2. Vehicle types and arrangement of loads

2.1 General

2.1.1 An offence is committed, as stated in paragraphs 1.2.3 (ii) and 1.3, if a vehicle is loaded beyond its permitted gross vehicle weight, axle weight, or gross combined weight, or a load extends beyond any side of the vehicle more than the permitted limit.

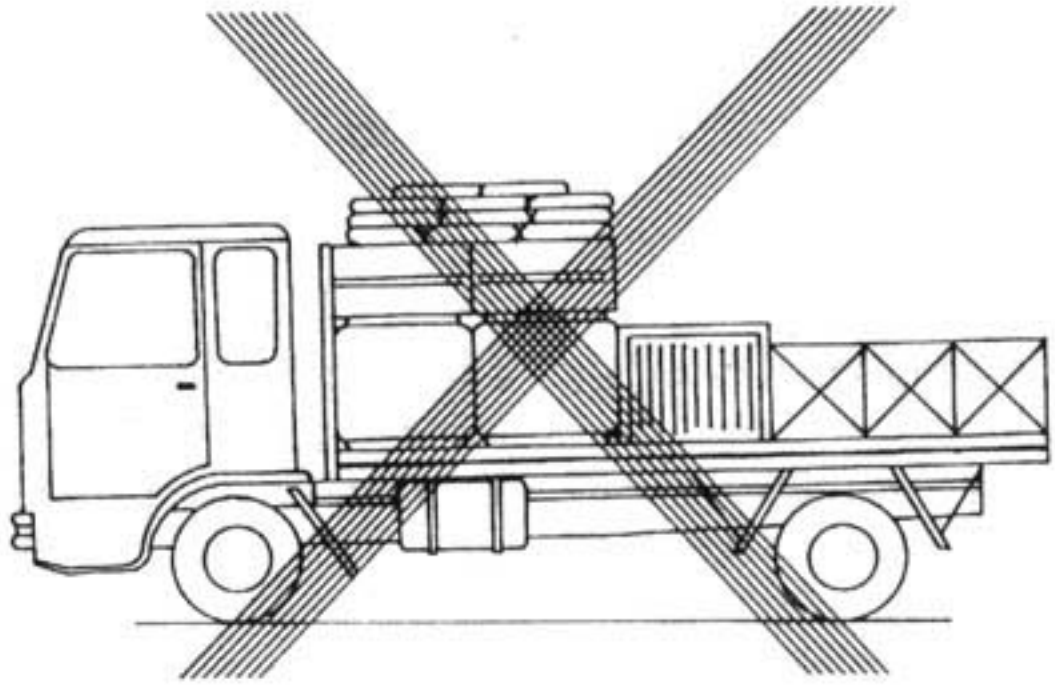
2.1.2 Having the right type of vehicle for the load intended to be carried will often avoid infringements to any regulations occurring and it is the responsibility of the owner of the load as well as the supplier/ operator of the vehicle to ensure that the right type of vehicle is provided.

2.1.3 It is not sufficient for a vehicle owner/operator/driver to claim that the weight of the load was not known, it is his responsibility to ascertain this and ensure that the permitted limit is not exceeded. Apart from any offence that might be committed in respect of any over or incorrectly loaded vehicle, the risk of an accident which may result in injury to occupants of the vehicle or other road users, is considerably increased.

2.1.4 Badly distributed loads, such as heavy loads placed at the rear or at the front of the vehicle platform can easily cause the permitted axle weight plated on the side of the vehicle to be exceeded. The result of any axle failure can be extremely dangerous for the occupants of the vehicle and for other road users if the failure occurs whilst the vehicle is moving.

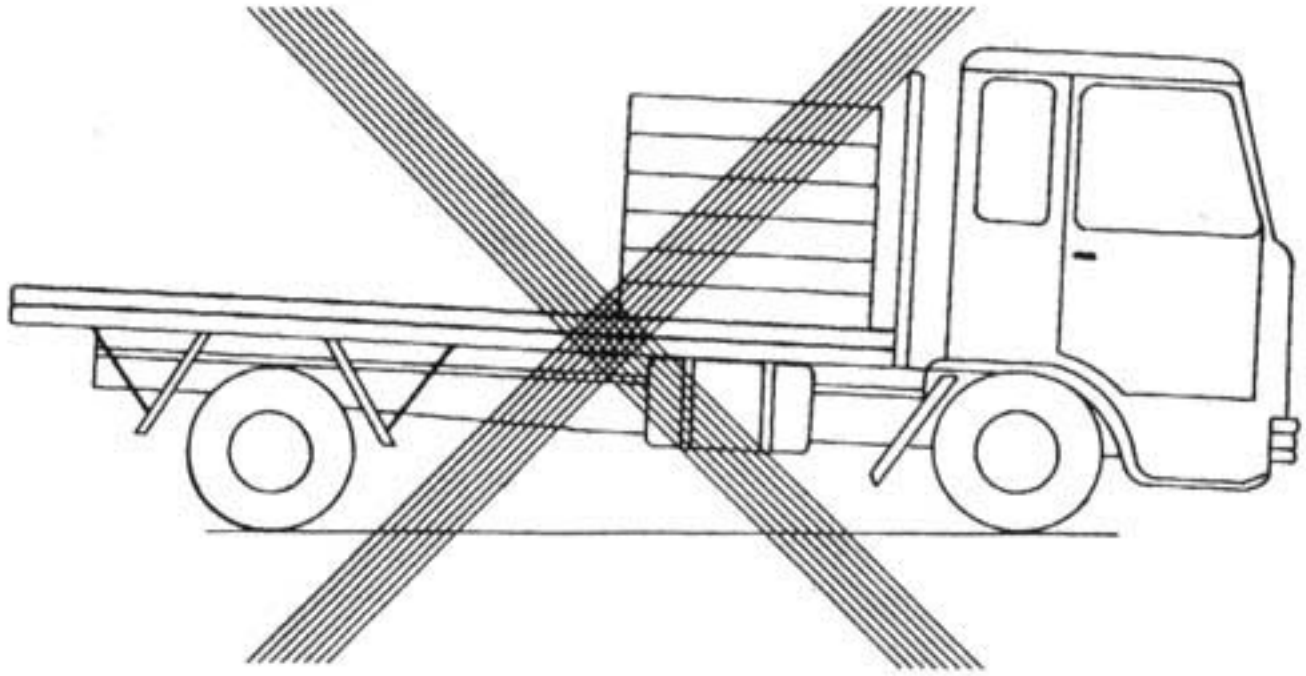
2.1.5 Where a vehicle's loading platform is equipped with a roller loading device it must be ensured that the arrangement of that device does not cause the maximum permitted axle weight of the vehicle to be exceeded when the vehicle is loaded.

2.1.6 Any roof racks or similar construction must be firmly fixed to the body of the vehicle so that they cannot become detached when the vehicle is in motion, and this should be regularly checked, particularly if they are of the type that can be removed when required. It must also be ascertained that the roof rack or similar construction is capable of carrying the load, as most of the type that are used on goods vehicles in the Territory are generally only suitable for carrying lightweight equipment, such as canvas sheeting or spare lashings.

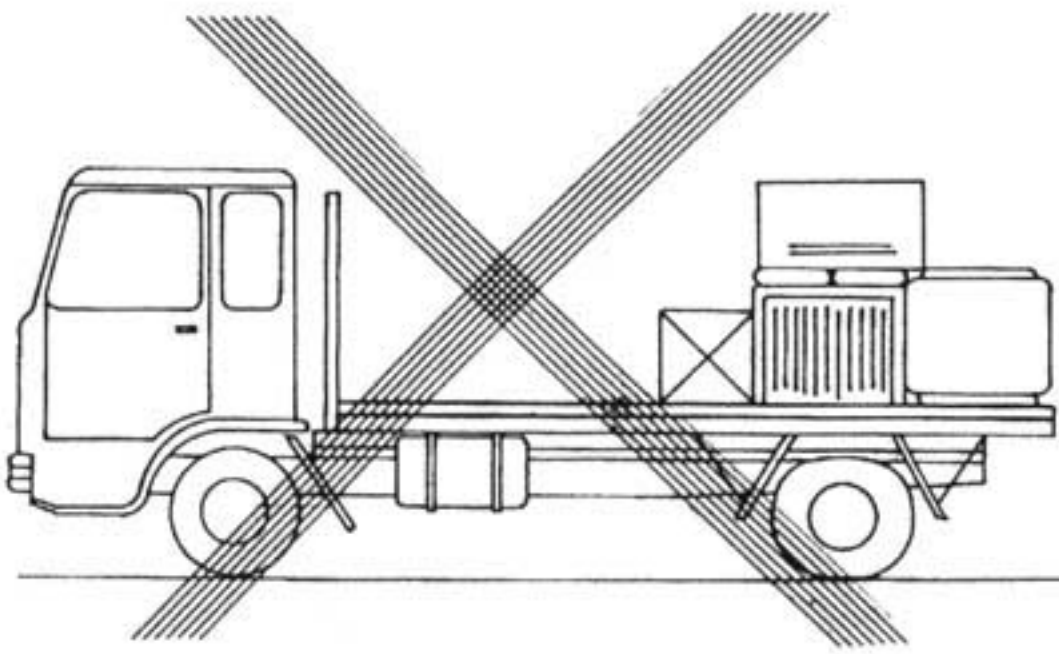


NOT ACCEPTABLE

BADLY DISTRIBUTED LOAD CAUSING FRONT AXLE TO BE OVERLOADED



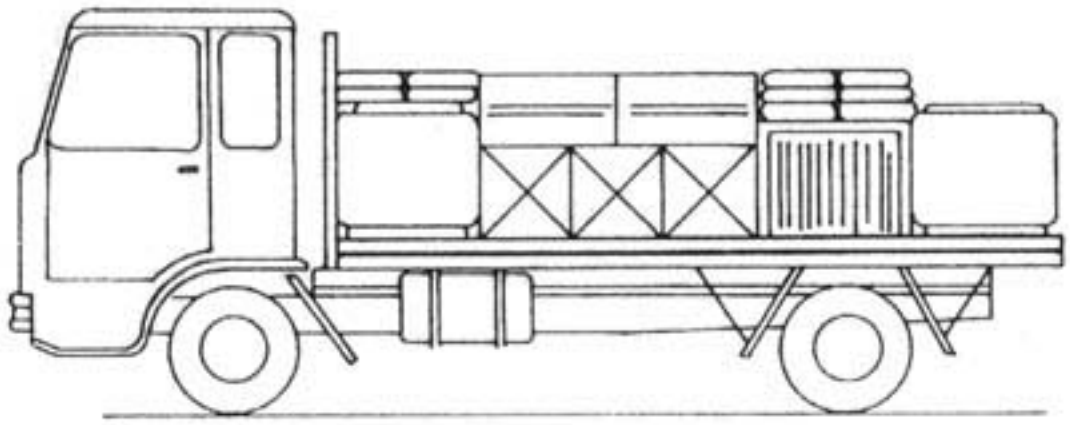
NOT ACCEPTABLE



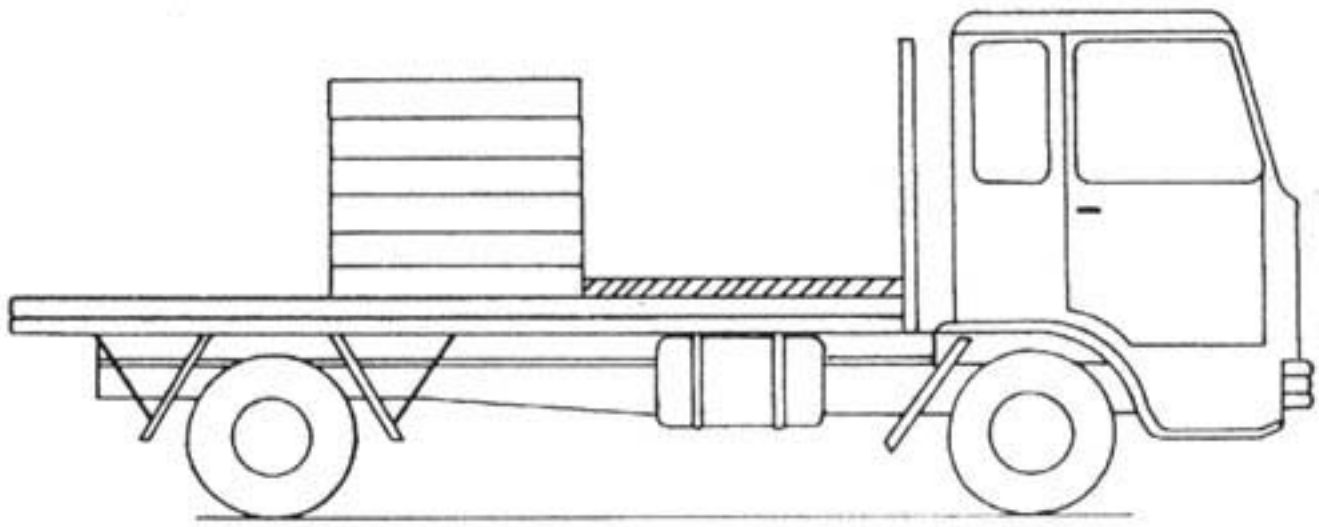
NOT ACCEPTABLE

BADLY DISTRIBUTED LOADS

DIAGRAM 2.1.1



ACCEPTABLE



ACCEPTABLE

DIAGRAMS SHOW DISTRIBUTION OF LOADS ONLY.
ADEQUATE RESTRAINTS AS DETAILED IN SECTION 3.2 ARE ALSO REQUIRED.

WELL DISTRIBUTED LOADS

DIAGRAM 2.1.2

2.2 Choice of vehicle

2.2.1 Certain vehicles, such as petrol tankers, or ready mixed concretc lorrics arc specially constructed for the sole purpose of carrying such loads. However for the majority of loads carried in the Territory general purpose vehicles are used.

2.2.2 In respect of general purpose vehicles, or any adaptation of these, it is important that:

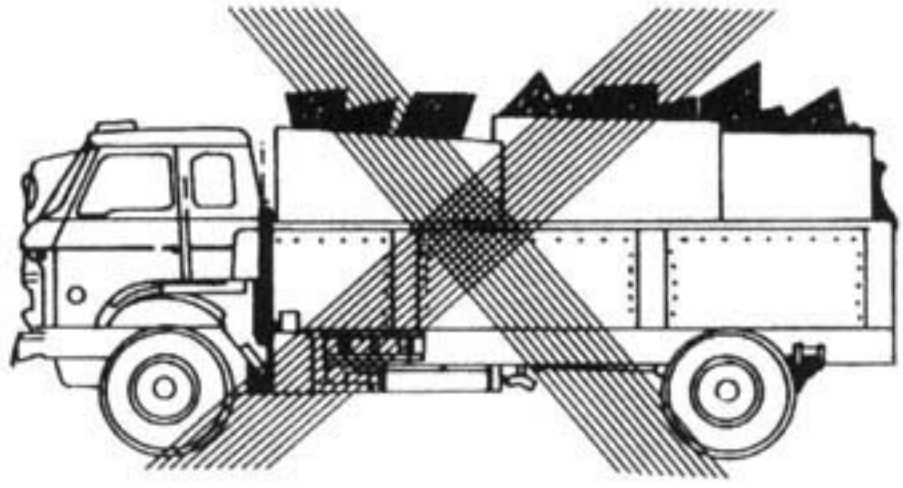
i) the design and construction of the vehicle and its bodywork is appropriate for the loads which it is likely to carry, and in this respect the strength and characteristics of the materials used in the construction must be adequate, and load bearing components should have rot proofing and anti-corrosion treatment,

ii) the maximum expected load on the floor should be ascertained in order to ensure that the floor itself and the section and spacing of supporting cross beams is sufficient. It is relevant in this respect to see that any calculation should take account of any extra forces during loading such as that exerted if fork lift trucks are to be used on the floor of the vehicle platform,

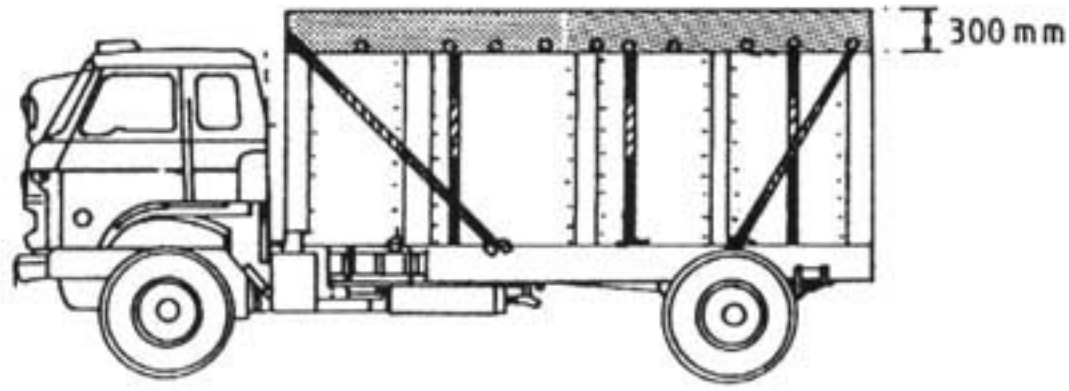
iii) the relationship between the vehicle's wheel base, body length and body overhang in relation to the composition of the loads to be carried needs to be carefully considered particularly if full use is to be made of permitted axle weights.

2.2.3 For particular loads, general purpose vehicles will not be suitable or economic. For loose bulk loads a high sided vehicle will be necessary and although body height extensions are permitted these should be purposely designed and constructed, and able to be attached to the existing body by appropriate fixings and not rely on the load for support. In this latter respect, salvaged pieces of plywood or similar supported by thc load itself, as shown in Diagram 2.2.1, must not be used as body height extensions.

NOT ACCEPTABLE



NOT SATISFACTORY AS LOAD PROTRUDES ABOVE SIDES, AND PLYWOOD PIECES HAVE BEEN USED AS HEIGHT EXTENSIONS



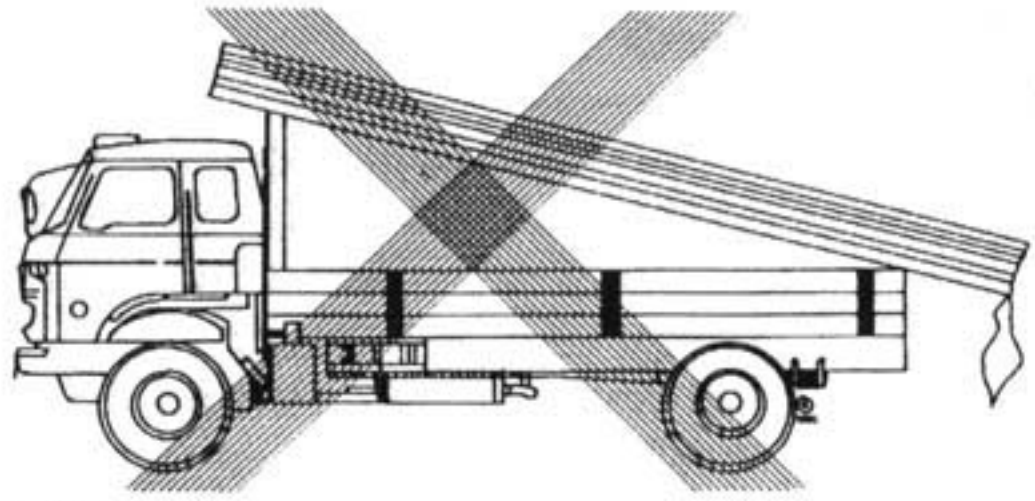
CORRECT METHOD USING PURPOSE DESIGNED VEHICLE FOR LOOSE BULK LOADS, AND COMPLETELY COVERED WITH SUITABLE SHEETING TO PREVENT ANY SPILLAGE

TRANSPORTING LOOSE BULK LOADS

DIAGRAM 2.2.1

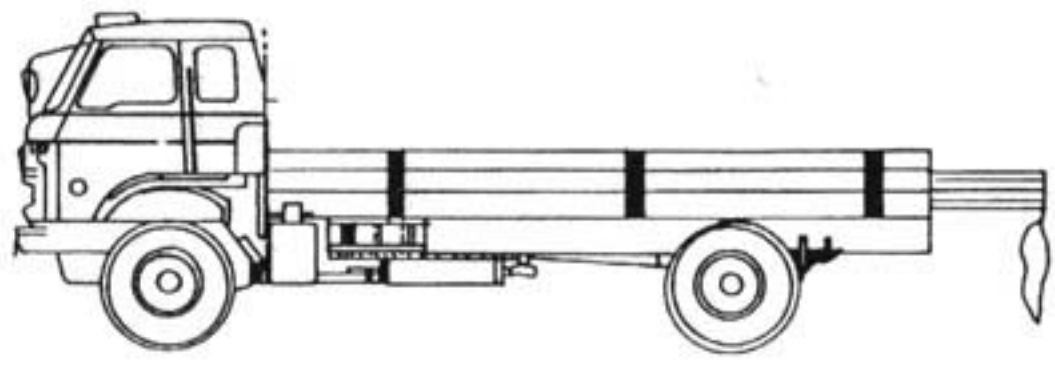
2.2.4 Permits for long loads will only be given to vehicles over 9.1 m in length, therefore any vehicle below this length cannot have any load protruding more than the permitted amount. For any vehicle where a load is likely to extend beyond the rear of a vehicle, the load should normally be laid flat, as shown in Diagram 2.2.2, and not inclined at an angle from the rear to the front, as with this latter method there is generally insufficient restraint to prevent the load from sliding backwards.

2.2.5 Where a vehicle's loading platform is equipped with a roller loading device, it must be ensured that this device is firmly and securely attached to the vehicle platform and that the device or any part of it is incapable of moving sideways, forwards or backwards relative to the vehicle platform whilst goods are being loaded or unloaded or whilst the vehicle is in motion.



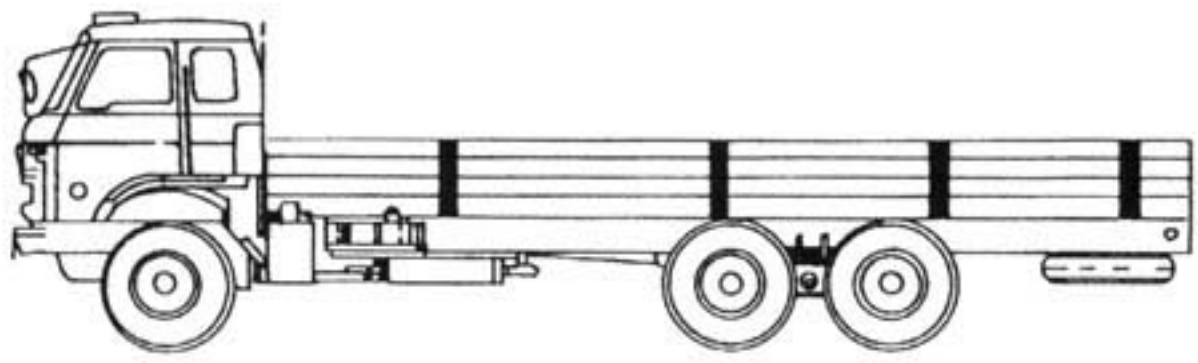
UNACCEPTABLE METHOD

LOAD TOO LONG FOR VEHICLE AND INCLINED SUCH THAT REAR OF LOAD NOT ADEQUATELY RESTRAINED AND LOAD DISTRIBUTION NOT SATISFACTORY. IF LOAD MUST EXTEND AT FRONT AND REAR, DIAGRAM 3.9.1 SHOWS A BETTER ARRANGEMENT.



BETTER METHOD

LOAD IS LAID FLAT, HOWEVER STILL HAS DISADVANTAGE THAT LOAD IS TOO LONG FOR VEHICLE



BEST METHOD

LOAD LAID FLAT AND COMPLETELY CONTAINED BY VEHICLE

TRANSPORTING LONG LOADS

DIAGRAM 2.2.2

2.3 Arrangement of loads

2.3.1 Before a vehicle is loaded it should be inspected by the driver to ensure that the load platform, bodywork, anchorage points, twist locks, and other relevant parts are in a satisfactory condition.

2.3.2 Consideration must be given when loading the vehicle that the load is not so arranged that the removal of any part of it during the journey will adversely affect any axle weight, or the stability of the vehicle. In this respect it is essential to know the weight of the load and the weight of the individual items so that it can be readily ascertained whether or not this problem is likely to occur.

2.3.3 Any load must be arranged so that it does not obstruct the driver's field of vision including the view to the rear.

2.3.4 Wherever possible the load should be placed in contact with a headboard, however if this is not possible then additional means of securing the load will be necessary, such as: -

i) a partition or baulking device fitted transversely across the vehicle platform and firmly attached so that all loads imposed on it are transmitted to the chassis frame; and/or,

ii) additional lashing.

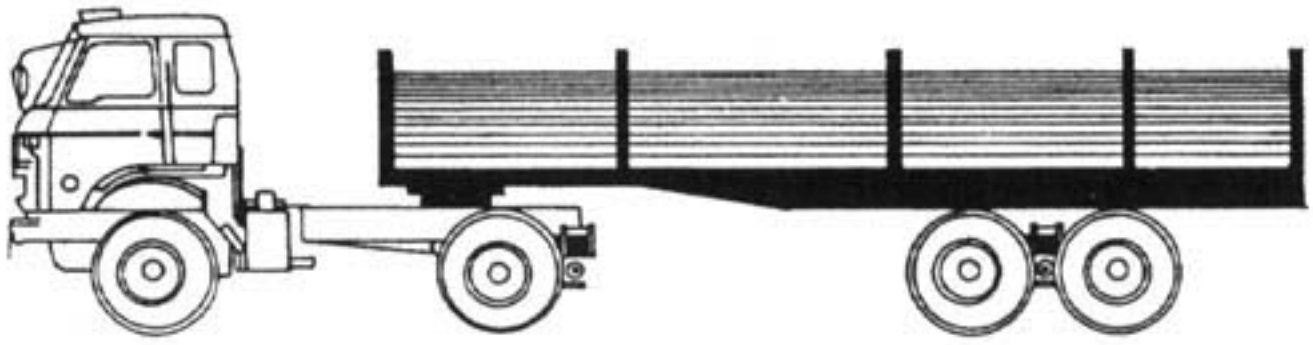
2.3.5 As shown in Diagram 2.3.1, maximum vehicle stability should be aimed for and to achieve this the load should be placed so that the centre of gravity is kept as low as practicable and near to the vehicle's longitudinal centre line. This means that: -

i) the load should be spread so that an even weight distribution over the floor area is obtained.

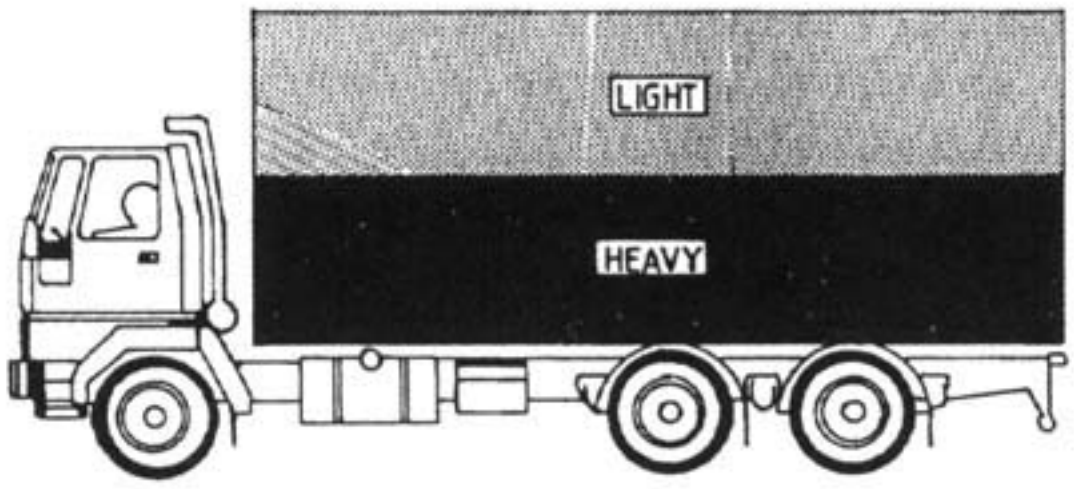
ii) loads inclined and supported only at the front and rear of the loading platform should be avoided.

iii) stacked loads should be arranged so that the heavier items are placed at the bottom.

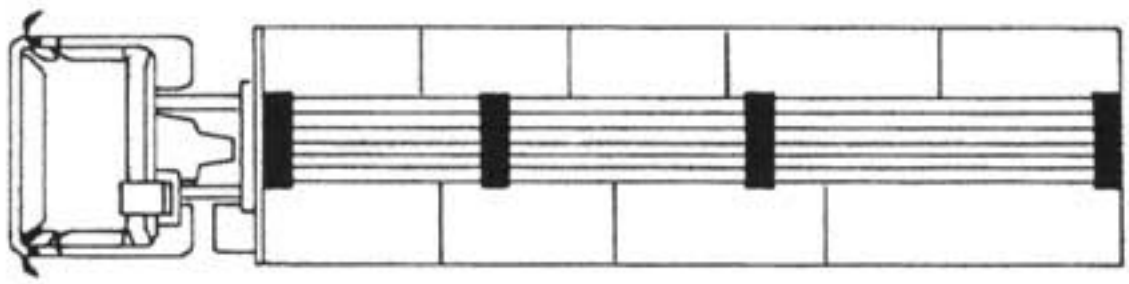
iv) heavier items should be placed nearer to the longitudinal centre line of the vehicle and lighter ones to the sides.



LOAD LAID FLAT IN PURPOSE DESIGNED VEHICLE



PROPER DISTRIBUTION OF LOAD WITH HEAVIER ITEMS AT THE BOTTOM



HEAVIER ITEMS SHOULD BE PLACED NEARER THE LONGITUDINAL CENTRE LINE

ARRANGEMENT OF LOADS FOR VEHICLE STABILITY

DIAGRAM 2.3.1

2.3.6 The weight of heavy loads having small dimensions should be distributed across the vehicle platform by the use of load spreading devices.

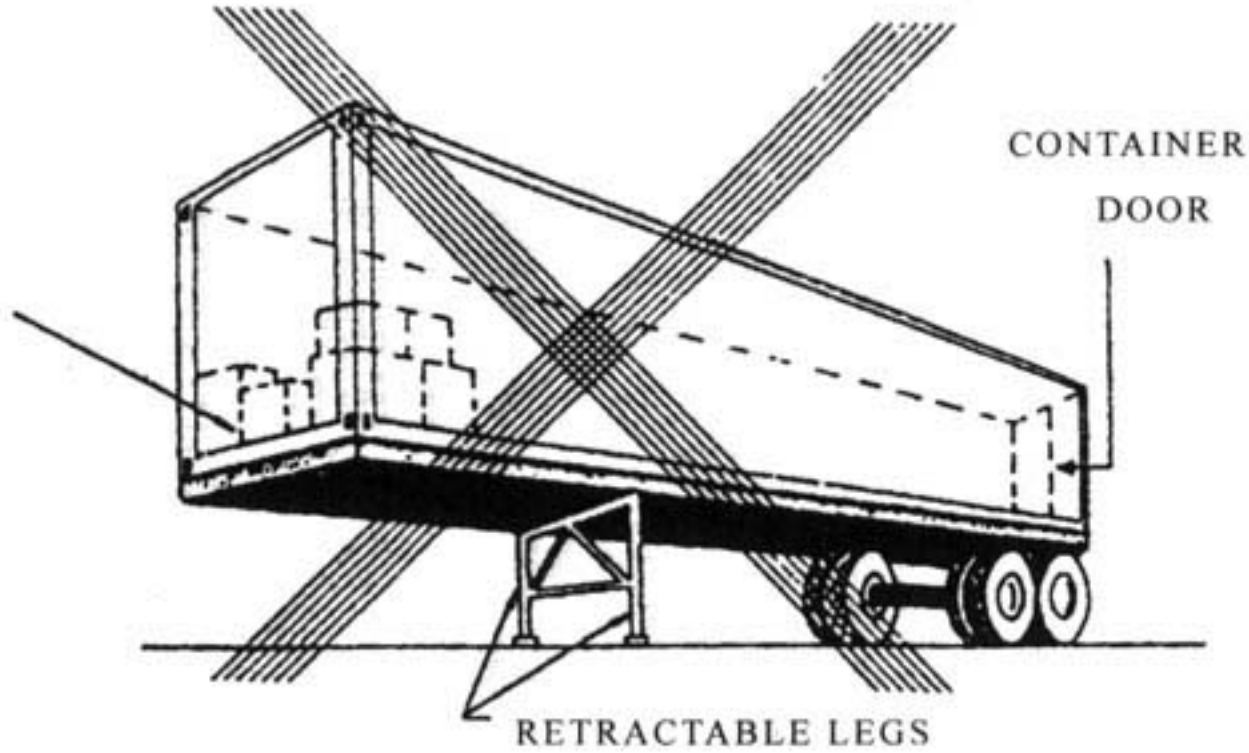
2.3.7 When a semi-trailer, not attached to its tractor unit, is being loaded and has only the retractable leg as its support, trestles or similar supports should be used beneath the fifth wheel coupling plate to prevent any collapse of the trailer, as illustrated in Diagram 2.3.2.

2.3.8 Before setting off, the driver should check that the vehicle is properly loaded and that any tensioners are tightened in accordance with the manufacturer's instructions. Also during the journey, the load should be checked to ensure that it is secure and lashings are adequately tensioned. Any loose chains or lashings should be properly stored away.

2.3.9 Where covers are used, they must be properly secured and should not be able to flap when the vehicle is moving. Similarly the loose ends of ropes and other means of lashing should be secured.

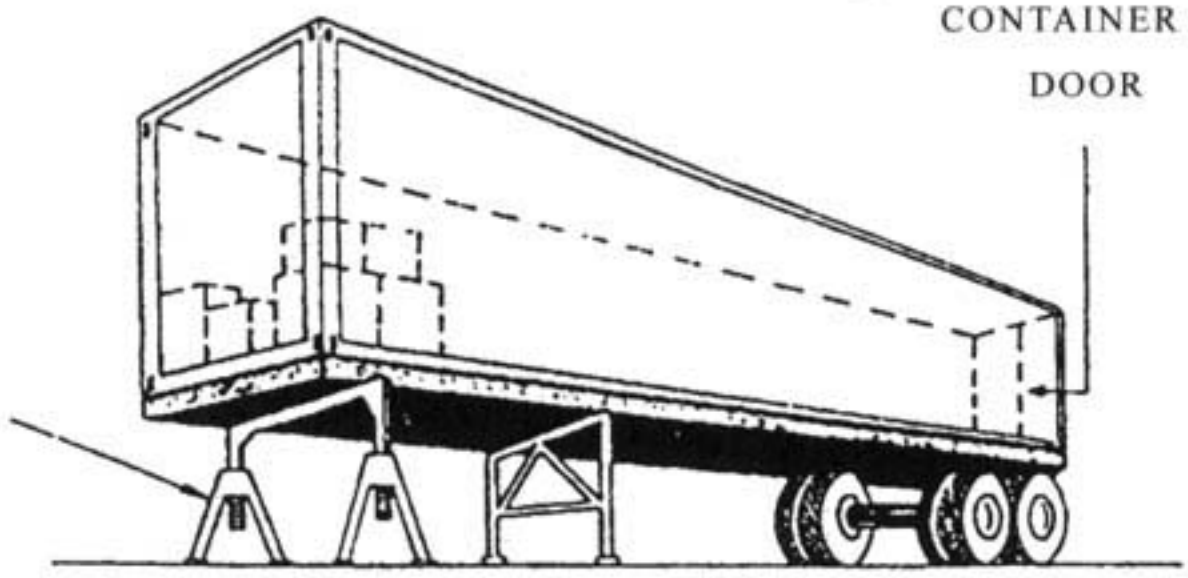
2.3.10 Any loose bulk loads must be properly covered, not only to prevent dust or spillage of parts of the load, but in wet weather to prevent water retention as certain loose loads will absorb rain, and this may result in the vehicle exceeding its permitted axle or gross vehicle weights.

LOADING ACTIVITY
IN THIS AREA MAY
CAUSE COLLAPSE AS
THE RETRACTABLE
LEGS MAY NOT
PROVIDE
SUFFICIENT SUPPORT



NOT ACCEPTABLE

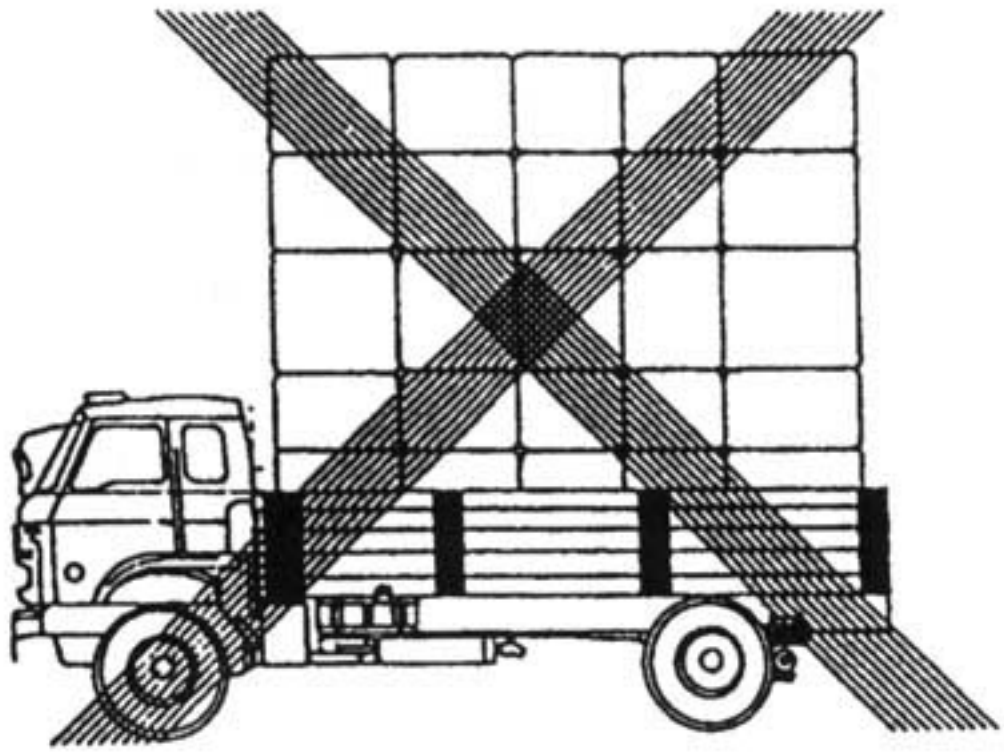
ADDITIONAL SUPPORT
TO AVOID ANY
COLLAPSE PROVIDED
BY SUITABLE TRESTLES
BEING PLACED
BENEATH THE FIFTH
WHEEL COUPLING



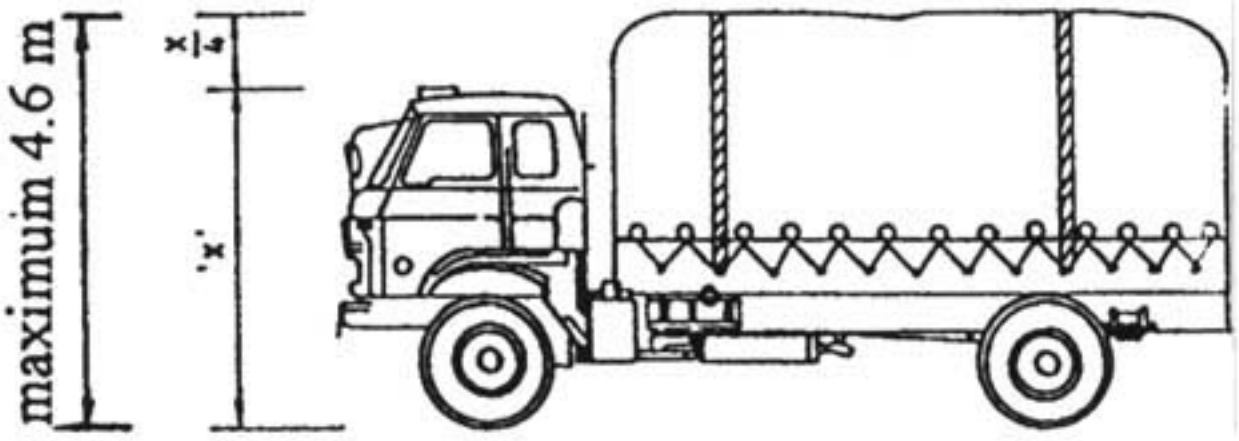
LOADING A SEMI-TRAILER NOT ATTACHED TO ITS TRACTOR

DIAGRAM 2.3.2

NOT ACCEPTABLE



CARTONS STACKED TOO HIGH AFFECTING STABILITY OF VEHICLE, UNIFORM ARRANGEMENT OF BOXES ALSO CAUSES LOAD TO BE LESS STABLE.



HEIGHT OF LOAD SHOULD NOT NORMALLY EXTEND ABOVE THE ROOF OF THE CAB BY MORE THAN 1/4 OF THE HEIGHT OF THE CAB ROOF FROM THE GROUND, EXCEPT IN THE CASE OF SPECIALLY DESIGNED AND ENCLOSED VEHICLES. THE LOAD SHOULD NEVER EXTEND BEYOND THE LEGALLY PERMITTED HEIGHT OF 4.6m

RESTRICTING HEIGHT OF LOADS

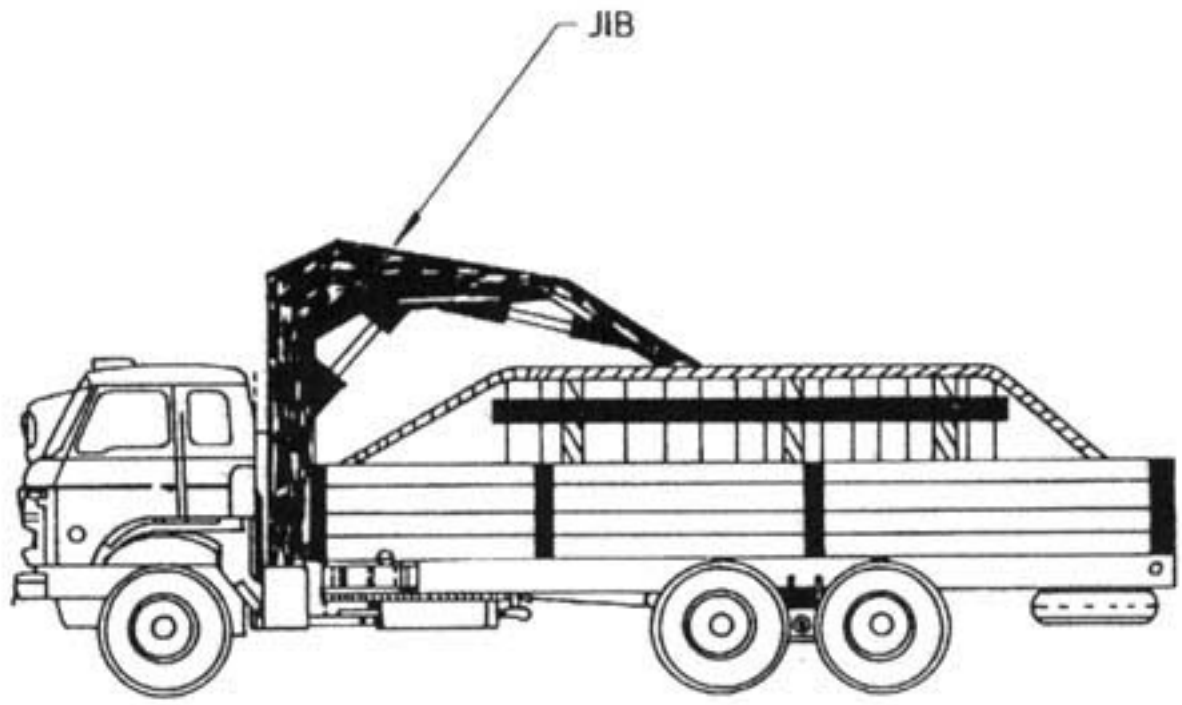
DIAGRAM 2.3.3

2.3.11 As illustrated in Diagram 2.3.3, loads must not be such that the maximum legally permitted height of 4.6 m is exceeded, and also must not, even if this height is not exceeded, be such that the height of the load is disproportionate to the vehicle, causing the stability of the vehicle to be affected. Such loaded vehicles are particularly vulnerable to being overturned in high wind situations such as typhoon conditions, or in exposed locations such as the Island Eastern Corridor where even under relatively normal conditions, high cross winds can be experienced. Beneath some bridges, gantries and other structures the clearance provided is less than 4.6 m. In such situations traffic signs are erected to warn drivers. Those drivers transporting high loads should pay particular attention to such signs.

2.3.12 Vehicles having a crane, grab or similar attachment, should be loaded similarly to other vehicles, and the jib should normally be returned to its stowed position after the vehicle has been loaded. If used to support any load, as shown in Diagram 2.3.4, it should be regarded as additional to and not a replacement for any securing devices normally required. For loads such as oil drums or drums carrying other similar inflammable material, the jib must be stowed away and not used as a restraint in order to avoid any vibration causing the jib to puncture any of the drums.

2.3.13 Whilst the advice in this code is intended to be applicable over whatever distance a load is to be carried, it is particularly relevant for longer journeys and especially where the route may include trunk roads on which higher speeds can be maintained. The likelihood of a badly arranged or secured load coming loose is considerably increased, not only due to the length of the journey but also because the acceleration and deceleration of the vehicle under these conditions will have a greater effect on the load.

2.3.14 Where a vehicle's loading platform is fitted with a roller loading device it must be ensured that the use of this device does not affect the stability of the vehicle where as a result of the device, goods cannot be arranged so that an even weight distribution over the floor is obtained or heavier items cannot be placed near the longitudinal centre line of the vehicle.



JIB MAY ONLY BE REGARDED AS AN ADDITIONAL RESTRAINT AND NOT A REPLACEMENT FOR NORMAL SECURING DEVICES REQUIRED. FOR OIL DRUMS OR SIMILAR THE JIB MUST NOT BE USED AS A RESTRAINING DEVICE. HEIGHT OF JIB MUST NOT EXCEED MAXIMUM PERMITTED.

USING JIB AS ADDITIONAL RESTRAINT

DIAGRAM 2.3.4