

Operations Quality Manual for High & Heavy Vehicles











The following manufacturers have reviewed and approved the content of this manual for vehicle handling:







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Introduction

This Operations Quality Manual is an ECG publication prepared by the ECG High & Heavy Working Group, which was created as a sub-group of the ECG Quality Working Group to respond to the need for expertise in this specific niche of vehicle logistics.

The idea of establishing common quality standards for the whole industry was born from a commitment shared by the logistics service providers and the manufacturers to improve operational efficiencies by reducing duplication of activities due to the lack of harmonisation. Indeed, the standardisation of practices will also lead to a reduction in the damage rates and more rapid and effective handling of the vehicles. The present manual is an additional step on the path towards a broader harmonisation in the sector.

This manual is intended to be used as a management/supervisory guide when training staff on handling procedures. This should ensure a consistent approach. However, each manufacturer retains the right to demand a different treatment for their vehicles. This is why the manual often makes reference to the manufacturer's individual requirements. Such particular conditions have to be clearly defined, understood and adhered to by both parties signing the contract. Moreover, these quidelines do not in any way supersede regulations stipulated by various authorities. Copies of this manual can be downloaded free of charge from www.ecgassociation.eu. While translations into other languages will be available only the English version is official.

You can contact the ECG Secretariat with your comments and inquiries about this manual or the future activities of the High & Heavy Working Group at info@ecgassociation.eu or +32 2 706 82 80.

1. Definitions

For the scope of this Manual, High & Heavy Vehicles are defined as vehicles belonging to the following categories:

- Self-propelled Ro-Ro cargo:
 a. With rubber and steel tracks

 - b. With wooden rims
- 2) Not self-propelled Ro-Ro cargo

2. General Instructions

2.1. Clothing

- Personnel must wear clean working clothes and gloves at all times (no oil/grease
- Long sleeves and long trousers are obligatory. ¾ trousers covering the knees are allowed during hot months.
- No buttons, exposed zips or belt buckles.
- Wearing boots or shoes closed around the foot is obligatory. The shoes/boots must prevent slipping.
- Rings and other jewellery are not permitted, unless properly covered.
- It is forbidden to carry in one's pockets sharp objects (pens, tools, etc...) that could accidentally damage the vehicles.
- Working gloves must be worn when working on the truck, the wagon, the ship or the compound. However, they must be removed before entering the vehicle.
- Wearing high visibility jackets or clothes with high visibility elements in compounds and the use of safety helmets is subject to local laws, regulations or guidelines.
- If safety helmets are used for operations, they must be removed before entering the vehicle.
- Wearing safety glasses is mandatory when assembling wheels.
- If not specified above please apply the local safety regulations.

2.2. Handling

- Vehicles can only be driven by personnel that have received appropriate training and have read this manual. Subcontractors should also receive training and comply with the instructions of this manual.
- Vehicles can be driven only for the purpose of loading/unloading, parking and for working through the schedule of care measures.
- It is recommended for the manufacturers to provide the logistics service providers with the dimensions and weight of the whole product range beforehand, to guarantee appropriate preparation for the cargo to be transported and avoid safety and liability problems.

2.2.1. Use of the vehicle

 Vehicles must be driven at moderate speed in all situations. For an indication of the speed limit particular to a given transport mode, please refer to the corresponding section of this manual.

Vehicles must be driven in such a manner as to minimise the possibility of damage. In particular, it is forbidden to:

- Rev up the engine.
- Let the engine warm at idle speed.
- Set off rapidly with spinning drive wheels.
- Drive on the starter motor.
- Overtake other vehicles.
- Drive with flat tyres.
- Remove the ignition key whilst the vehicle is in motion.
- Drive with windows covered with snow or ice; snow and ice should be removed only
 with plastic scrapers or de-frost spray and never by letting the engine run for an
 excessive time to warm the windows.
- Drive with open doors.
- Operate the ancillary machinery.
- Operate machinery without proper training.
- Carry passengers.
- Use wipers on a windscreen covered with ice or snow.

Moreover, the driver/jockey must immediately stop the engine if an operational fault occurs, if a strange noise is detected or visual/auditory warnings are present (on the dashboard). It is forbidden to operate the vehicle if visual/auditory warnings are present (except safety and reversing alarms).

Vehicles and their equipment must be used only to such an extent and in such a manner that is necessary. The following are strictly forbidden unless the manufacturer has explicitly and in writing authorised it:

- To lean, stand or sit on the vehicles.
- To eat, drink or smoke in/near the vehicles.
- To remain in the vehicle longer than necessary.
- To place foreign objects on/in the vehicles.
- To use any electronic equipment (audio, GPS, telephone, etc...), unless necessary for driving.
- To write upon the vehicles.
- To attach labels or stickers on the vehicle, unless the manufacturer has indicated clearly delimited approved areas.

- To use one vehicle for towing or pushing another one.
- To use vehicles as shuttles or for transporting material.
- To detach/remove protection material (such as seat protection).
- To enter/exit the vehicle by other doors than the driver's.
- To wear headphones and listen to music/radio.
- To use cell phones and transmitters while handling/driving vehicles.

2.2.2. Rules to be respected when leaving the vehicle

Upon leaving the vehicle for storage/transport, it has to be checked whether:

- The doors, windows, roof and cowl are closed.
- Wing mirrors are folded in.
- Parking brake is applied (for long storage in compounds, hand brake must be released). If specific conditions require not toapply it, please consult the manufacturer instructions.
- Electric main switches are left in the "off" position.
- Safety locking system is secured (excavators).
- Bucket is lowered to the ground (excavators, wheel loaders, backhoe loaders) and protected to avoid scratches.
- All storage compartments are closed to avoid any power drain on the battery during
- Switches and operating controls are switched to off/neutral position.
- The vehicle is not parked on inflammable materials, such as dry grass or leaves.
- The seat covers and other protection material are in a proper position.
- Remove key from ignition and store according to manufacturer guidelines.

2.2.3. Rules on non-starters

- First check the manufacturer's instructions.
- If the vehicle doesn't start because the battery is flat, it must be jump started using an auxiliary battery, never another vehicle. The correct voltage must be applied.
- Only the starter battery may be used for jump starts.
- To connect the cables follow the manufacturer's instructions.
- Jump starting cables must be handled with caution to prevent damage to the vehicle.
- If the vehicle needs refuelling, add a sufficient amount of the correct fuel type (maximum 25 % of the tank for sea transport).
- If the two previous methods fail, contact the manufacturer of the vehicle or its representatives.

- A vehicle must never be jumpstarted/refuelled by anybody who has not received relevant training. Whenever possible, non-starters should be handled by specialised personnel and not drivers.
- It is recommended to replace a flat battery with a new one before loading the vehicle on a transport means (road transporter, rail wagon, ship or barge). However, this rule must be clearly stated and agreed to by the parties by means of a written contract.

2.3. Inspections

- An inspection of the vehicle has to be performed at each handing over point.
- If the circumstances render the inspection difficult (dirt, snow, etc...), it has to be noted on the inspection documents.

2.4. Exceptional damage reporting

- The central customer must be informed of damages incurred as a result of serious force majeure incidents as soon as they are detected.
- The following party in the logistics chain should ask the central customer for instruction regarding the forwarding of the damage vehicle.

5. Water Transport

In general, only Ro-Ro vessels and inland waterway barges can be used for transporting new vehicles. The security and quality rules that follow apply on all this type of vessels.

5.1. Ro-Ro vessels

5.1.1. Equipment

Ships

- Ships used for transport of vehicles must be in good physical condition. The manufacturer has the right to impose stricter conditions and refuse those ships that do not meet them.
- Ships must conform to internationally recognised quality standards.
- The decks and ramps of the ships must be constructed in such a way that there is sufficient distance between inner pillars for easy, damage free loading and unloading.
- Any gaps in the decks or between ramps and decks, as well as any vertical differences in height must be reduced to a minimum to avoid damage to tyres.
- It has to be checked that no pipes or equipment (push-cars, etc...) are leaking oil.
- All elements on/off the decks should be rust free. In no case should rusted elements enter into contact with the transported vehicles.
- The holds in which the vehicles are stored must be clean, odour free and adequately ventilated. All traces of chemical or greasy substances must be removed.
- Decks and ramps must be well lit. All obstacles (obstructions, stanchions, etc...) must be painted or marked in safety colours. The construction elements most likely to be accidentally run into with vehicles must be padded to minimise the possibility of serious damage. Maximum clearance should be clearly indicated.
- All connecting and access ramps must be placed at a sufficiently low angle to enable easy access and prevent damage to the under body of the transported vehicles.
- All connecting and access ramps should offer good grip but may not be sharp edged. Additionally, it is recommended to affix anti-slide tapes to driveways in curved areas.

Ship equipment

- Ship and quay operations must maintain adequate stocks of appropriate fuel to enable non-starters to be loaded and unloaded without problem.
- Loose chains must be properly tensioned and not touch the underside of the vehicles.

- The vessels must be equipped with a sufficient number of vehicle lashings and wheel
 chocks in good technical condition. The lashings must be of sufficient strength including
 an adequate safety margin, to secure the vehicle being transported.
- Metal parts of the lashings should be protected to prevent damage.

5.1.2. Loading/Unloading

The following rules are specific to the loading/unloading process. The rules on vehicle handling listed in the general section (Section 2.2.) also apply. Personnel must also be trained on these instructions before being allowed to proceed with loading, unloading or other handling.

Before loading or unloading

- Ventilation in the hold should be switched on
- Adequate preparation for the tracked units must be done (e.g. rubber mats)
- It is the responsibility of the stevedore company and/or ships representative to organise a meeting involving the duty officer of the ship and the port captain (or equivalent) to draft a loading/stowage plan. This plan then has to be followed throughout the loading process.
- Before loading, enough driveways and walkways have to be clearly designated and marked, according to the ship's safety requirements.
- The ramps and decks must be set in the proper position for loading/unloading and the internal doors must be opened.
- Decks and ramps must be freed of all loose equipment. Lashings must be secured or stored. Lashings must never be left hanging from the bulkheads/stanchions without being secured.
- Make sure that the vessel is set up appropriately for the cargo.

During loading or unloading

- All loading/unloading operations must be co-ordinated by an experienced supervisor.
- Ramp angle should be observed during loading and unloading (as it may change because of the tide and the change in ballast when vehicles are unloaded).
- Vehicles should preferably be loaded in groups of similar dimensions to facilitate their positioning on the loading deck.
- A safety distance adapted to the speed must be kept between the preceding and following vehicle when driving on the ramps and decks.
- Inside the ship, speed must be limited to such an extent as to prevent damage.
 Moreover, drivers have to comply with the shipping line's imposed speed limits.
 However, ramps should be negotiated at a sufficient speed to prevent wheels from skidding on the wet surface.
- Headlights must be turned on before driving on board the vessel.

- Vehicles with pneumatic/air suspension must be driven in the highest position and stored in the lowest.
- All vehicles stored on the vessels must be protected from water spray. Any exception to this rule must be accepted by the manufacturer by way of a written contract, agreement or instruction.
- The vehicles should be loaded in a way that permits to unload them forward.
- During loading/unloading, vehicles should be driven forwards. Excessive manoeuvring and reversing should be avoided.
- As far as possible, vehicles should be stowed longitudinally. This way the risk of the vehicles being displaced during rolling movements of the ship is minimized. If transverse (athwartships) storage cannot be avoided for some vehicles, special security (lashing) measures must be undertaken, according to the lashing instructions in section 5.1.3.
- Manufacturer's recommendations on which vehicles can be stored on ramps or transversely must be respected.
- New vehicles must be stored separately from other cargo and/or used vehicles.
- It must be checked that the following distances are kept, unless otherwise agreed with the manufacturer:
 - o Between the vehicles, end to end: a minimum of 50 cm;
 - o Between the vehicle's end and the ship's superstructure: 50 cm;
 - Between the vehicles' sides: 50 cm;
 - Clearance between the vehicle's roof and the upper deck: 10 cm;
 - Between the vehicle (passenger's side) and the ships superstructure: 15 cm;
 - Between the vehicle (driver's side) and the ship's superstructure: 60 cm;

After loading or unloading

- After loading/unloading, vehicle's headlights must be switched off immediately.
- When leaving the vehicle after loading, it must be checked that it is not standing on any chains, wires, moorings or any other object that could damage the tyres. Wheels must be left in the straight position.
- Vehicles that can't be unloaded under their own power, even after refuelling and/or jump-starting, must be towed by a specialised vehicle and following manufacturer's instructions. Under no circumstances may a broken-down vehicle be towed by another vehicle from the load.
- After loading, vehicles must be lashed according to the procedures defined in the following section.
- Lashings should be inspected and corrected (re-tensioned) in case of necessity at least every day during the first three days and then every third day. If heavy weather is expected, daily checks should be re-established.
- Vehicles must be left with the handbrake (parking brake) applied.
- Bucket must be lowered to the ground and protected to avoid damage.
- Switches and operating controls must be switched off or in neutral position
- Safety locking system must be secured.

 Vehicles should be kept unlocked during transport. Keys must be removed from the ignition and stored according to manufacturer's instructions.

5.1.3. Lashing

The general rule is that all machines must be secured correctly on the carrier. The securing must be done by a combination of wheel chocks and lashings (or tie-down, if applicable). It is the transporters responsibility to make sure that they are following the international and respective country's legal regulations and that loaded machines cannot move during transport.

The following rules must also be applied:

- Lashing is only allowed on clearly marked and specifically designed lashing points (for construction machinery).
- Hooks are never to be attached directly to the chassis (for construction machinery), unless explicitly agreed in writing with the manufacturer.
- All vehicles transported on a ship must be properly lashed.
- Only special lashings for securing heavy vehicles can be used.
- Each vehicle must be secured using a minimum of 4 lashings (use wheel chocks when it is not positioned longitudinally).
- Lashings must be handled in a way to avoid any damage to the transported vehicles.
- The lashings used to secure a vehicle must not touch any other part of the vehicle than the lashing point or any other vehicle after they have been properly tied.
- A vehicle must be lashed immediately after it has been parked for storage and unlashed only after reaching the port of arrival.
- Lashings should be tensioned enough to prevent the vehicle from moving, but shouldn't tighten the vehicle down on its suspensions.

5.1.4. Containerised cargo

From 1 January 2012 vehicles in containers are classified as Dangerous Goods, see IMDG Code UN 3166 and its Special Provisions.

Lashing procedures inside a container

The general rule is that all machines must be secured correctly on the carrier. The securing must be done by a combination of wheel chocks and lashings (or tie-down, if applicable). It is the transporters responsibility to make sure that they are following the international and respective country's legal regulations and that loaded machines cannot move during transport.

The following rules must also be applied: