



Maritime and Coastguard Agency

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## **Ro-Ro Ships Vehicle Decks - Accidents to Personnel, Passenger Access and the Carriage of Motor Vehicles**

**Notice to all owners, managers, operators, masters, officers, ratings and shippers of vehicles, vehicle operators and passengers**

*This notice replaces MGN19*

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**PLEASE NOTE:-**

Where this document provides guidance on the law it should not be regarded as definitive. The way the law applies to any particular case can vary according to circumstances - for example, from vessel to vessel and you should consider seeking independent legal advice if you are unsure of your own legal position.

**Summary**

This guidance highlights the dangers to passengers and crew from moving vehicles during loading and unloading operations on board ro-ro ships. It also contains the following interpretation of United Kingdom and international regulations:

- 1) Specific guidance on issues relating to cargoes classified as dangerous according to the International Maritime Dangerous Goods (IMDG) Code that are being carried either for personal or business use by employees, passengers or contractors and that are not ships stores, is given in a separate MGN.
- 2) Ships stores and equipment which are classified as dangerous according to the IMDG Code shall be stored according to either the Code of Safe Working Practice or the fire precautions for that space.
- 3) Interpretation of SOLAS 1974, Chapter II-1 Regulation 20.3 given at paragraph 3, concerning access by passengers to the enclosed vehicle decks of ro-ro ships, including permissible exceptions to that regulation; and
- 4) Lists minimum safety conditions for fuel carried in the tanks of motor vehicles or alternative fuel systems.

This guidance is applicable to all United Kingdom ships and all ships within United Kingdom ports.

## **1 Introduction**

1.1 A vehicle deck is a potentially dangerous environment due to congestion and movement of vehicles, many with flammable fuel in their tanks or dangerous goods being carried as cargoes. There have been accidents and at least one death of a crew member. The length of time passengers spend on a vehicle deck should be kept to a minimum and access by crew should be restricted to those who need to be there.

## **2. Statutory Requirements**

2.1 Employers have a general duty to ensure, so far as is reasonably practicable, the health and safety of employees and other persons on board ship as required by the Merchant Shipping and Fishing Vessels (Health and Safety at Work) Regulations 1997, as amended.

2.2 The Merchant Shipping (Safe Movement on Board Ship) Regulations 1988, as amended, require that the employer and Master shall ensure that safe means of access is provided and maintained to any place on the ship to which a person may be expected to go. Additionally, the employer and Master are required to ensure that danger from the use or movement of vehicles and mobile lifting appliances is prevented so far as is reasonably practicable. Similar provisions are contained in The Docks Regulations 1988.

2.3 Employers (including consignors of cargo) are required by the Merchant Shipping and Fishing Vessels (Health and Safety at Work) Regulations 1997, as amended to be responsible for ensuring, so far as is reasonably practicable, safety and reduction of risk to health in connection with the use, handling, stowage and transport of articles and substances.

## **3. Passenger Access to Vehicle Decks**

3.1 The SOLAS Convention Chapter II-1 Reg. 20-3, requires that "In all ro-ro passenger ships, the master or the designated officer shall ensure that, without the expressed consent of the master or the designated officer, no passengers are allowed access to an enclosed ro-ro deck when the ship is under way."

Except for access in emergency situations, consent should be limited to the following circumstances:

.1 In order to facilitate the ordered movement of passengers towards the end of a voyage and only if the master considers it to be safe, passengers may be allowed access to the vehicle deck provided the ship is not more than two ship's lengths from its berth;

.2 individual passengers under special circumstances and only for brief periods when they should be accompanied by a crew member;

.3 people with disabilities that seriously affect their mobility, where special arrangements have been made prior to the journey; and

.4 ferries on very short crossings where all vehicles are stowed on an open deck in accordance with provisions agreed between the ferry operator and the Maritime and Coastguard Agency (MCA).

## **4. The Dangers of Accidents**

4.1 The speed of cargo operations combined with large vehicles being manoeuvred in a restricted space is clearly hazardous to personnel.

4.2 There have been accidents where seafarers have been killed or injured during cargo operations involving flat-bed trailers or similar being driven by shore-personnel, despite the presence of signallers and ship's staff.

4.3 Many of the vehicles now being loaded on ships are larger than was envisaged when the ships were designed and built and are of such design that the view from the driving position, particularly when manoeuvring in reverse, is severely limited. This increases the hazards due to the limited walkway space available.

4.4 A number of cases of petrol spillage from vehicles carried on ro-ro ferries have been reported. These cases and others involving the leakage of flammable liquids and gases could have given rise to serious incidents.

## **5. Safety Provisions**

5.1 The most effective method of ensuring the safety of personnel is to keep people and moving vehicles apart by preventing access to the decks during cargo operations. During normal operations this is impracticable but the fewer people that have access to the decks the less likelihood there is of accidents occurring. If access to these decks is necessary only the marked and authorised routes on decks and vehicle ramps should be used.

5.2 Personnel required to be on the vehicle decks as part of their job should be made aware of the dangers and the systems in operation for their safety, including the wearing of high-visibility clothing. Consideration should also be given to the need for the person in charge of cargo operations to communicate with drivers of vehicles and in particular the need to alert drivers quickly to any dangerous situation that may be developing.

5.3 Personnel involved in controlling vehicles should avoid standing directly between the vehicle being moved and any obstruction. The position chosen should minimize the risk of being trapped between the moving vehicle and an obstruction. Safety will also be enhanced by remaining in the driver's line of sight having regard to the driving position of vehicles in different countries. Personnel supervising vehicle deck operations are reminded that dangers are significantly increased when vehicles are driven on board at excessive speed.

5.4 Ship's staff should exercise special care where persons unaccustomed to vehicle deck operations require access to the deck. Car drivers and coach passengers are unlikely to be familiar with their surroundings or the operations involved, making them particularly vulnerable to the dangers.

5.5 Well illuminated, permanently marked and clearly signposted walkways should be provided for all those who require access to the vehicle decks both during cargo operations and when the ship is at sea. In addition, suitable barriers should be in place adjacent to doorways and exits that open directly onto the vehicle decks to prevent any person inadvertently walking straight onto the deck and into the path of a moving vehicle. Other measures such as deck mounted kerbs that force vehicles to maintain a safe distance from doorways and exits are also recommended.

5.6 Owners and operators are also strongly recommended to have suitable notices warning of the dangers at all locations where there is access to vehicle decks.

## **6. Petrol and diesel in the tanks of motor vehicles**

6.1 When vehicles are carried in cargo spaces which, under Merchant Shipping legislation or by equivalent arrangements agreed with the MCA, are suitable for the carriage of motor vehicles with fuel in their tanks for their own propulsion, it is important to ensure that on each vehicle:

- .1 The tank is not so full as to create a possibility of spillage; and
- .2 The ignition is switched off.

6.2 For diesel: the total capacity of the fixed tanks shall not exceed 1500 litres per transport unit (transport unit is a motor vehicle without an attached trailer, or a combination consisting of a motor vehicle and an attached trailer) and the capacity of a tank fitted to a trailer shall not exceed 500 litres. A maximum of 60 litres per transport unit may be carried in a container specifically intended for the carriage of diesel. (This is also a requirement of the European Agreement concerning the international carriage of dangerous goods by Road (ADR) paragraph 1.1.3.3 as amended). Quantities of diesel carried in excess of this quantity shall be subject to the full provisions of the IMDG code.

6.3 Spare cans of fuel should not be carried in private vehicles.

6.4 Fuel contained in the tanks of vehicles, boats, or machinery such as a mobile generators or refrigeration units which are carried as a load can only be used for their propulsion, or their operation. These fuel tanks, subject to the quantity limitations given above, together with batteries present the same hazard as motor vehicles. The following requirements must also apply:

- .1 The tank is not so full as to create a possibility of spillage.
- .2 The ignition is switched off.
- .3 Any fuel cocks between the engine or equipment and the fuel tank shall be closed during carriage.

6.5 Generators which contain fuel should be declared before loading. These units are permitted to be carried subject to the conditions set out in paragraph 6.4 above.

## **7. Motor vehicles propelled by liquefied petroleum gas (LPG) or Natural gas, compressed or refrigerated (LNG).**

7.1 Motor vehicles propelled by LPG should have gas storage and associated systems built to standards equivalent to the Road Vehicles (Construction and Use) Regulations 1986, as amended.

7.2 Motor vehicles propelled by liquefied petroleum gas (LPG) or liquefied natural gas (LNG), may be carried in the cargo spaces referred to in paragraph 6.1 provided:

- .1 The ignition is switched off; and
- .2 The gas is contained in a cylinder or cylinders with valves which should be closed when the vehicle is in position on board ship.

7.3 Only properly piped and fitted cylinders should be allowed. All cylinders of LPG or LNG should be properly secured.

## **8. Operational procedures**

8.1 To guard against the possibility of incidents involving the spillage of fuel the following precautions should be observed:

- .1 any vehicle showing visual signs of an overfilled tank should not be loaded;
- .2 passengers should not be allowed access to vehicle decks once a vessel is underway, (see paragraph 3 above and when dangerous goods are carried the provisions of paragraph 7.4.5 Stowage of cargo transport units in ro-ro spaces of the International Maritime Dangerous Goods Code);
- .3 conspicuous “No Smoking” notices should be posted, together with notices warning against engines being started before doors leading to ramps are opened and a crew member should be positioned to instruct passengers accordingly;
- .4 a fire patrol should be maintained on vehicle decks during the passage unless a fixed fire detection system and a television surveillance system are provided;
- .5 any spillage of petrol should be quickly cleaned up; sand boxes, drip trays and mopping up equipment should be provided for use on each vehicle deck;
- .6 a high standard of crew fire drill should be maintained;
- .7 in the case of specially constructed ships where there are vehicle decks dedicated to the carriage of motor vehicles in a drive-on/drive-off condition, allowance should be made for the fact that flammable vapours and noxious fumes are evolved during the process of shipment. To ensure adequate air circulation, ventilation systems serving the vehicle decks should be in operation during any loaded voyage. When vehicles are being loaded or unloaded the number of air changes may need to be increased to ensure that any concentration of vapours or noxious fumes does not become a hazard to health<sup>1</sup>.

## **9 Related Guidance**

9.1 Further general guidance on the safety of personnel working on the vehicle decks of ro-ro ferries is contained in Chapter 32 of the Code of Safe Working Practices for Merchant Seamen.

9.2 Further guidance is also in MGN 21(M) and the Roll-on/Roll-off Ships-Stowage and Securing of Vehicles Code of Practice (ISBN 0-11-552493-2).

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<sup>1</sup> The Control of Substances Hazardous to Health Regulations 2002 as amended (COSHH) apply to exhaust emissions and to the clearance of spillage in UK ports.

## More Information

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