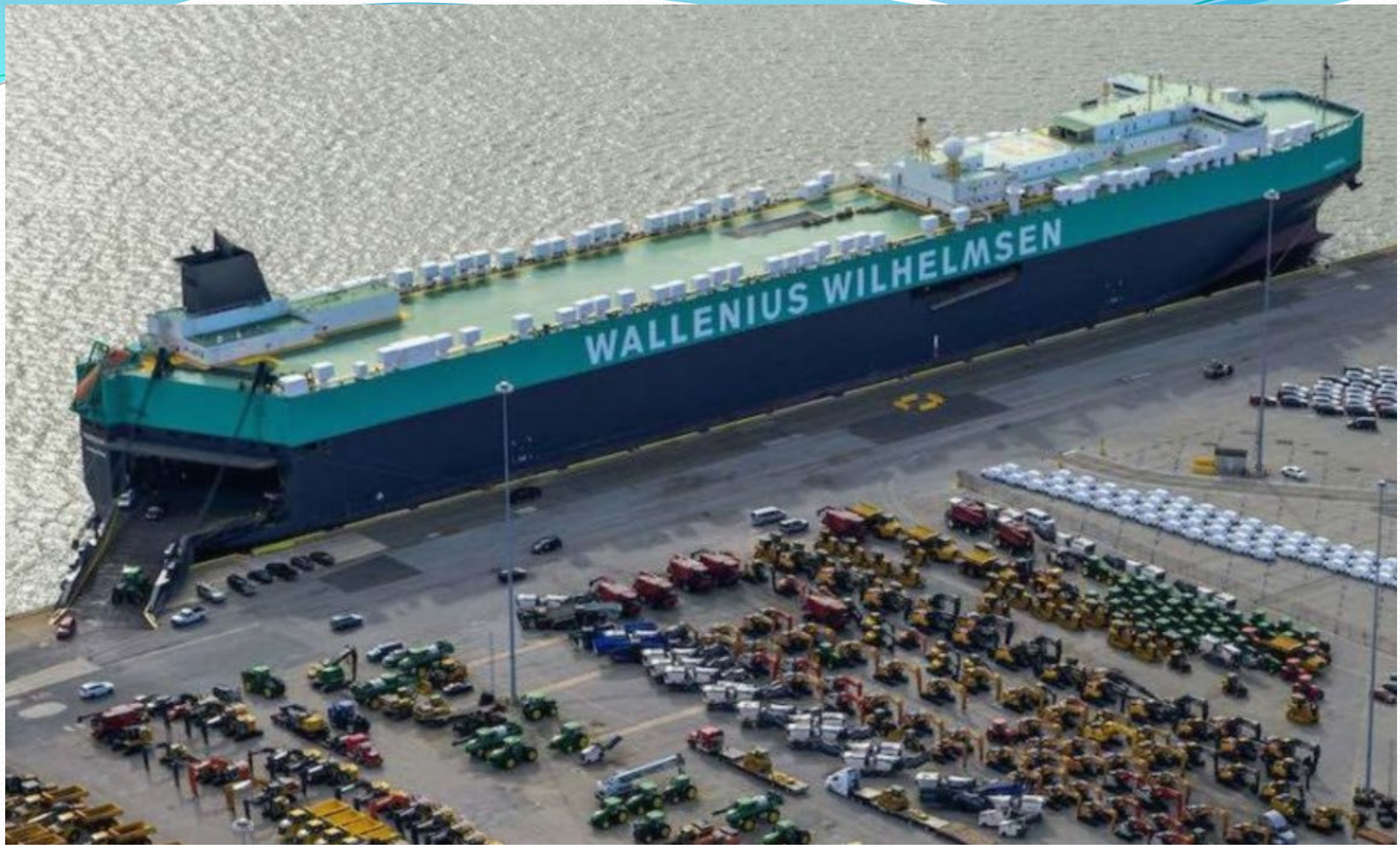
Roro lastning/surrning


WALLENIUS WILHELMSEN

Following to be used as Guideline to determine number of chains required on each side (Port as well as Starboard) of cargo to deck.

GUIDELINE.

Number of chains (MSL 7,5 ton) to be used on **EACH SIDE** (Port as well as Starboard) of the unit to deck.

Total Weight of cargo and cargo carrier (Mton)

10	15	22	30	37	45	53	60	68	75
2	3	4	5	6	7	8	9	10	

Number of chains to be used on **EACH SIDE** (P and SB) of the unit to deck.

Total Weight of cargo and cargo carrier (Mton)

75	83	90	98	105	113	120	128	135	142
11	12	13	14	15	16	17	18	19	

Number of chains to be used on **EACH SIDE** (P and SB) of the unit to deck.

EXAMPLE: Cargo weights 60,5 Mton and Cargo Carrier (Rolltrailer) 10 Mton 60,5 + + 10 = 70,5. 70,5 Mton gives 10 chains on each side a total of 20 chains.

GENERAL

AS OUR CUSTOMERS CARGO IS OUR MAIN CONCERN

It is important to remember that the manufacturers have firm demands on how their vehicles are to be handled.

To meet them, it is in all our interests to handle the vehicles in the best possible way.

"Thorough supervision during loading and discharging is essential.

Careless supervision can quickly lead to deterioration in the stevedore's performance and a potential increase in damage."

Pre-load/discharge rampmeeting

A short meeting should be held before work begins in order to highlight the operational guidelines and to ensure the safety of the operation.

Stevedore foremen

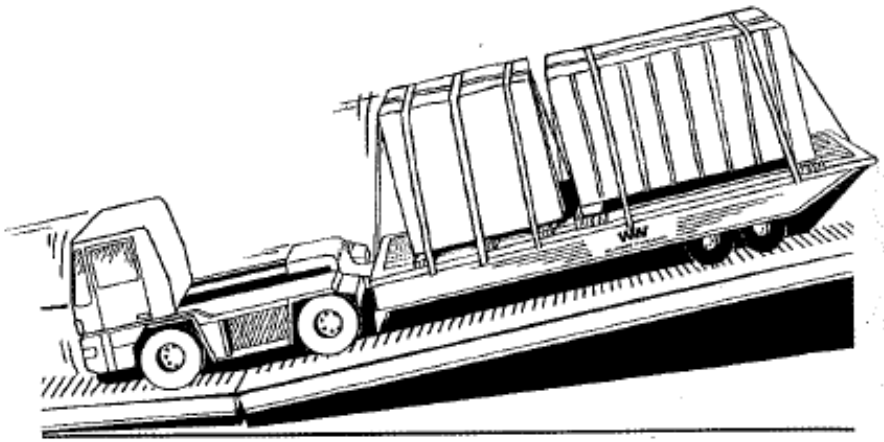
- Foremen must be fully aware of Wallenius Wilhelmsen Cargo Handling Instructions.
- Be available onboard all the time of cargo operation.
- Wear distinctive clothing for easy identification.
- Always give clear advice and instructions.

Stevedore labour

Before the cargo operation starts, all longshoremen should be assembled and given clear instructions regarding:

- Flow-stow system.
- Damage prevention issues for specific cargo to be handled.
- Stowage plan.
- Cargo exceptions.
- Missing parts, e.g. window wipers, gear knob, radio, etc. must immediately be reported to duty officer and foremen.
- Speed- and driveways onboard and at the terminal.

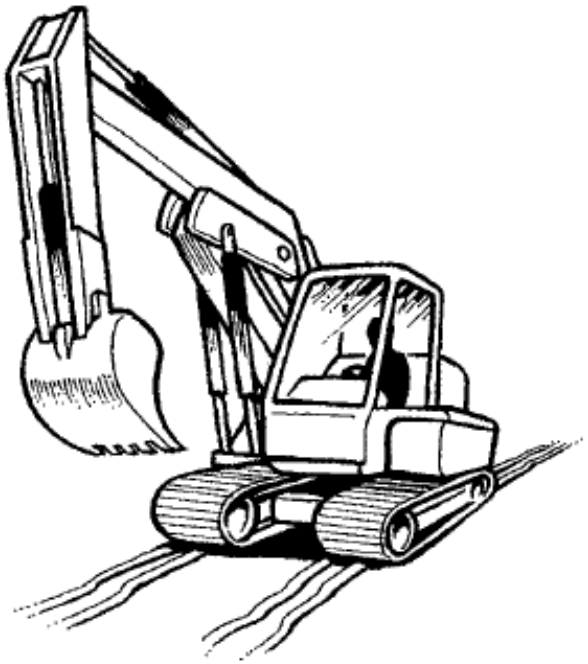
HEAVY ROLLTRAILERS DRIVING ON RAMPS



- Heavy rolltrailer must always be reversed up ramps.
- Keep trailer close to ground. In order to avoid grounding of trailer 5th wheel to be adjusted when going up and down ramps.
- No turning on Ramps/Slopes.
- Approach all ramps/bumps and dips at right angles (90°).

TRACKED UNITS

should be driven on board and ashore on old ropes/dunnage/rubber mats.



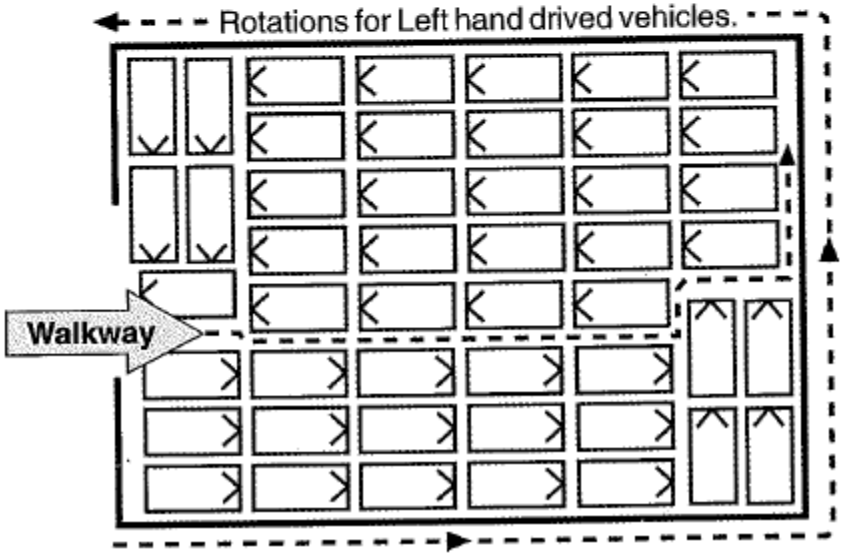
OLD ROPES

STOWAGE

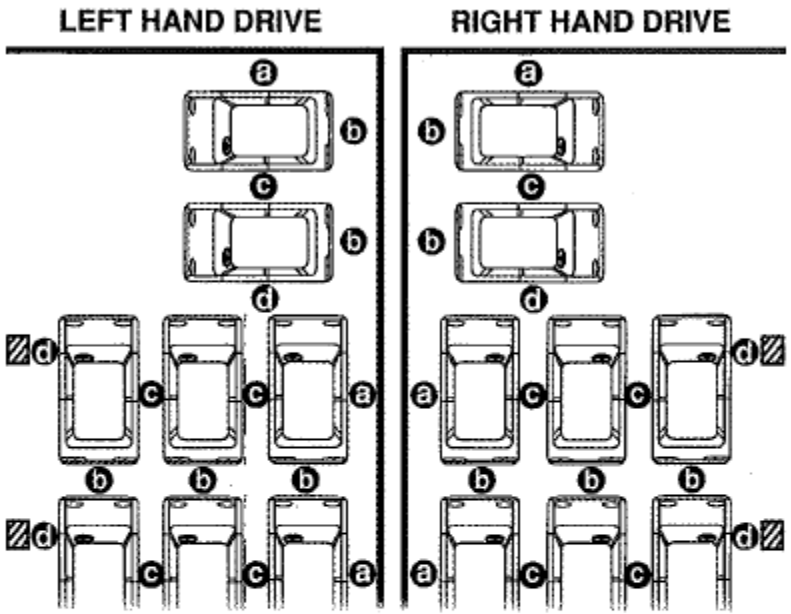
VEHICLES ARE TO BE STOWED IN ACCORDANCE WITH "FLOW-STOW" SYSTEM

The two basic principles of the system are:

1. Drivers doors should always open into clear space.
2. Vehicles should only be driven forward upon arrival at the destination. Reversing of short distances only should be undertaken in the loadport.



RECOMMENDED STOWAGE DISTANCES



a = 20 cm Car side to fixed object.

b = 30 cm Bumper to bumper or fixed object.

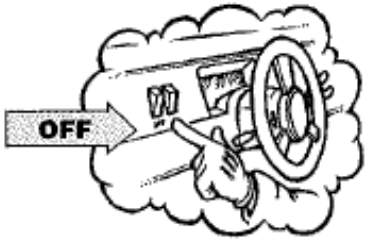
c = 10 cm Side to side. Mirrors never overlapping.

d = 50 cm Driver's side of KEY car to car or fixed object.

WHEN PARKING ENSURE THAT

The parking brake is fully engaged.

Windows and sunroofs are closed.



All swiches are "off". Key out of ignition and placed at predefined location.

Gear is in "**1**" position for manual, and "**P**" position for automatic cars.

WHEN OPENING DOORS

Be careful when opening doors.

PARKING BRAKES

The effect of vehicles breaking loose is always serious and can easily become disastrous.

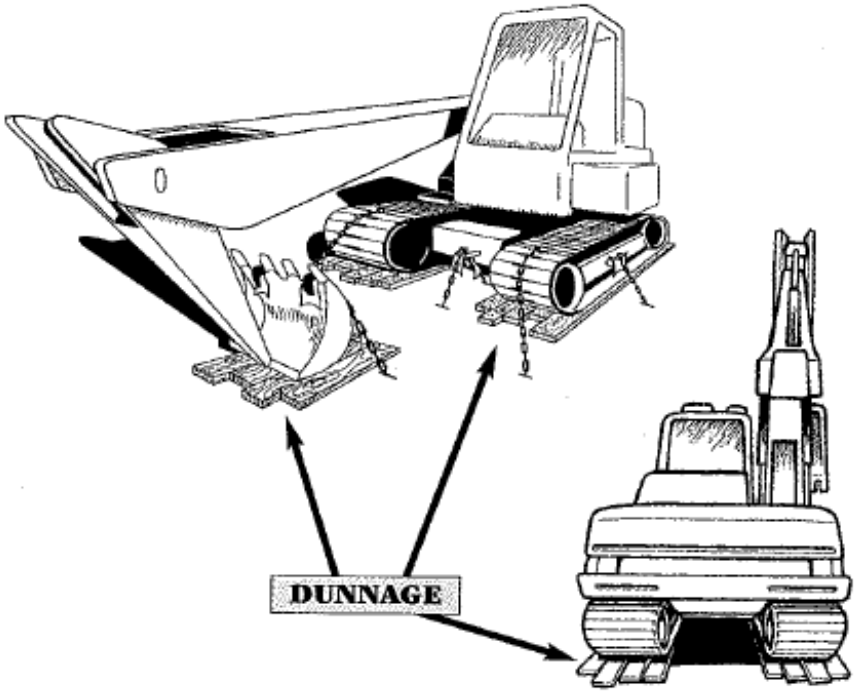
"Effective checking that parking brakes are engaged is of utmost importance"

If vehicles are found without the parking brake engaged, notify stevedoring foreman

IMMEDIATELY.

DUNNAGE

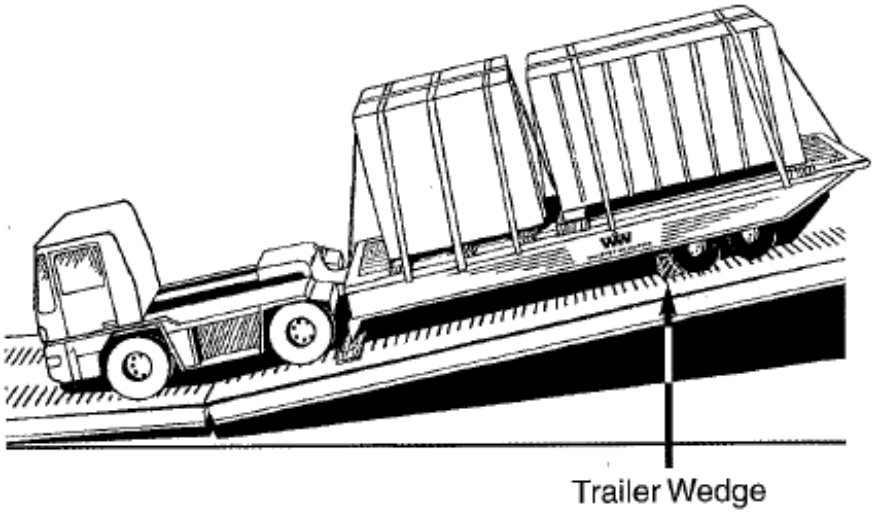
Once in final stowage position, all steel pieces should rest on dunnage/rubber mats/timber.



Where chains attached/touches painted areas, the area must be protected with rubber pads; rags or similar.

NEVER LOAD STEEL ON STEEL!

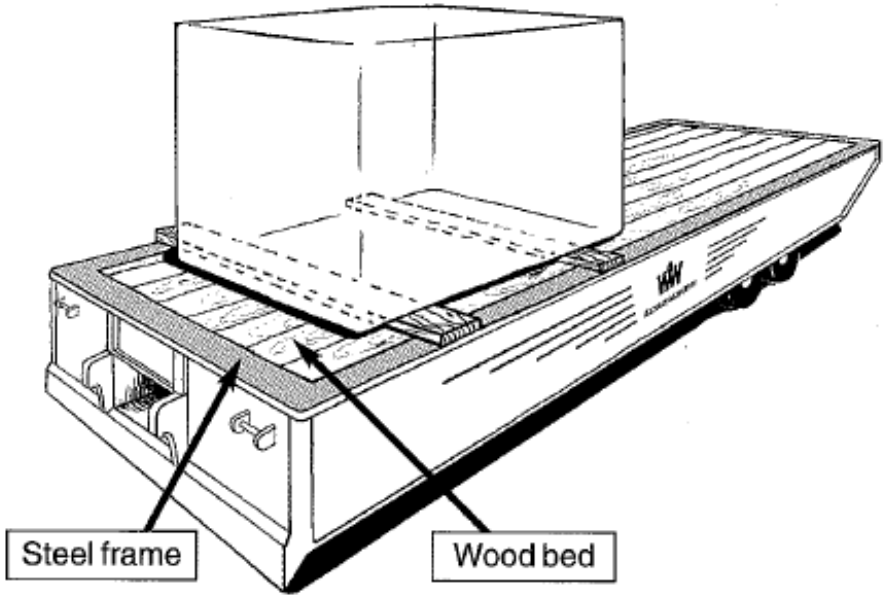
ROLLTRAILERS STOWAGE IN RAMPS



- When stowing a Roll trailer on a ramp, ensure that trailer is adequately lashed, with sufficient number of lashings and wedges placed in front of the wheels, before removing the gooseneck.
- Gooseneck end shall always rest on anti skid material (Rubber mats or timber).
- When discharging never remove lashings and wedges, in front of wheels, before gooseneck is connected.

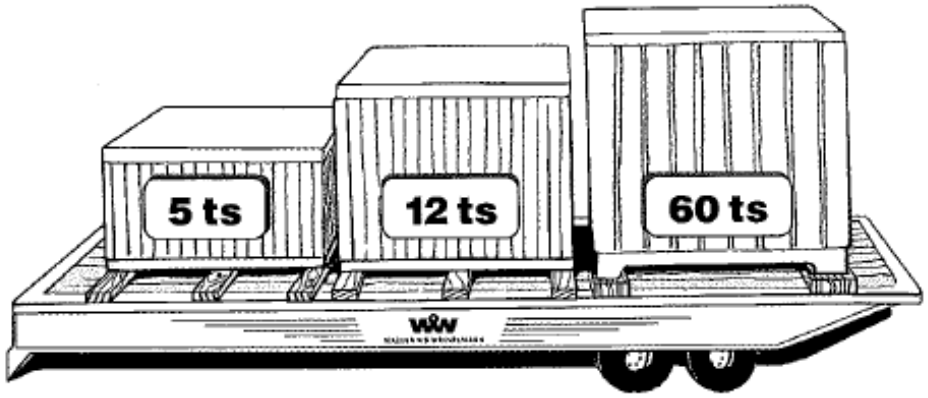
CARGO ON ROLL TRAILER

Supporting beams
to rest on trailer steel frame.



LASHING

CARGO ON ROLL TRAILER



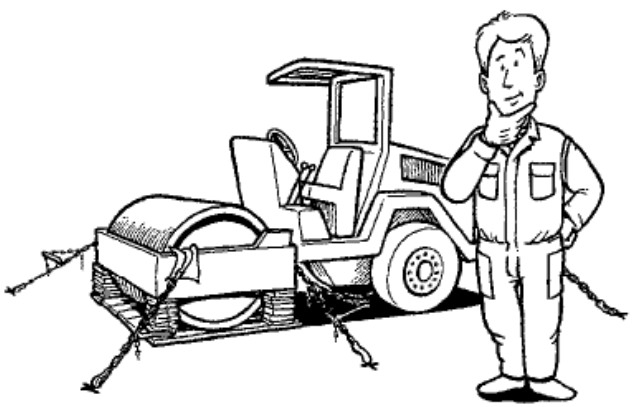
Majority of weight
to be placed at wheel end.

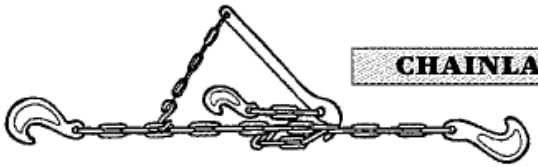
"Lashing of cargo must always be done to the satisfaction of ship's command, as the master is responsible for the cargo and seaworthiness of the vessel."

NOTE: Carlashing rings and holes must not be used for chainlashings.

*The total of the MSL values in Metric Ton of the securing devices on each side of a unit of cargo (Port as well as Starboard) should equal the weight of the unit in Metric Ton.**

MSL = **M**aximum **S**ecuring **L**oad





CHAINLASHING

* See appendix A (coverpage) for guidelines.

ALL CARGO LASHED AND SECURED

It is of utmost importance that all units are properly lashed.

Vessels have been known to leave ports and later crew find up to hundreds of vehicles unlashed or poorly lashed.

The importance of this is shown by:

"One single moving unit may cause damage up to ten nearby vehicles, or even more"

THE IMPORTANCE OF SUFFICIENT NUMBER OF LASHERS

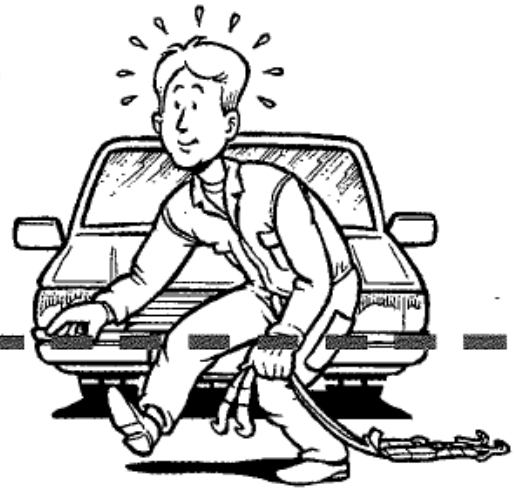
Insufficient number of lashers will slow down the total operation.

The lashers should preferably lash at the same tempo as the loading, to avoid lashers moving around exessively deep into the stow with risk of higher amount of scratch damages.

And the fact that a proper supervision over the lashing operation is more difficult to perform, if the lashers are deep into the stow are obvious.

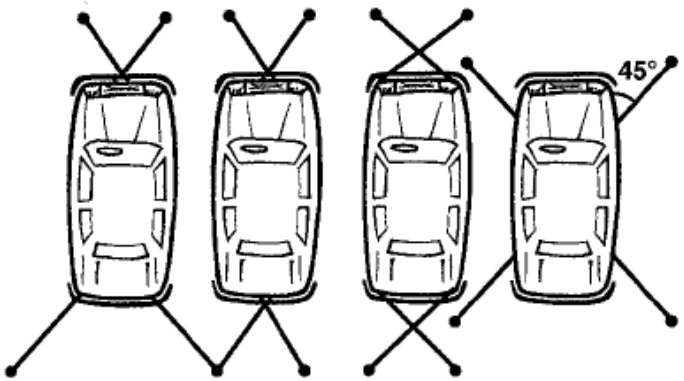
Never move bundles of lashings, or throw lashings between cars.

Lashings should always be carried below bumper level.



When lashing and unlashing, never touch/lean or put anything on the cargo you are working with.

CORRECT LASHINGS

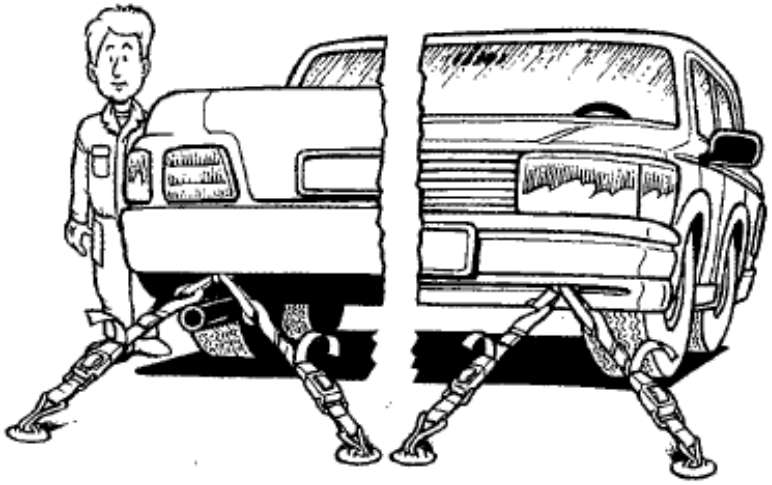


The lashing should lead away from the tie down point at approx. 45 degrees angle vertically and horizontally.

Acceptable angles within 30–60 degrees.

Lashings must only be fixed to the designated lashing points on the vehicle.

NOTE: On some car models it may be necessary to use a web sling between the lashing and the lashing point, in order to minimize the risk of damage to spoilers.



CAR LASHING

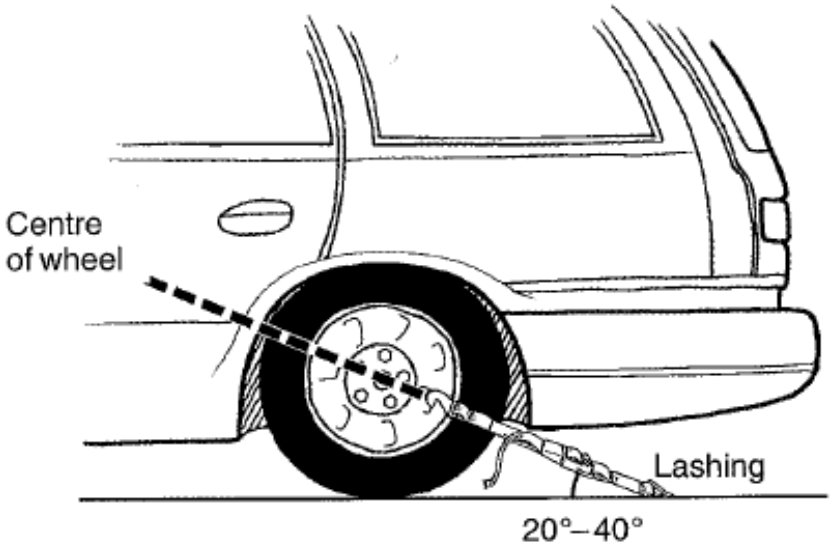
WEB SLING

WHEEL-RIM LASHINGS

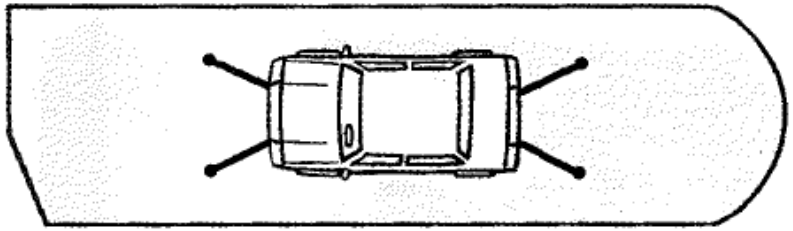
Wheel-rim lashings (4 o'clock and 8 o'clock). The lashings must be attached to the wheel so that direction of pull passes through the center of wheel.

STEEL-RIM: Attach lashings directly.

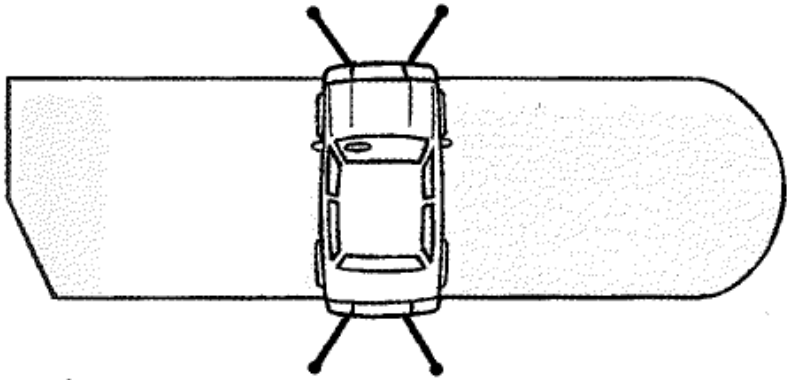
ALU-RIM: Websling between wheel spoke and lashings are needed.



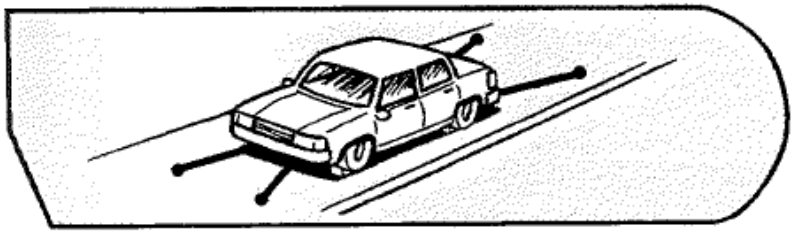
LASHING CARS



4 lashings to cars stowed in fore and aft direction.

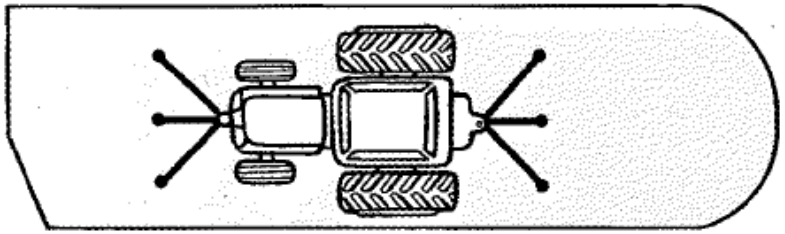


4 lashings to cars stowed athwartships, and wedges are to be put under 2 of the wheels.

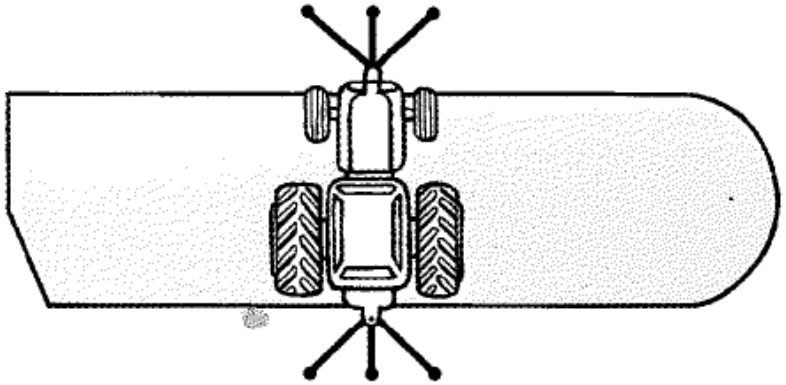


4 lashings to cars stowed on ramps, and at least 2 wedges shall be put under the wheels.

LASHING OF SMALL TRACTORS ETC, WEIGHT BELOW 3 MT

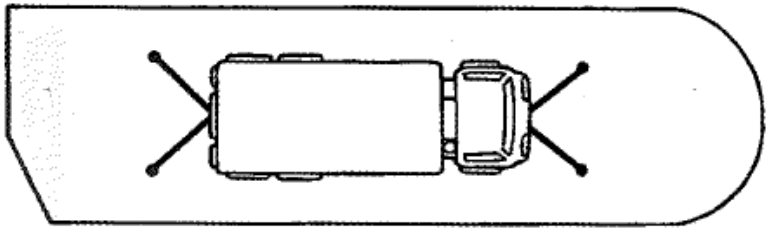


3 carlashings in each end to vehicles stowed in fore and aft direction.

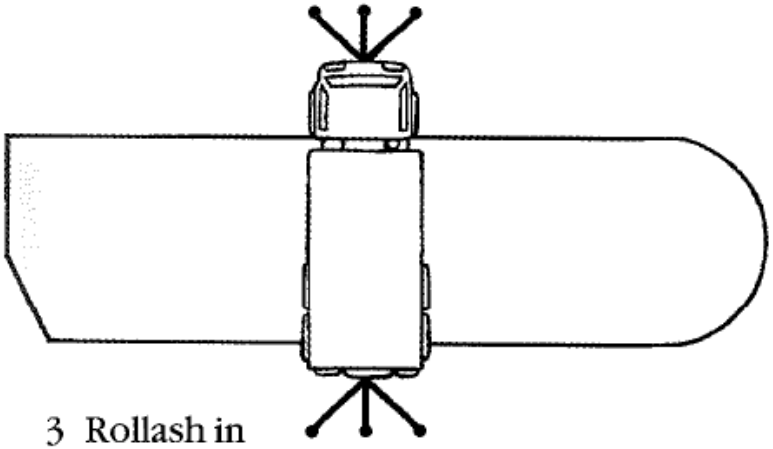


3 carlashings in each end to vehicles stowed athwartships.

LASHING OF LARGER TRACTORS, TRUCKS ETC, BETWEEN 3 MT AND 7 MT



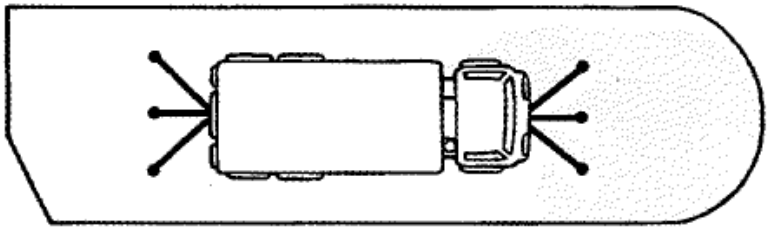
2 Rollash in each end to vehicles stowed in fore and aft direction.



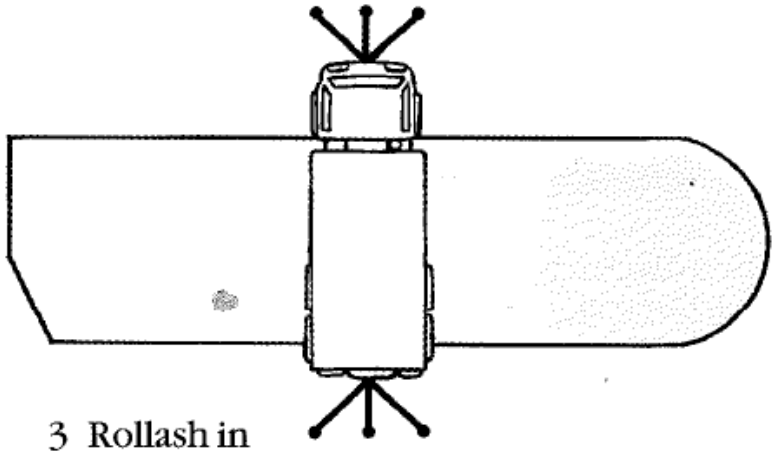
3 Rollash in each end to vehicles stowed athwartships.

ROLLASH

LASHING OF LARGER TRACTORS, TRUCKS ETC, BETWEEN 7 MT AND 10 MT



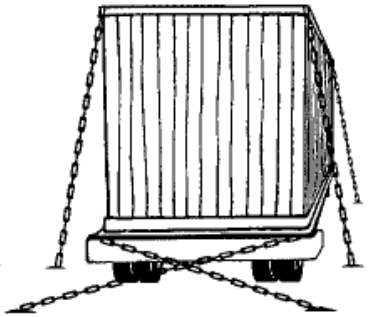
3 Rollash in each end to vehicles stowed in fore and aft direction.



3 Rollash in each end to vehicles stowed athwartships.

When discharging, it is most effectual to drop the lashings on the deck and collect them as the cars in front are driven away.

STOWAGE AND SECURING OF ROLLTRAILER



Correct lashing

Diagonal lashing

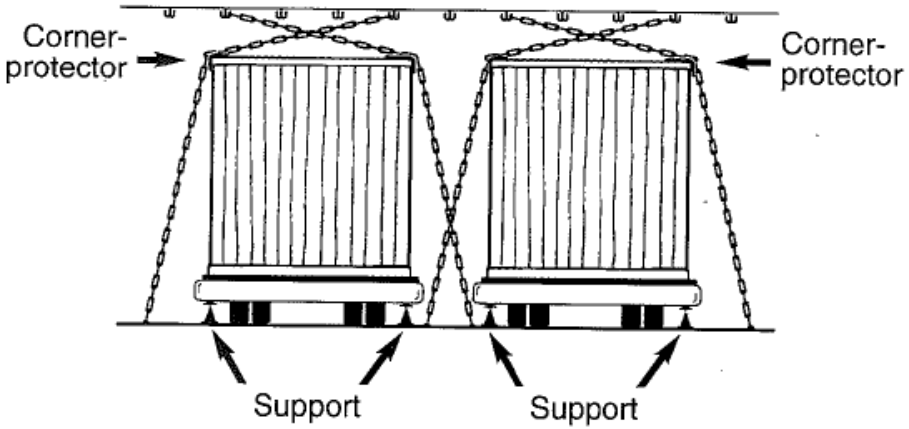
Always ensure that trailer and cargo is secured against tipping and sliding.

Lashing shall as far as practical be arranged from the cargo to deck.

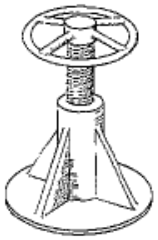
Diagonal lashing are not a sufficient lashing method to prevent sliding and/or tipping of cargo.

STOWAGE AND SECURING OF ROLL TRAILERS

Securing of cargo to the deck above must **NEVER** take place if that deck or deck section is liftable.



For support use jacks or timber.



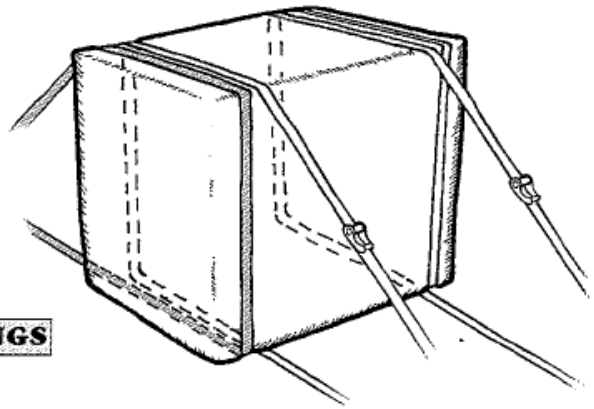
JACKS

BREAKBULK

TOP OVER.

Top over lashings are not preferable, as this method requires an impractically large number of lashings.

Preferred method is to use loop lashing, when possible.



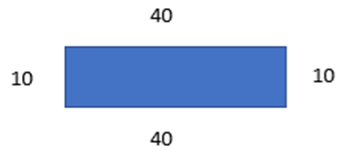
LOOP LASHINGS

It is up to the Cargo Superintendent and/or vessel command to evaluate if the content in a sealed or closed case is properly secured onto the case and that proper lashings can be attached direct to the unit, not only the case.

- https://youtu.be/ToH8TgWX-lY?t=5

Information

Annex 13 är i första hand tänkt som en vägledning vid säkring av icke standardiserat gods. När det gäller exempelvis trailers i RORO-fartyg ska man följa anvisningarna i manualen.
För icke standardiserat gods kan man tänka att påkänningarna är störst i tvärskeppsled och därför bör ju också surrningarna till övervägande delen verka i den riktningen. Som sjöman i praktiken vill man ju ha en viss bäring också för och akter. Jag brukar använda mig av nedanstående modell som riktvärde för hur surrningarnas motverkande effekt procentuellt kan fördelas.



När det gäller vertikal surrning av exempelvis en trailer i ett RORO-fartyg så blir surrningsvinkeln det den blir då lanerna är av samma bredd. Vinkeln blir ungefär 45 grader vilket är närmast idealiskt eftersom den då motverkar såväl tippning som glidning. (Ideala vinkeln för att motverka glidning ligger kring 10-20 grader och för att motverka tippning kring 70-90 grader). Lite samma sak blir det med horisontella vinklarna eftersom avståndet mellan surrningsfästena är omkring 2,5 meter.

Jag har ibland använt annex 13 för att räkna på en trailer men det blir ganska komplicerat då man måste ta hänsyn till att man har olika friktion i framkant och bakkant samt att det är svårt att bestämma omkring vilken punkt trailern tippar. Vi har frigång i fjädringar och deformation i däcken t.ex.