

SAFE CARRIAGE OF LIQUEFIED NATURAL GAS FUELLED VEHICLES



**HIGHLY
FLAMMABLE**

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IN RECENT YEARS, THE MARITIME INDUSTRY HAS WITNESSED A GROWING INTEREST IN THE SHIPPING OF VEHICLES USING ALTERNATIVE FUELS, WITH LIQUEFIED NATURAL GAS (LNG) EMERGING AS A FRONTRUNNER. ENSURING THE SAFE TRANSPORTATION OF ALTERNATIVE-FUELLED VEHICLES IS CRUCIAL FOR SHIPOWNERS. THEY MUST PRIORITISE SAFETY, ADHERE TO REGULATORY FRAMEWORKS, AND IMPLEMENT BEST PRACTICES TO SECURELY CARRY SUCH VEHICLES.

The International Maritime Organization (IMO) sets regulations for the transportation of vehicles, including Alternative Fuel Vehicles (AFVs). Shipowners should consult their flag state for conclusive advice on these regulations. Additionally, the European Maritime Safety Agency (EMSA) provides guidance on the carriage of AVFs.

The transport of vehicles, including AFVS, is generally governed by the International Maritime Dangerous Goods (IMDG) code. The applicable UN number for LNG fuelled vehicles is UN 3166, which includes vehicles powered by flammable gas, fuel cells, and flammable liquid powered vehicles.

However, the IMDG code contains Special Provisions (SP) that may exempt loaded cargo from certain requirements of the IMDG code. SP 961 of the IMDG code states that vehicles are not subject to the provisions of the code if certain conditions are met, such as stowing the vehicles in designated spaces approved by the flag state and ensuring there are no signs of leakage.

Before accepting the cargo for loading, the storage method for LNG fuelled vehicles should be clarified with the shipper. You may need to consult with the ship's flag state and classification society to ascertain whether the storage method complies with SOLAS Chapter II-2 Regulation 21.1, which imposes additional requirements for ships transporting vehicles with compressed hydrogen or natural gas.

Shipowners and seafarers should undertake a structured risk assessment to evaluate the carriage considerations, cargo care, stowage, lashing requirements and any limitations.



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Consider the following important factors when carrying LNG fuelled vehicles on board:

- If LNG leaks, it can rapidly develop vapour clouds that can easily catch fire
- LNG is stored at very cold temperatures and contact with LNG or cold surfaces can cause cryogenic or freeze burns
- Relief valve and ventilation measures may be necessary during the voyage to address the potential rise in pressure inside the tank. Establishing holding time is essential to prevent the LNG vehicle from producing flammable gases or vapours
- Secure the cargo in accordance with the on board Cargo Securing Manual (CSM) and the Cargo Stowage and Securing (CSS) Code Appendix
- The shipper must provide detailed transport instructions, covering handling, additional lashing and securing requirements, and emergency protocols
- Crew members and personnel involved in handling LNG powered vehicles should undergo specialised training to understand the unique characteristics and handling of LNG as a fuel, along with emergency response protocols
- The ship must carry adequate emergency response equipment, including personal protective gear, firefighting equipment, and spill response kits

Shipowners requiring any further guidance are advised to contact the Britannia loss prevention team at:
lossprevention@tindallriley.com.