclude such cover.

Furthermore, if third-party claims are brought against cargo interests there is a risk that cargo interests may be exposed by a lack of insurance cover (for example, with the exception of salvage and general average, charges third party liability is not covered by the standard Institute Cargo Clauses A/B/C (the terms on which a vast majority of marine cargo is insured) and cargo interests may be exposed by the lack of insurance cover. There may also be scope for hull and machinery and P&I insurers to deny coverage either due to the unseaworthiness of the ship, wilful misconduct of the insured or insufficient, unsuitable or defective packing.

CONCLUSION

Recent incidents highlight the risks of transporting EVs by sea, which has the real potential to expose various interests in the marine adventure and supply chain to significant losses and liability. The apportionment of liability between shipowners, carriers, cargo interests and their insurers raises complex issues, compounded by “blind spots” in the current rules for carrying EVs on ro-ro vessels, and forensic challenges associated with establishing the cause of fire involving lithium-ion battery fires.

If a fire eventuates, the potential damage can be widespread and high value, extending to damage or total loss to the ship and cargo, crew death or injury, and other residual damages, such as costly salvage, wreck removal and environmental clean-up costs.

Arguably, the risks associated with shipping EVs suggest there needs to be more analysis done so that mitigating steps can be taken by the various participants to the maritime venture. This may include better regulatory distinction between EVs and other cars as a class of cargo and associated carriage/stowage/packing requirements.

REFERENCES:

[1] *https://www2.deloitte.com/us/en/insights/focus/future-of-mobility/electric-vehicle-trends-2030.html*

[2] https://www.reuters.com/business/container-ship-carrying-volkswagen-vehicles-catches-fire-near-azores-2022-02-18/

[3] https://7news.com.au/news/world/cargo-ship-carrying-hundreds-of-millions-of-dollars-worth-of-luxury-cars-sinks-after-fire-broke-out-fortnight-ago-c-5914857

wotton kearney

Need to know more?

For more information please contact our marine + transport specialists.

Naraya Lamart
Partner (Brisbane)
T: +61 7 3236 8761
E: naraya.lamart@wottonkearney.com.au

Aisha Lala
Partner (Melbourne)
T: +61 3 9604 7916
E: aisha.lala@wottonkearney.com.au

Melissa Tang
Special Counsel (Sydney)
T: +61 2 8273 9904
E: melissa.tang@wottonkearney.com.au