



# Design and Handling of Cargo Baskets

Guidance

**STEP CHANGE IN SAFETY**



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# 1 general

It has been identified that the number and various types of cargo baskets in use is causing concern during lifting, handling operations and stowage. These factors have contributed to a number of accidents and incidents in recent years. Industry formed a workgroup to look at what measures needed to be put in place to standardise the design of new baskets (and in time existing baskets) such that new builds are similar in terms of design and dimension. Crucial areas are the standardisation of dimensions and stacking method.

The use of cargo baskets on and offshore is also an area of great concern and the safe stowage of components in cargo baskets requires those who are involved to be aware of the risks. A risk assessment of the activities shall be conducted to assess and establish a safe system of work. This shall take into account the need for pre-planning during the loading and stowage and include any necessary evaluation of the manual and mechanical handling risk and access/egress to the basket. The personnel involved shall be competent in stowage of components into cargo baskets including sufficient knowledge, experience and training in the use of cranes, forklift trucks, manual handling and banksman slinger where appropriate, commensurate with their responsibilities.

*Note: The objective of this guidance is to provide criteria for the standardisation of cargo basket design and highlights good practice in their handling.*

*Note: This guidance does not cover the practice of stacking cargo baskets onshore.*



Further guidance on Task Risk Assessment  
([www.stepchangeinsafety.net](http://www.stepchangeinsafety.net)).

## 1.1 Scope

This guidance is relevant to the design of new build cargo baskets  $\geq 10$  metres in length (for baskets  $\leq 10$ m in length, similar designs may be adopted in due course). For the avoidance of any misunderstanding, this guidance refers only to the design and handling of cargo baskets and is not applicable to the design and handling of Cargo Transport Units (CTU's) often referred to as Cargo Carrying Units (CCU's) or containers.

This guidance is also relevant to the safe preparation, handling and transportation of cargo baskets to and from offshore.

In striving to continually improve safety, this Step Change guidance makes recommendations that are in addition to the requirements of EN12079 and / or DNV CN2.7-1. It is recommended that baskets not complying with these guidelines be phased out of use by 2010.

*Note: The British Standard BS7072 (1989) is considered as withdrawn and all new baskets shall be manufactured to EN12079 and / or DNV CN2.7-1. Existing Baskets made to BS7072 prior to October 1999 may still be used in the UK at this time.*

## 1.2 Definitions

### 1.2.1 Primary Basket Structure

As defined in EN12079 and DNV CN2.7-1.

### 1.2.2 Cargo Basket

An open top container for general or special cargo. Normally not more than 1830mm wide.

### 1.2.3 Special Basket

A cargo basket that has been designed for a specific piece of equipment and is not used for any other purpose.

*Note: For special purpose baskets it is anticipated that these guidelines shall be applied as far as reasonably practicable.*

# 2 standard dimensions

The standard dimensions shall be as per the following table:

Table of standard basket dimensions

Dimensions	Length			
	10m	12m	14m	16m
610mm	X	X	N/R	N/R
1220mm	X	X	X	X
1830mm	X	X	X	X

X = Recommended basket dimension.

N/R = Are not recommended.

## 2.1 Lengths

Lengths of baskets shall be standardised as follows:

10metres, 12metres, 14metres and 16metres - maximum external dimension.

*Note: Length was limited to 16m based on maximum length readily transported by road.*

## 2.2 Widths

Widths of baskets shall be standardised as follows:

610mm, 1220mm and 1830mm - external dimension.

*Note: Widths were derived based on compatibility for road transport.*

## 2.3 Heights

Baskets greater than or equal to 10 metre in length shall not exceed 1120mm at top rail excluding pad eyes (Ref. section 4) and stacking mechanism (Ref. section 8).

*Note: Height was derived from using an angle of tilt of 15 degrees for 2-stacked baskets, 610mm external width. (Based on meeting the intact stability criteria for semi-submersibles).*

Where a requirement for a basket out-with the above dimensions has been identified due to specific cargo or equipment, this will be considered as a "special" basket (Ref. section 1.2.3).



Cargo basket - transportation by road.



Cargo basket - transportation by sea.

# 3 design of fork pockets

The design of forklift pockets in this guidance is in addition to requirements detailed in European Standard EN12079 sect 5.4.5.

All baskets shall be fitted with forklift pockets and be designed as follows:

Forklift pockets shall pass through the base side rails and the opening of the pocket shall be clear of the ground by a minimum of 45mm to avoid picking up debris. The base side rails shall be large enough to maintain sufficient shear area in way of the forklift pocket cut out.

The forklift pockets shall be designed and located in the side base rails so that all free edges of the forklift pockets are stiffened by the side base rail.

*Note: Forklift pockets shall be constructed such as they do not affect the stacking mechanism or interfere with pad eyes.*

## 3.1 Fork Pocket Spacing

Basket Length	Recommended Fork Pockets Spacing	
10m	2050mm	Loaded & Empty Handling
12m	2050mm	Loaded & Empty Handling
14m	2050mm	Empty Handling only
16m	2050mm	Empty Handling only

It is recognised that DNV certification note 2.7-1 allows forklift pockets spaced at 900mm for empty handling up to 12m long, however these guidelines recommend that the 2050mm spacing be adopted (fork pocket centre).

## 3.2 Fork Pocket Welding

Forklift pocket shall be fully welded to minimise water ingress and corrosion (rust traps).



Typical Forklift Pockets.



Typical Forklift Pockets.

# 4 padeyes

All cargo baskets shall be fitted with a minimum of 4 pad eyes.

Pad eyes shall not be an integral part of any stacking mechanism. Baskets shall be designed such that the pad eyes and lifting accessories are not damaged whilst stacked.

Pad eyes shall be designed in such a manner that when the shackle is fitted it does not protrude out with the boundary of the basket.

ISO corner fittings (corner castings) shall not be fitted on the top rail of any cargo basket.

Ref. Padeyes EN12079 and DNV CN2.7-1



*Various padeye designs.*

# 5 inspection and loading

## 5.1 Cargo Basket Selection

All baskets shall comply with EN12079 and/or DNV CN2.7-1 and have valid certification.

Baskets shall:

1. Be of a size that accommodates the contents but not greater than a maximum of 15% of the length.
2. Be balanced to lift horizontally.
3. Be stackable to allow safe stacking of compatible baskets for optimum storage offshore (max. 2 high).
4. Allow for sighting of lifting gear for easy access and prevention of snagging.

Items that meet the classification criteria of dangerous goods or any items so packed marked or labelled will not be dispatched in a cargo basket unless competent authority approval has been gained from the Maritime Coastguard Agency.

## 5.2 Inspection of Cargo Baskets before Loading.

The Slinger/Load Handler of the cargo basket must carry out a visual inspection internally and externally prior to loading. This inspection must ensure that the cargo basket is fit for purpose with no evident damage, which may result in the cargo basket being a safety risk.

Where the cargo basket is not in a satisfactory condition it must be replaced.

The following is a recommended list of inspection points that shall be used as guidance before loading a cargo basket:

### 5.2.1 External Visual Inspection Checks

Adequate lighting provisions must be made to perform a suitable inspection of the cargo basket prior to use.

The inspection should cover the following aspects:

- 1) The main primary structural framework of the corner posts, longitudinal top and bottom base rails on all four sides must be free from any visible mechanical damage and / or evidence of deterioration. The facility should include a suitable means of lifting and supporting the basket if required by the slinger/load handler for the purposes of inspecting the under-side.

- 2) Pad eyes should be in good condition and the shackle should be a tight fit with hole size being within 6% of the pin diameter and pad eye filling 75% of the shackle gap (Ref. EN12079).
- 3) The basket shall be identified and traceable to the certification.
- 4) Valid data plates (information and inspection) should be fitted to the basket. EN12079 requires that baskets are fitted with both an information plate and an inspection plate. Both should be inspected.
- 5) Markings shall be visible as specified in EN12079, DNV CN2.7-1 and this document. (See section 10.0).
- 6) There must not be any significant deformation of the sidewalls or floor which affects the integrity of the basket.
- 7) Any labels or marking from previous cargoes that do not relate to the current load must be removed or covered.

### 5.2.2 Internal Visual Inspection Checks

- 1) The basket must be free from any visible damage. Pay particular attention to the floor condition and any protrusions that could cause injury to personnel or damage cargo.
- 2) The cargo tie down points must be in good condition. (See section 9.0).
- 3) All lifting accessories sets must be protected from mechanical or physical damage.
- 4) Ensure draining holes are unblocked and are free from debris.

## 5.3 Loading the Cargo Basket

For the safe handling of cargo during loading there must be sufficient means of access and egress to the loading area taking into account the load and any mechanical handling aids.

The cargo shall be evenly distributed over the length and breadth of the cargo basket as far as reasonably practicable. If cargo items of varying mass are to be packed into a cargo basket, or where the basket will not be loaded to capacity, (either because of insufficient cargo or because the maximum allowable gross mass will be reached) then: -

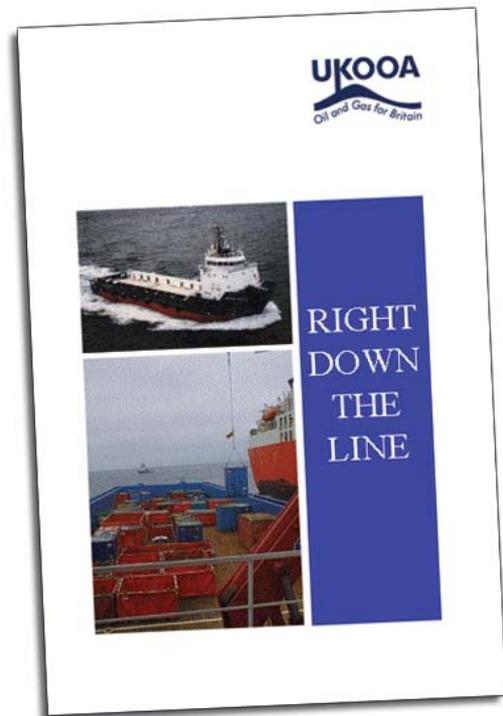
The components must be secured so that the approximate centre of gravity of the components is as close as possible to the mid length and mid width of the basket.

If a cargo basket is to be loaded with an uneven weight distribution then special slings should be supplied to suit the Centre of Gravity of the loaded basket. For the return trip and to balance the basket a 2nd set of slings shall accompany the original load and be included on the manifest.

The cargo should be secured using tie down points as provided ensuring that lashing points are not overloaded. The cargo tie down points or ring must be well anchored and be in good condition. The cargo should be secured whenever practical using ratchet type straps or purpose designed securing mechanisms. The use of wooden chocks as a securing medium is not recommended.

The person or persons loading the baskets are accountable for ensuring that the cargo basket is lifted prior to being dispatched to ensure stability and is lifted horizontally.

*Note: The use of bulk timber, metal or water as ballast is prohibited.*



*Video produced in conjunction with UKOOA Guidelines for the Safe Packing and Handling of Cargo to and from Offshore Locations.*



*A means of lifting a basket to check for balance.*

# 6 snagging hazards

The basket shall be designed in such a way to prevent snagging during lifting operations and transportation.

## 6.1 Snagging Hazards Inside the Basket

The internal design of the basket shall be constructed to avoid any snagging of the lifting accessories during lifting and handling operations.

For all open top baskets, prior to lifting operations the Owner / User shall carry out a risk assessment to ensure there is no risk of the lifting set fouling on any equipment or cargo fitted inside the basket, if a risk exists then a means of prevention shall be adopted.

Risk may be reduced by means of a cover (lid) or by fitting a tarpaulin or cargo / safety net. Fixtures for attaching such protection shall be fitted and designed so they do not extend outside the external boundary of the basket and cannot be damaged by the cargo.

## 6.2 Snagging Hazards outside the Basket

The design of the cargo basket shall be so that any external fixings or attachments do not create additional hazards.



*Possible internal snagging hazard.*



*Example of tarpaulin cover.*

# 7 eliminating dropped objects

In order to mitigate the potential for dropped objects all baskets shall be designed as follows:

## 7.1 Design of Floor

All baskets shall have a fully plated floor with adequate drainage.

*Note: Small objects should be suitably packed in accordance with the UKOOA Guidelines for the Safe Packing and Handling of Cargo to and from Offshore Locations.*

## 7.2 Design of Sides

All open sided baskets shall have a minimum of 150mm high kick plate fitted all round the perimeter of the floor.

## 7.3 Design of Base

The base of the basket shall be designed to minimise the potential for foreign objects e.g. stones being picked up.

Box section shall be used for fabrication of the base. Channels or beams shall not be used.

*Note: Design of Fork Pockets, Ref. section 3.*



Example of potential dropped object.



Floor of basket showing typical drainage hole.



Example of where kick plate should be fitted.

# 8 stacking arrangements

Subject to satisfactory risk assessment baskets may be stacked offshore to a maximum of 2 high providing they meet the requirements of these guidelines.

Baskets must not be stacked on offshore support / supply vessels.

## 8.1 Stacking Mechanisms

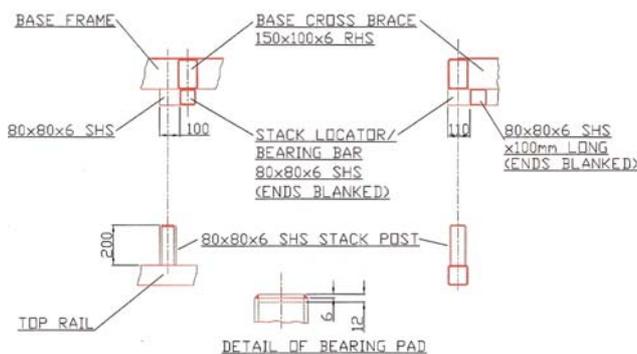
Stacking mechanisms shall be designed to securely hold the top basket against impact and environmental forces.

The stacking mechanism shall be designed to avoid damage to both baskets.

Baskets of the same length and width that are fitted with a stacking mechanism that complies with these guidelines, may be stacked providing suitable risk assessment has taken place.

In addition baskets of a smaller length and same width may be stacked on a longer basket with same width provided the stacking mechanism aligns / complies with these guidelines.

Stacking Mechanism Dimensions



Full size drawing available for download from the Step Change website: [www.stepchangeinsafety.net](http://www.stepchangeinsafety.net)

The stacking mechanism shall be designed in order that the lifting set is protected from damage during stacking.

For 10m to 16m long baskets standardised stacking mechanisms shall be designed with 8m centres.

Baskets of different widths shall not be stacked.

## 8.2 Stacking Compatibility Markings

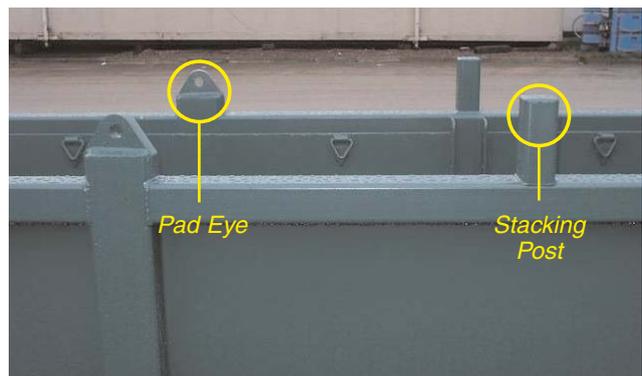
The stacking mechanism shall be marked in a contrasting colour in capital letters of 75mm minimum height adjacent to the mechanism at all four points. The following table indicates the lettering convention to be used.

Dimensions	Stacking Compatibility				Marking
	Length				
Width	10m	12m	14m	16m	Stacking Type
610mm	6A	6A	N/R	N/R	A
1220mm	12B	12B	12B	12B	B
1830mm	18C	18C	18C	18C	C

Note: Baskets of the same stacking type may be stacked. Example A-A, B-B and C-C.



Underside view of basket stacking mechanism.



Basket top rail showing stacking post and pad eye.

# 9 cargo securing methods (restraining contents)

## 9.1 Tie Down Points

To avoid being damaged by cargo the tie down points shall be of a hinged type and designed to withstand a pull force of at least 10KN.

Tie down points shall be fitted in pairs with a maximum of 1 metre spacing along the length of the basket.

The tie-down points shall be designed for use with banding and webbing.

Tie-down points shall be subject to a regular close visual inspection by a slinger/load handler.

The use of swivel type tie down points is recommended.

## 9.2 Cargo Securing Mechanisms

Where tie-down points are considered insufficient to suitably restrain the cargo other alternatives such as clamps or goal post arrangements shall be used (see photographs below).

Goal post arrangements should be fitted at 1metre from either end of basket, there after at a maximum of 2 metre intervals along the full length of the basket. Cradle designs may be developed to suit cargo which will utilise the goal posts.

The alternatives shall be designed with regard to manual handling limitations and be capable of being lifted and installed by one person. They shall be designed to prevent any snagging of the lifting sling assembly.

Where baskets have such securing mechanisms that are removable the basket may be accompanied with a basket parts list.



*Example of a swivel type tie down point.*



*Examples of alternative restraining devices fitted to cargo baskets.*

# 10 safety markings

All Baskets shall be suitably marked as specified in EN12079 and DNV CN2.7-1 and in addition as follows:

## 10.1 Basket Top

The top rails of the basket shall be marked with hatching in a contrasting luminous colour; this may be painted or reflective tape (e.g. photo luminescent).

## 10.2 Basket Ends

The external vertical end rails (corner posts) of the basket on all 4 sides shall be marked with hatching in a contrasting luminous colour, this may be painted or reflective tape (e.g. photo luminescent).

## 10.3 Stacking Information

Baskets designed for stacking shall be suitably identified as detailed in section 8.2.

*Note: Safety markings should be kept in good order.*



Examples of safety markings and stacking information identification.

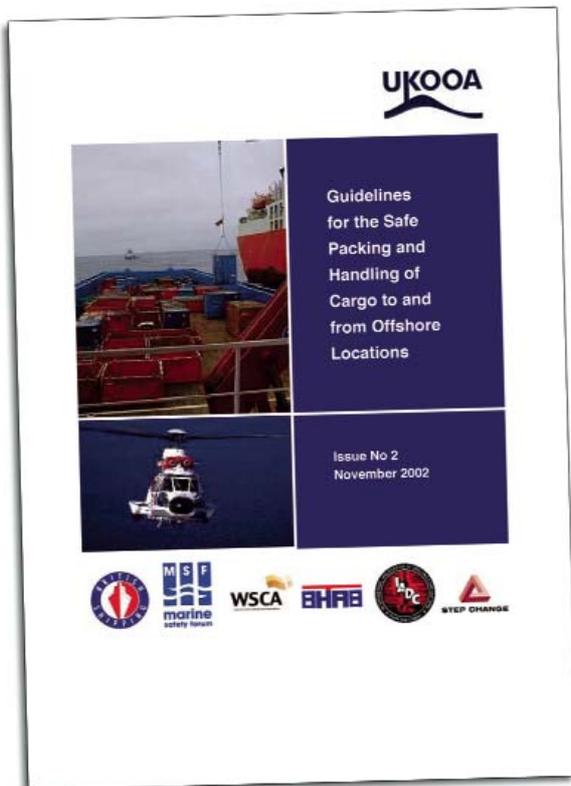
# 11 tag lines

A facility to allow the use of tag lines shall be fitted near each end of the basket and marked accordingly 'Tag Line Only'; these shall be suitable for a minimum load of 10KN. These shall not be a snagging hazard and shall be designed so they do not extend out-with the boundary of the Basket.

Further information on the use of Tag Lines Ref. UKOOA Guidelines for the Safe Packing and Handling of Cargo to and from Offshore Locations.



Example of Swivel Type Tag Line Fixture Point



UKOOA Guidelines for the Safe Packing and Handling of Cargo to and from Offshore Locations.

# 12 basket selection

## 12.1 Component / Design Engineer

Suppliers of components (cargo) must take into account the supply chain requirements before selection and procurement of a cargo basket. Consideration should be given to the limits of available deck space, transportation, lifting, loading, unloading and securing of components using a cargo basket meeting the requirements of this guidance.

## 12.2 Cargo Basket Selection (Planning, Loading and logistics)

The correct selection of the appropriate basket is very important. Due consideration must be given to the following factors that affect the size and type to be used:

- 1) The characteristics of the components.
- 2) The loading and unloading restrictions that may be encountered.
- 3) The mode(s) of transport and any foreseeable conditions that may be encountered.
- 4) The dimensions and gross weight of the loaded basket and the mode of carriage and any problems that could be encountered with the traffic regulations en-route where applicable.

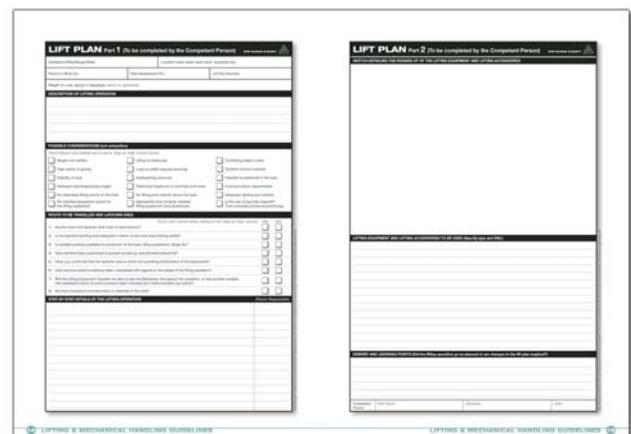
## 12.3 Securing of Components into Cargo Baskets

Before commencing the lifting operation an assessment must be worked out to secure the components into any cargo basket. Advice from a competent person shall be sought. Such persons will have sufficient knowledge, experience and training to meet the requirements in LOLER. The assessment must take into account the goods characteristics and compatibility of strength and weight to be loaded and produce a tight or secure load.

- 1) A standard size cargo basket should be selected from the sizes specified section 2.0 of this guidance.
- 2) The planned load must not exceed the pay load of the cargo basket, which is stated on the certification and data plate.
- 3) The cargo basket shall be designed assuming that the load is to be evenly distributed over the complete floor area of the basket. Where there is substantial deviation

from uniform loading slings manufactured to suit the Centre of Gravity of the loaded basket shall be used.

- 4) The loading of all baskets shall be such that no components exceed the external dimensions of the basket. It is however recognised that in some instances, the cargo may protrude above the top rail of the basket, at no time should the cargo protrude out with the sidewalls or end of the basket. In these cases a detailed risk assessment must be completed to take into consideration the snagging of the cargo by lifting sets and movement during transit which may result in cargo falling outwith the basket.
- 5) The planning must take into account any problems of restricted access or egress and to the availability of mechanical lifting aids, the use of forklift trucks and the manual handling risks at final destination such as on an offshore installation.
- 6) Due consideration should be taken to any shock or impact occurring when loading/unloading which may have an effect on the securing arrangement integrity.
- 7) The lifting accessories shall be made easily accessibility in secure position at or near the top of the basket to allow for handling and attaching during loading or unloading in the transport operations. The location of the inside the basket shall not pose a snagging hazard when being lifted.



Lift Plan: Part 1 and Part 2 to be completed by the Competent Person.

*Note: Lifting Plan extracted from Step Change Lifting and Mechanical Handling Guidelines ([www.stepchangeinsafety.net](http://www.stepchangeinsafety.net)).*

## 12.4 Transportation, Loading and Forwarding

The vendor (component supplier) must obtain information and / or seek assurance prior to the dispatch of a cargo basket(s) that the proper lifting equipment and facilities are suitable at each stage involving loading, unloading during transit and also at the final destination to ascertain if:

- 1) The site(s) have adequate overhead / mobile cranes or forklift trucks.
- 2) The site(s) lifting equipment is suitable and within the capacity needed.
- 3) There is a dedicated area for loading and unloading operations and is it adequate and suitable.
- 4) Access and egress is sufficient and free from any restrictions or other imposed limits at the sites such as vehicle size etc.
- 5) There are any special site requirements needed such as an induction etc.

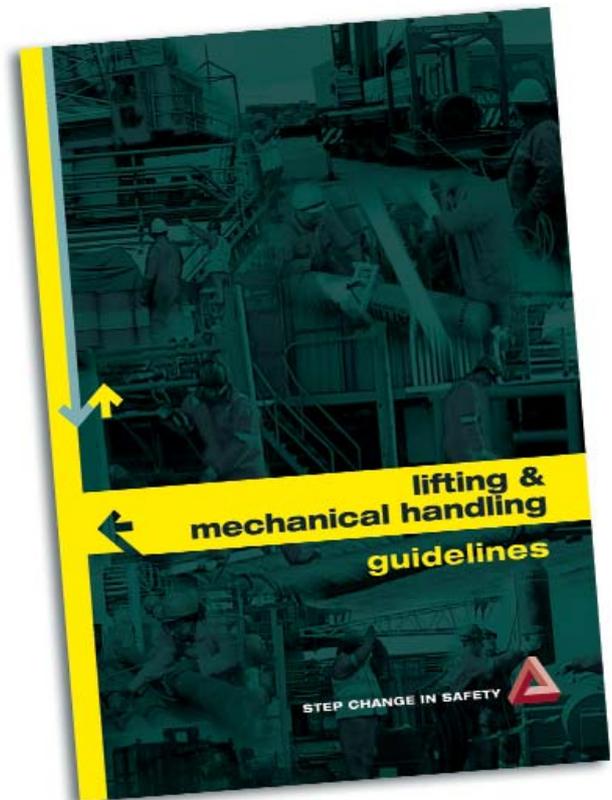
*Note: The vendor will normally only need to gather the information once if the shipping arrangements involved are handled by the same sites on a routine basis.*

*Note: It is recognised that individual vendors/suppliers will have relevant guidance within their own company procedures.*

## 12.5 Loading and Lifting Operations

Trained competent persons familiar with loading operations shall formulate loading plans. Adequate supervision for routine and non-routine lifts shall be available as appropriate.

Further guidance of competent persons is given within Step Change Lifting and Mechanical Handling Guidelines ([www.stepchangeinsafety.net](http://www.stepchangeinsafety.net)).



# 13 horizontal lifts (balance of loads)

The lifting arrangements for baskets shall be designed to ensure the basket is lifted horizontally (Ref. section 12.3: Securing of Components into Cargo Baskets).

If the basket is loaded with an uneven load distribution (unbalanced load) the table below gives guidance on the maximum allowable inclination.

Should these figures be exceeded a special sling set will be required. The redesigned lifting arrangements must be such to ensure the master link of the sling set is positioned above the centre of gravity of the unbalanced load, this will then ensure a horizontal lift is obtained.

Basket length	Max recommended vertical offset between ends
10m	300mm
12m	360mm
14m	420mm
16m	480mm

*Note: Additional pad eyes on the basket may also be required. Baskets fitted with such padeyes will be categorized as a "special".*



Typical lift showing a balanced load.



A lift showing an unacceptable unbalanced load.

# 14 transport

## 14.1 Securing of Cargo

The cargo basket, any internal components must be secured during all methods of transportation. The person(s) responsible for the packing of components into a cargo basket must secure the goods correctly as their actions can affect the safety of others such as-

- 1) Drivers of road vehicles and other highway users.
- 2) Dock workers when the cargo basket is lifted on or off a ship.
- 3) The final consignees.

It is important that inspections and checks are made prior to loading and after the components are secured to ensure cargo basket are properly prepared for transport to prevent:

- 1) Damage to cargo.
- 2) Damage to the cargo basket.
- 3) Damage to the cargo baskets lifting accessories.

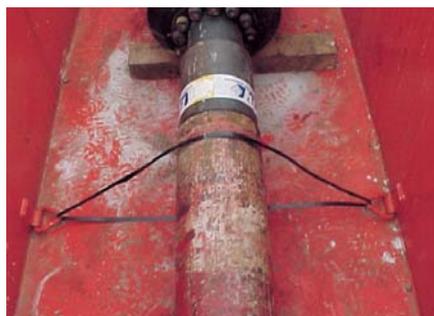
## 14.2 Vehicle Loading

Prior to positioning a cargo basket onto a vehicle for the purpose of loading ensure that:

- 1) The hand brake is applied and engine switched off before loading is commenced.
- 2) The cargo basket being loaded is tagged in accordance with section 15.
- 3) Mechanical hazards must be taken into account. It is essential that the cargo basket is secure against any reasonably foreseeable movement taking into account the mechanical forces of acceleration, deceleration and vibration.
- 4) The addition of vertical and horizontal impact may also occur during handling with forklift trucks or as a result of road surface conditions.
- 5) It is the responsibility of the driver to ensure that the cargo basket is suitably positioned and secured on the vehicle.
- 6) People are in a safe area during loading operations.



Good example of cargo securing.



Example of poor cargo securing.



Example of poor cargo securing.

# 15 load security inspection procedure

## 15.1 Load Security Inspection Procedure

All cargo baskets shall have attached a inspection tag to either identify its current transit status as inbound or outbound cargo. The tag shall be annotated by the relevant persons to confirm that the cargo basket is properly prepared, packed and sea fastened in a manner to satisfy the conditions that it could reasonably expected to encounter during transport and:

- 1) The cargo basket has been checked to ensure loose objects are removed or secured (Ref. section 12.3).
- 2) The lifting accessories are certificated and fit for purpose.

Drivers, Loaders and vessel personnel shall ensure that no cargo basket is handled without a valid tag. A cargo basket dispatched without a tag shall be returned to the vendor.

The driver must pass the delivery documents to the receiver who shall ensure that adequate provisions have been made for the cargo basket. The driver of the vehicle must liaise with the receiver who will have an appointed slinger/loader to deal with and supervise the operation. The appointed person should be aware of the inherent risks and the necessary precautions needed to ensure: -

- 1) The vehicle handbrake is applied and the engine switched off during loading / unloading.
- 2) Loading operations are properly planned taking into account load characteristics and facilities.
- 3) The load is kept under control at all times.

*Note: When loaded the driver must ensure, taking into account any width or height restrictions that the vehicle can enter or depart the loading area and site. The driver must ensure that any loose objects are removed or secured before transit.*

*Note: Risk Assessment: - Personnel involved in stowage, loading / unloading of cargo baskets to / from vehicles, must take into account any potential risks. They must ensure that additional risks are not created during the operations that could affect the health and safety of personnel.*

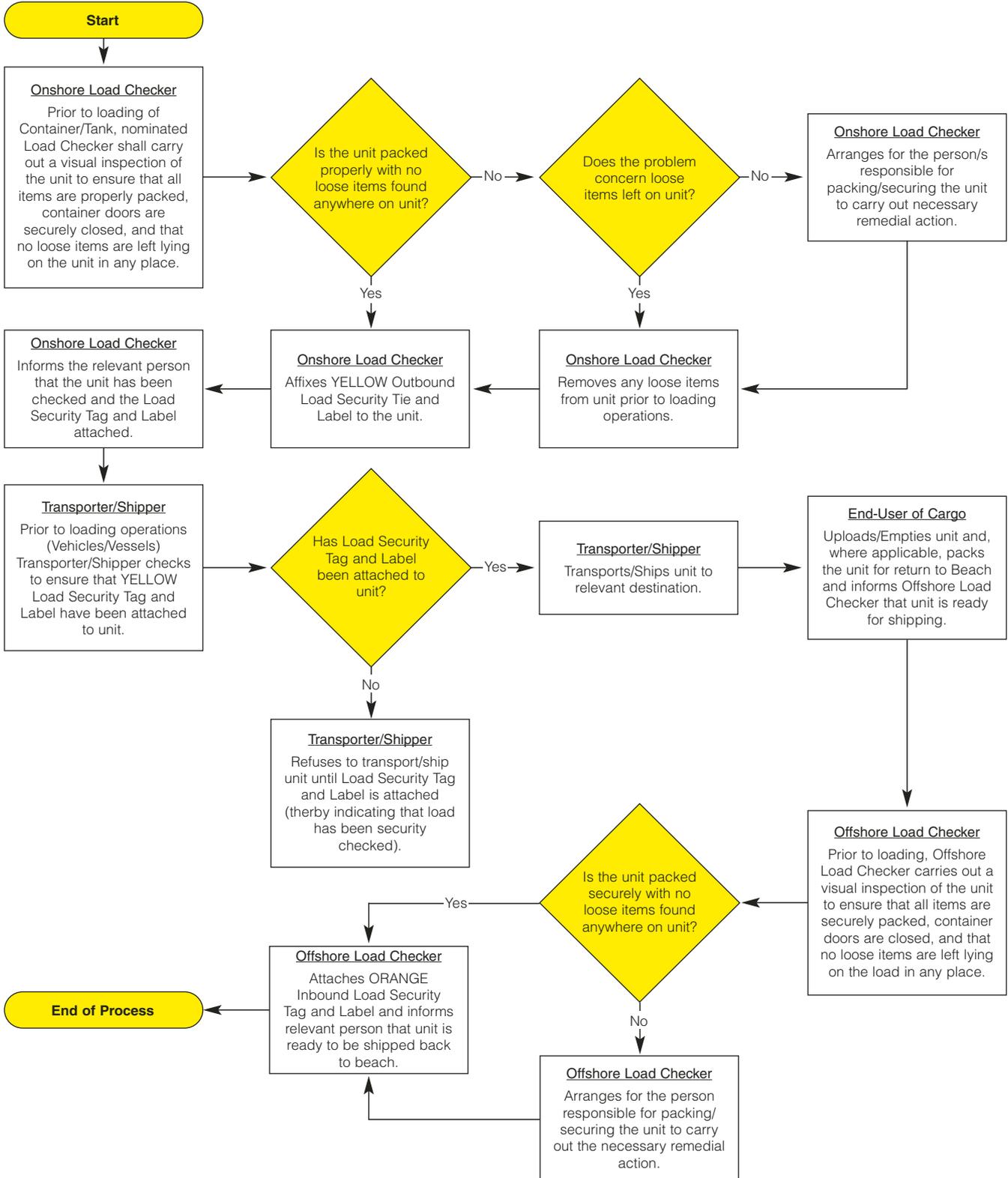
Details on purchasing inspection tags can be obtained from [www.stepchangeinsafety.net](http://www.stepchangeinsafety.net)



## 15.2 Load Security Inspection Procedure - Flowchart (example)

This procedure has been adapted from the Talisman Energy (UK) Ltd. process for ensuring the safety and security of cargo during transportation to and from offshore installations.

To this end, the term 'Unit' can be taken to be CCU's (Cargo Carrying Units both closed and open top), Tubulars (slung or in frames), Waste Skips, Helifuel Tanks, Chemical Tanks, Specialist Loads (wire line units and other well service packages) Suppliers/Users of the above should nominate a Load Checker within their organisation to ensure that the procedure is carried out and suitable verification methods implemented to provide an audit trail.



# 16 offloading and backloading operations

## 16.1 Onshore Yards

On arrival at the destination, if no adequate provisions have been made available for the receipt of the cargo basket, then the driver and receiver shall take no further action until such times as a plan for the safe loading / unloading of the basket has been established and agreed.

An assessment and control of the site conditions where handling and loading operations are to be conducted should consider the following as a minimum:

- 1) Obstructions such as snagging hazards, power cables in the vicinity or parked vehicles.
- 2) Ground condition that could give rise to causing instability of the load, vehicles or lifting plant involved.
- 3) Unauthorised personnel are kept clear.

Access to the vehicle or cargo basket during loading / unloading should be restricted. If there is a need to access the vehicle or cargo basket all personnel involved i.e. drivers, loaders and crane / fork-lift drivers should receive clear instructions as to the actions to be taken, which may include specified safe areas on the vehicle. Prior to any access the following should be considered: -

- 1) An inspection from the ground should be conducted before anyone attempts to access the vehicle and then only mount the vehicle only if appropriate access equipment (e.g. ladders) is available.
- 2) Only designated personal may access the vehicle.



*Example of partially secured backload.*

There is always a risk of a load in any cargo basket becoming loose or dislodged during transit. Therefore any securing methods should be checked for integrity prior to any handling operation beginning.

If possible, inspection should take place from an elevated position for example, a loading gantry. Any movement or loose objects must be secured or removed prior to handling.

Cranes or other lifting equipment/accessories should be inspected before use and only operated by competent personnel.

- 1) Only certified lifting equipment or accessories which are suitable for the task should be used and the safe working load of that equipment should never be exceeded.
- 2) Personnel involved in slinging tasks or attaching lifting accessories must be trained in the proper use of lifting equipment (Ref. Step Change Lifting and Mechanical Handling Guidelines). All personnel must be clear of the vehicle before lifting commences.

Where cargo baskets have been placed adjacent to one another on vehicle trailers and where a forklift truck is being used to offload, caution must be taken to avoid the fork tips protruding beyond the basket being lifted and into the pockets of the adjacent basket. Great care must be taken during this operation as there is potential to cause damage and personnel injury. It is strongly recommended that baskets loaded side by side be staggered on the vehicle trailer to ensure that the fork tips cannot inadvertently engage the adjacent basket causing it to be moved or lifted.

## 16.2 Quayside / Offshore - Loading or offloading to or from Supply Vessels

All cargo baskets shall have a load security inspection tag attached to identify its current transit status as inbound or outbound cargo. The inspection tag shall be annotated by the relevant persons to confirm that the cargo basket is properly prepared, packed and sea fastened in a manner to satisfy the conditions that it could reasonably be expected to encounter during transport: see section 15.1 and 15.2.

Before any activities / tasks involving lifting and or lowering operations are attempted a task risk assessment must be completed and the findings used to formulate lifting plans where appropriate in accordance with LOLER.

Any cargo baskets or loads with configurations that could cause significant danger to personnel or property must be notified by the vendor to the quayside, vessel or from shore to offshore installation to ensure adequate provisions and a written agreement is reached before transit.

It is recommended that a planning meeting is convened on the vessel and a loading plan produced which the vessel master should communicate to focal point or crane operators at the quayside or offshore installations. Quayside and offshore installations must also plan for the basket(s) with adequate provisions made to ensure sufficient deck space or landing areas are prepared.

*Note: Further guidance is given in the Step Change Lifting and Mechanical Guidelines.*

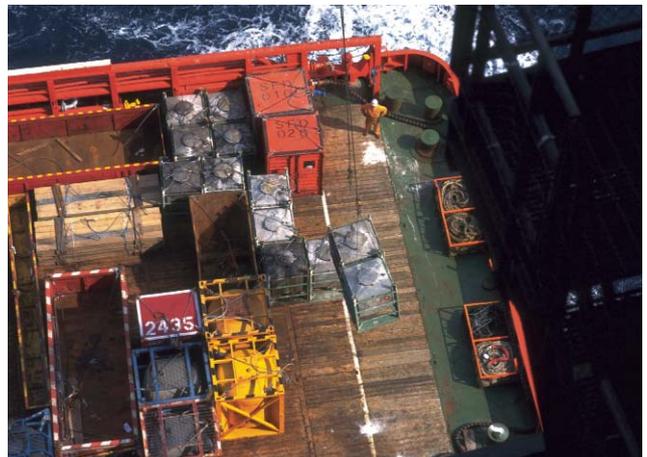
Materials controllers or other so designated persons must prepare a manifest with an accurate basket weight and sizes recorded and communicate to the crane operator.

A pre-planned meeting shall take place prior to the loading or unloading of any vessel. The outcome must be clearly communicated to all personnel involved with the lift. The lay-down area for the offloaded cargo should be clearly identified and communicated to the deck crew prior to the load being offloaded.

Quayside or Deck operations will require a minimum number of personnel appropriate to the task, one will be agreed as the nominated banksman. Supply vessel deck operations shall be in accordance with vessel operator's procedures.

## 16.3 General Workings of Supply Vessels

The UKOOA/Chamber of Shipping Guidelines for the Safety Management and Operation of Offshore Support Vessels Issue 4, detail the general workings of supply vessels.



Supply vessel offloading cargo.

## 16.4 Unloading Cargo Baskets Onshore / Offshore

The UKOOA Guidelines for the Safe Packing and Handling of Cargo to and from Offshore Locations details the necessary precautions to be taken during operations.

Consideration should be given to the positioning of the cargo basket when the task of unloading is to be conducted with safe adequate access and egress to and from the basket.

- 1) It is not advisable to access the cargo basket unless it is absolutely necessary and only after it has been suitably risk assessed.
- 2) Non-slip mats or other access means can be used.
- 3) Personnel shall not remain in the cargo basket during loading/unloading operations of basket contents.
- 4) On completion of lifting operations the Lift Eye/Master link should be positioned in such a manner to allow unobstructed access to the link or eye for future lifting operations.

Check that adequate provisions have been made to ensure deck space availability and if necessary, re-arrange existing deck cargo to make space for the unloaded items with provisions made for sufficient dunnage (wood).

No lifting operation shall commence without all personnel involved in the operation being fully conversant with the hazards associated with handling the lift. If at any time during the lifting operation there is a deviation from the original plan or an unusual or unsafe event is observed the lift operation must be safely stopped and a re-assessment carried out prior to re-commencement of the operation.



*Prearranged deck cargo to accommodate cargo baskets.*

# 17 stacking offshore

## 17.1 Additional Deck Cargo Basket Stacking Provisions

Avoid stacking baskets as far as reasonably practicable.

Each site's deck-management (lifting management) standards must specify whether stacking is allowed at that site.

Ensure that the cargo basket is suitable for stacking and the basket should be marked to identify its stacking acceptability i.e. Type A, B or C ascertain if there is a stacking height restriction on the baskets and any if any other local rules are in place.

Where stacking is allowed by site deck / lifting management standards, then baskets may only be stacked when: -

A written lift plan and risk assessment pertinent to the specific operation is in force and communicated to those involved with the operation (Ref. Step Change Lifting and Mechanical Handling Guidelines):

- 1) The cargo baskets are designed and built to be stacked on each other in accordance with these guidelines (See section 8.0):
- 2) Use of dunnage is limited to protecting deck surfaces where single blocks of wood act as soft pads taking direct vertical load.
- 3) Only baskets of the same width may be stacked on top of one another.
- 4) The basket is not stacked on an uneven surface that is likely to cause basket distortion.

- 5) Under no circumstances may dunnage or other baulks of wood or similar be used to stack baskets.

Weather and installation characteristics pitch, roll and heave must be taken into account. If there is any doubt as to whether stacking can be achieved safely due to rig motion the task must be immediately stopped and suspended until environment factors improve.

Deck loading shall be checked prior to stacking any cargo baskets.

When cargo baskets are stacked safe access shall be made available to the lifting equipment. No person shall attempt to unload a cargo basket, which is stacked.

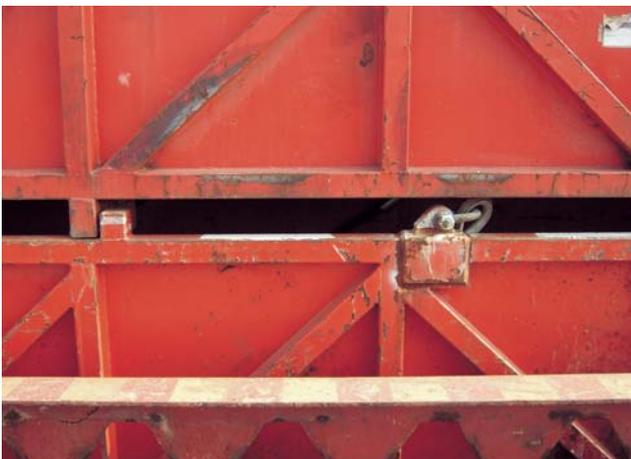
The banksman shall communicate with the deck crew who must exercise care to keep clear of the basket during manoeuvring. Tag lines may be attached to assist the crane operator when manoeuvring.

Deck crew shall only approach a basket when instructed to do so by the banksman and when the basket is landed in the correct position and the load removed from the crane.

Deck crew when assisting in any stacking of cargo baskets shall limit manual intervention at all times to avoid the hazards associated with potential hand / finger injuries.

Baskets to be stacked will be limited to a maximum of two baskets high.

Stacking is not permissible on Ships.



*Cargo baskets of the same width stacked.*

# 18 references

- 1 EN12079: 1999 Offshore Containers - Design construction, Testing, inspection and marking.
- 2 DNV CN2.7-1 Offshore Containers (May 1995).
- 3 UKOOA Guidelines for the Safe Packing and Handling of Cargo to and from Offshore Locations (Issue 2 November 2002).
- 4 IMO Circular MSC / Circ. 860 "Guidelines for the Approval of Offshore Containers handled in Open Seas (22 May 1998).
- 5 NPD Safety Notice 1/02 dated 18 November 2002.
- 6 UKOOA/Chamber of Shipping Guidelines for the Safe Management and Operation of Offshore Support Vessels (Issue 4 November 2002).
- 7 Step Change in Safety Lifting and Mechanical Handling Guidelines 2003.
- 8 Step Change Task Risk Assessment Guide (2nd edition 2003).

## Acknowledgements

Step Change would like to thank the following organisations for their contributions in developing this guidance:

ABB Vetco Gray UK Ltd  
AMEC Upstream Oil and Gas  
ASCO  
Baker Hughes Inteq  
BP  
Conserve Oilfield Services Ltd  
CTC Containers  
DNV  
Expro Group  
KCA Deutag  
Marathon  
Schlumberger  
Seaforth Maritime  
Shell Exploration and Production UK  
Sparrows Offshore Services Ltd  
Swire Oilfield Services  
Talisman  
Transocean  
Weatherford UK Ltd  
Ferguson Seacabs Limited



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