

# SA Masterclass on Special Cargo

## Handling



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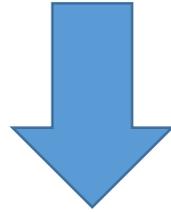
Trainer  
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### Topics covered

- Dangerous Goods/Hazardous Goods
- Heavy/Outsized cargo or Out of Gauge (OOG)
- Perishable Cargo/ Reefer Cargo

# Heavy over sized cargo or Out Of Gauge cargo

**OOG**



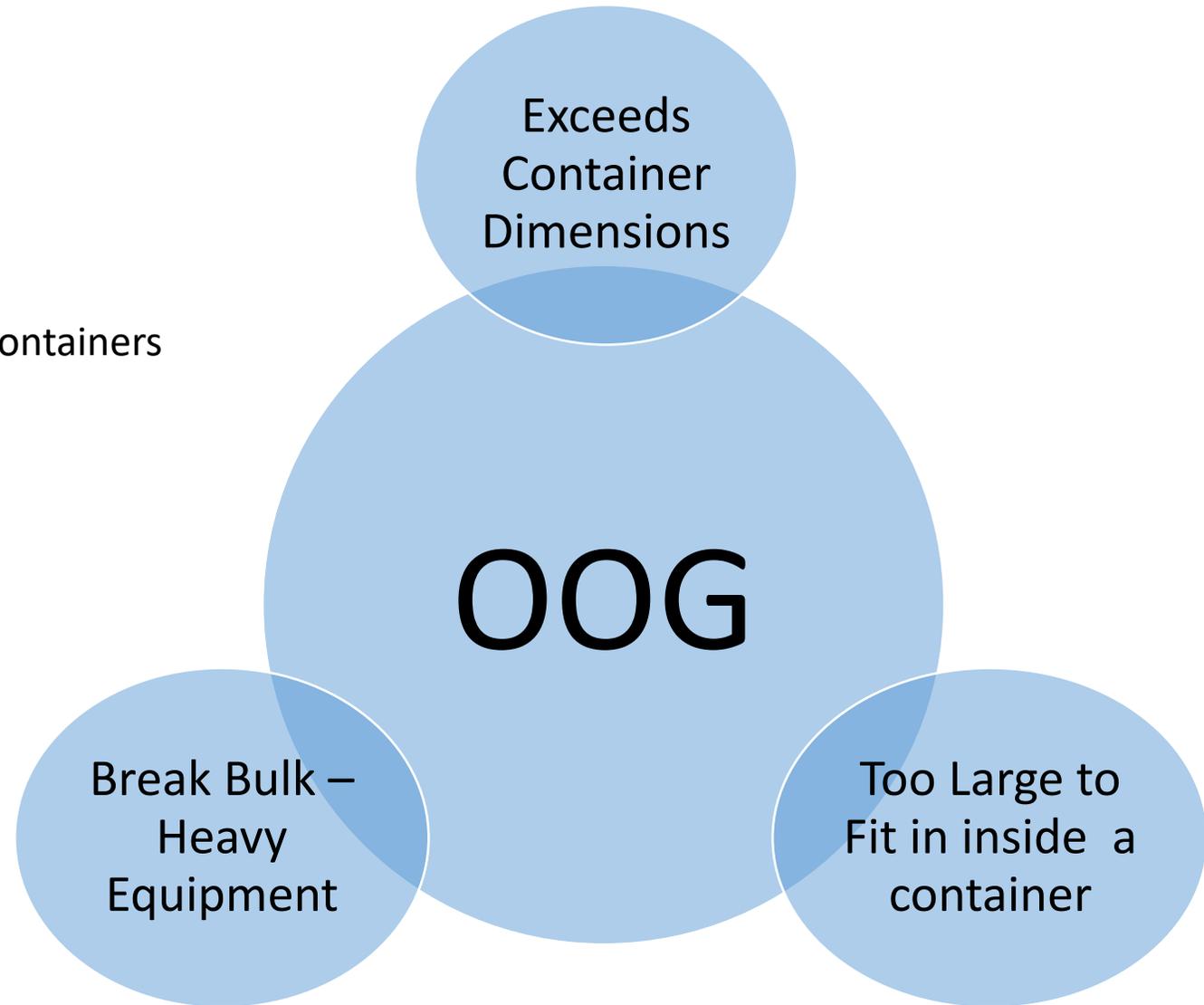
**OOG** means cargos which are not suitably fitted inside a container. Such cargo can be heavy machinery, spare parts, boats, yachts etc.

**OOG** are usually loaded under deck inside the cargo hold. It can also be loaded on-top of flat rack containers, or by using wooden dunnage.

**Out of Gauge (OOG)** cargo is any cargo that can not be loaded into six-sided shipping containers simply by being too large. The term is a very loose classification of all cargo with dimensions beyond the maximum container dimensions.

A shipment which exceeds the dimensions of standard containers by being

over height,  
over length and/or  
over width.





## Examples for OOG



# EXAMPLES FOR BREAK BULK - OOG



Break Bulk is loaded across multiple flat racks on a vessel and secure it by providing lashing

# What we intend to cover ?

- Types of Containers for carriage of OOG
- Mandatory requirements when making the booking for sea carriage
- Safety requirements & why we need these?
- Container ship operation in handling OOG
- Break Bulk vs OOG
- Basic determination of Freight for OOG
- Role of the shipper & FWDR
- Role of the carrier
- Other allied services – Port & Customs

# Types of Containers for carriage of OOG

- Flat Racks
- Open tops
- Open Sides – Sides open
- Artificial Tween Decks ( Plat Forms)
- Collapsible Flat Racks
- Flat Racks with fixed corners



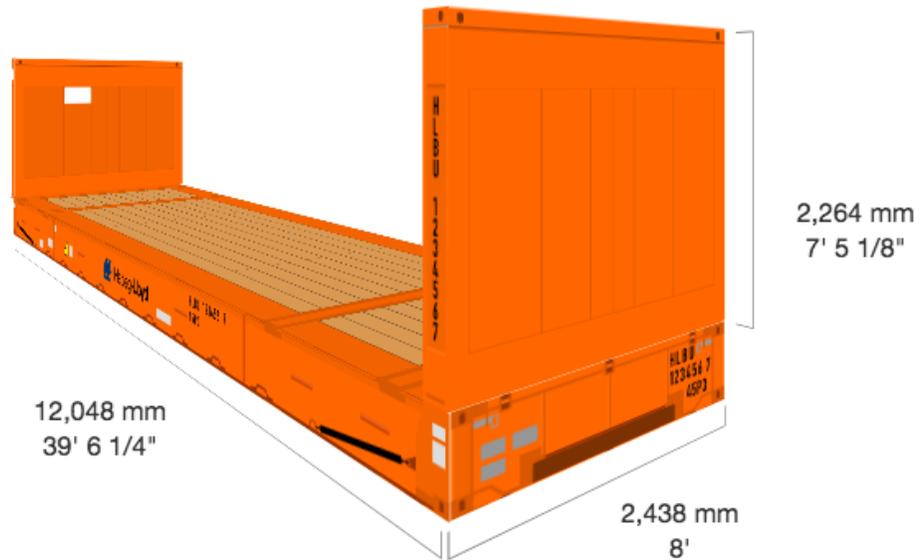
# Flat Racks

This equipment is suitable for top or side loading and ideal for items such as heavy machinery, pipes and boats. If required, two or more flat racks can be connected, depending on the size of your cargo.

- 20ft Flat Racks



- 40ft Flat Racks



# Open tops

They are equipped with removable roof bows and tarpaulin covers, and the cargo can easily be secured with lashing bars and bull rings.

- 20ft Open Tops



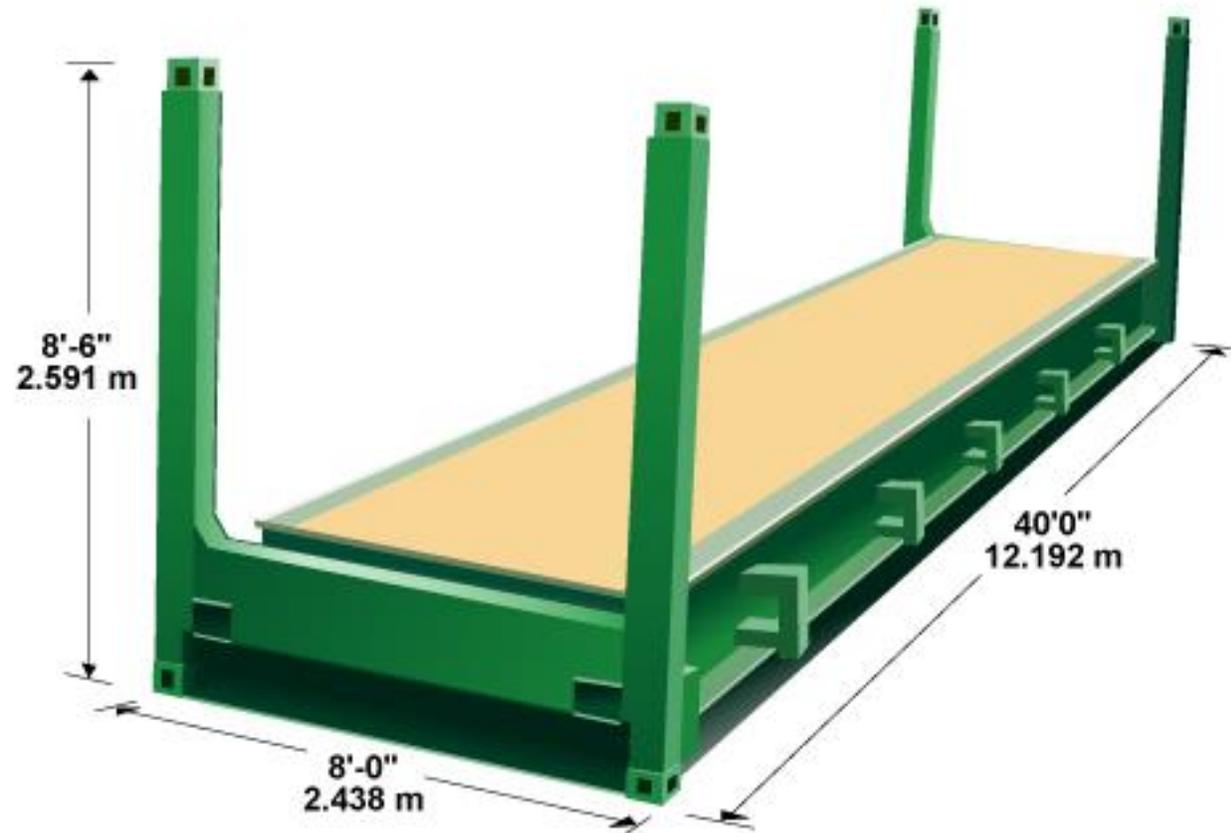
- 40ft Open Tops



# Collapsible Flat Racks



# Flat Racks with fixed corners



# Artificial Tween Decks - ATD ( Plat Forms)



# Open Sides – Sides open

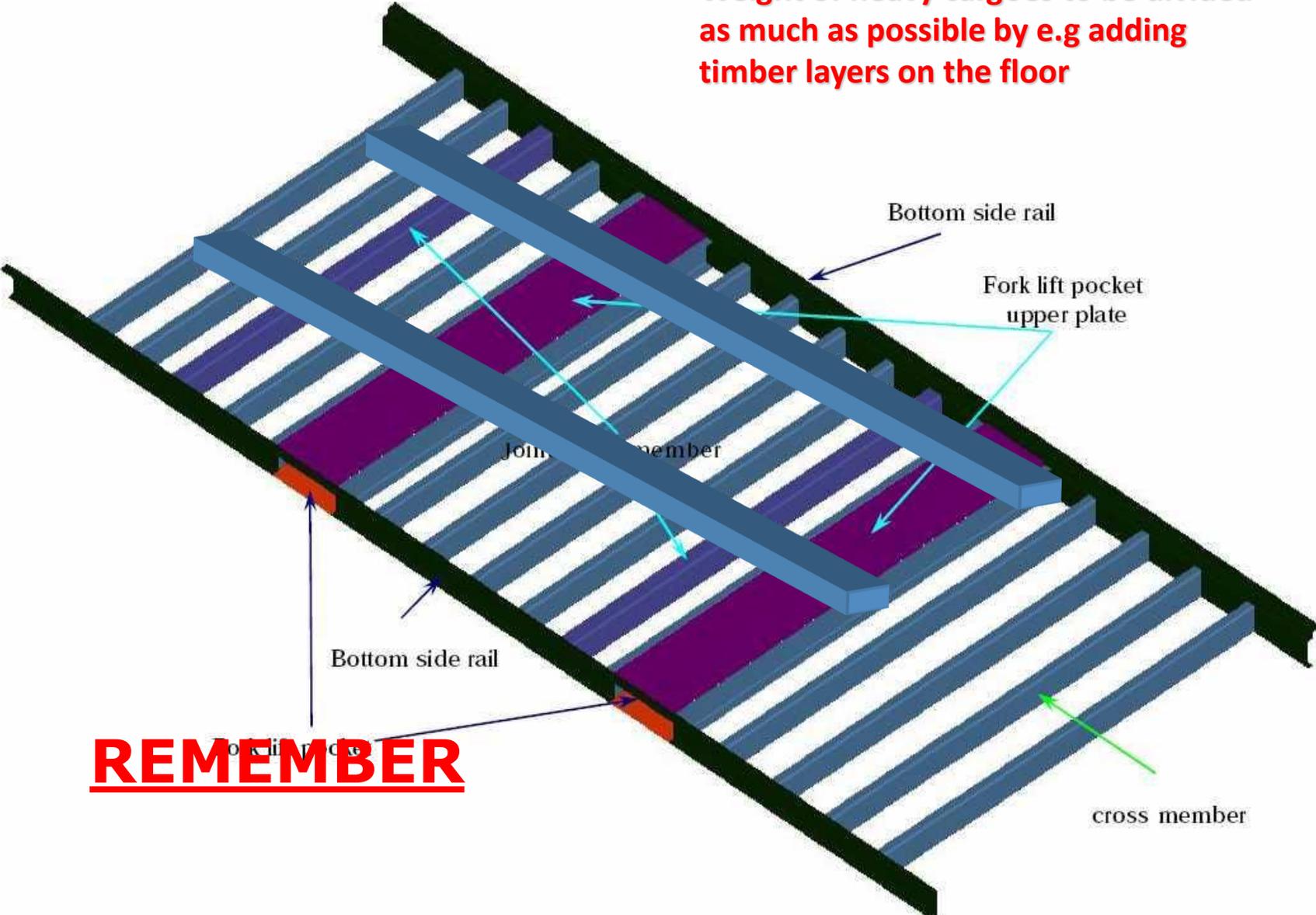


# What You Need to Know About Out-of-Gauge Shipping

- 1. Identification of the cargo & its type** – Can it be loaded in containers as unitized or to load on roll-on/roll-off ship as is , This is a method used to ship heavy machinery such as construction vehicles overseas. **Ask from your expertise or point of contact at the Shipping line.**
- 2. Cargo needs to be positioned in an optimal manner**, using the appropriate bracketing and bracing (and placed on a bed of timber) that will protect the load and also evenly distribute the weight through out the container.
- 3. Payloads** refer to the load carrying capacity (measured by weight) of a shipping vessel. When the cargo falls within the payload constraints of the vessel it is most likely placed within the center point of the shipping container, with the center of gravity placed at the lowest possible point, to ensure that the weight is evenly distributed.
- 4. If cargo exceeds payload, it becomes absolutely essential for the experts to be brought in.**

**Dunnage** - loose wood, matting, or similar material used to keep a cargo in position in a ship's hold."effective bracing, blocking, and use of dunnage is essential"

**Weight of heavy cargoes to be divided as much as possible by e.g adding timber layers on the floor**



**REMEMBER**

# **Mandatory requirements when making the booking for sea carriage**

- Booking of OOG cargo for sea carriage
- Handling Equipment for maneuvering
- Dun age & Stowing
- Transportation
- Stevedoring & port Handling
- Safety requirements & why we need these?

# **Booking of OOG cargo for sea carriage**

## Notification to the carrier

1. Name of the Shipper or FWDR
2. Cargo description – Shipper 's Name/Sketch/Photo
3. Dimensions – Length , Width( Breath), Height
4. Gross weight ( Net w/t + Packaging w/t )
5. Catalogues/Diagrams / Technical Drawing
6. Cargo readiness date
7. Intended loading date per the vessel
8. Port of Loading
9. Port of Discharge
10. Place of Delivery

# Handling Equipment for maneuvering

- Machinery – mobile cranes/Fork Lifts/ Spreaders
- Lifting Gears – Lifting Belts / Lifting Chains
- Lashing Gears – Wires / Webs / Chains



# Dunnage & Stowing

Wooden Parts / Planks & Logs can be used to

1. Secure to avoid cargo being rolled or moved
2. Impose a friction between the pieces of cargo
3. Spread the weight to be evenly distributed on the floor



# Loading on to Flat Rack



Notice the position of the forks

# Positioning on the flat rack



What is the most important thing to do?

# Lashing and Choking



**On both sides, FRONT & BACK**



**And also LEFT &  
RIGHT**

# Lashing with Belts, Cables & Turnbuckles



**Belts**

**Turnbuckles & Cables**

# Transportation of OOG

ROAD

RAIL

**ROAD** – Flat Beds , Prime Movers/Trailers , Multi Axle Trailers

**RAIL** - Specially constructed Rail Compartment with Cell Guides



# What are the best practices for transporting oversized cargo?

- **Define the dimensions and weight** - The first step in transporting oversized cargo is to define its dimensions and weight accurately. This will help you determine the type and size of container, trailer, or flatbed that you need, as well as the route and mode of transportation
- **Choose the right container and equipment**- The next step is to choose the right container and equipment for your oversized cargo
- **Plan the loading and unloading process** - The third step is to plan the loading and unloading process carefully. You should coordinate with the shippers, receivers, and handlers of your oversized cargo to ensure that they have the necessary skills, equipment, and space to load and unload your cargo safely and efficiently.
- **Monitor and communicate the status** - The fourth step is to monitor and communicate the status of your oversized cargo throughout the transportation process. You should use tracking and tracing tools, such as GPS, RFID, or barcode scanners, to keep track of the location, condition, and movement of your cargo.
- **Evaluate and improve the performance** - The final step is to evaluate and improve the performance of your oversized cargo transportation. You should collect and analyze the data and feedback from the transportation process, such as the time, cost, quality, and safety of your cargo transportation.

# Stevedoring & port Handling

Port stevedores are specialized in oversized cargo, like challenges. They usually never complain about your cargo being out-of-gauge. They are experienced and qualified to find a solution.



# Stevedoring & port Handling – continued.....

Stevedoring can be done by using

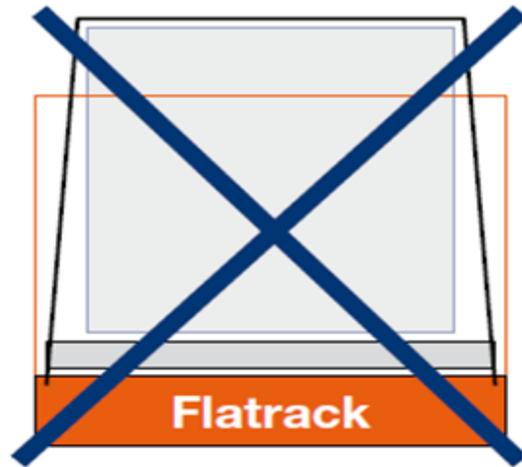
1. Shore Based Cranes – Gantries/ Lifting Cranes
2. Ship Based Cranes - Ships Gears in conventional vessels



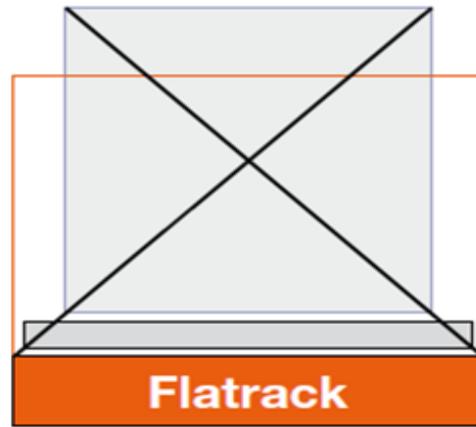
If cargo is in excess of 8 meters? – Transporting of super over dimension cargo.



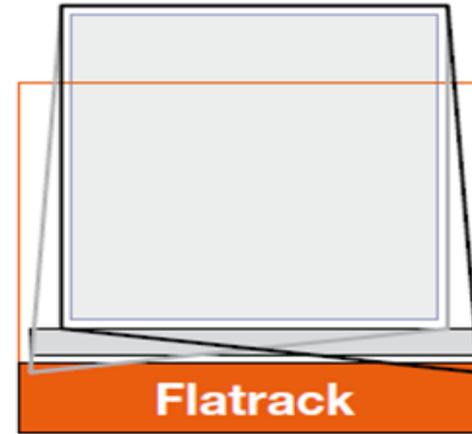
- Cargo is always discharged by using slings/chains
- Cargo is placing on a Ten-wheeler truck.
- Truck is taken to the BQ area along with the cargo where wooden beams or steel girders are then laid-out for load distribution equally.
- Securing cargo with proper lashing is ensured prior to take away from port.



Lashing just over the cargo is **NOT** sufficient. The cargo can slip sideways



Cross lashing is effective if there are lashing eyes on the cargo

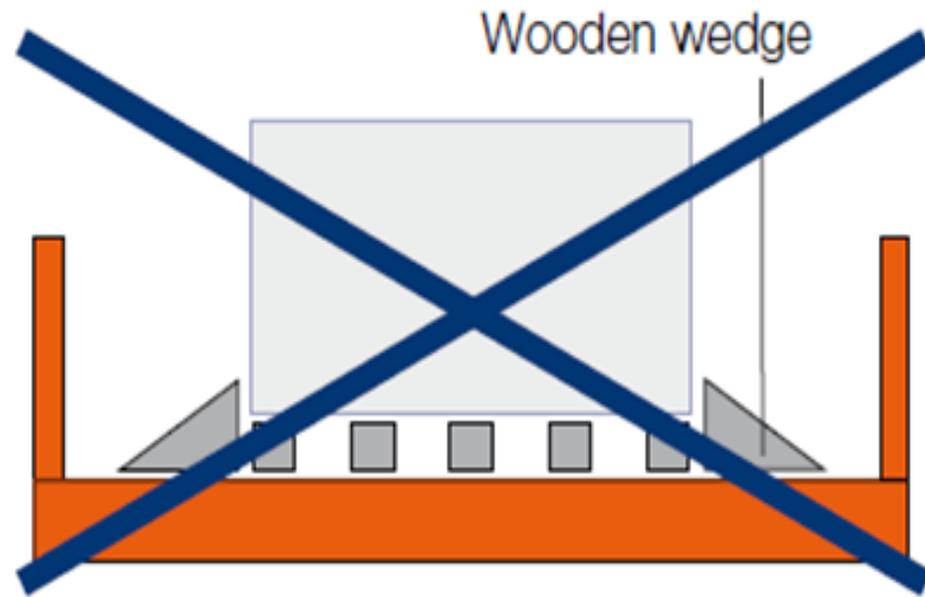


Loop lashings are recommended wherever possible. Each loop starts and ends at the same side

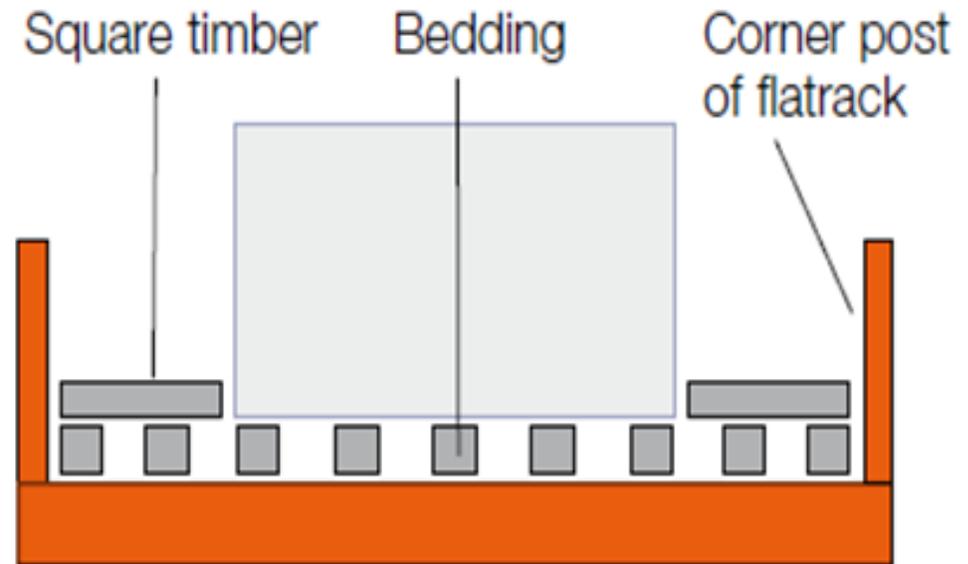
Since the industry has seen many newcomers with little to no experience in the industry, there has been high rise in the accidents occurring en-route.

The most common reason is the lack of basic safety precautions, poor knowledge of en-route obstacles and lack of workforce training

Most flat racks have notches for stanchions along the side. Ordinary steel beams, inserted vertically into these holes, can be used as chocking against slipping sideways, for example, for lengthy items such as pipes.

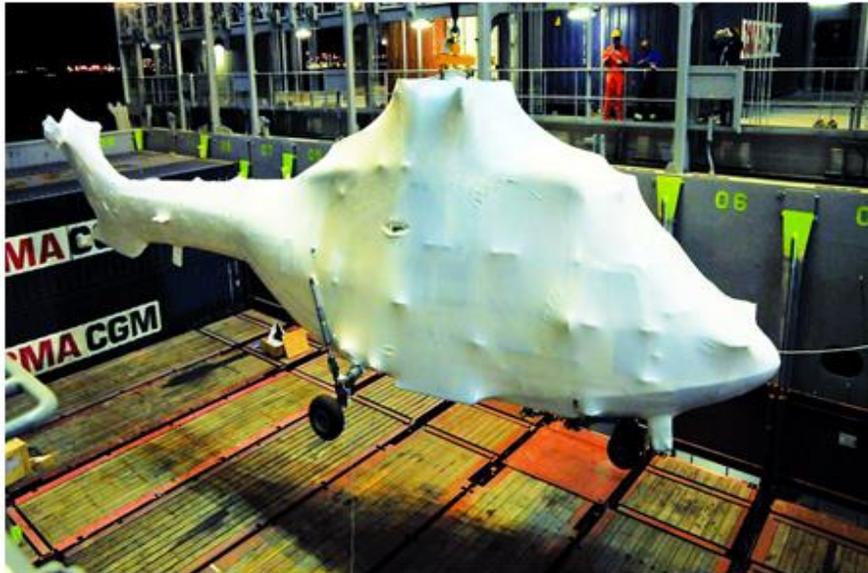


Wooden wedges just nailed down to secure cargo against movement lengthwise are **NOT** sufficient



Horizontal square timber must be placed between the cargo and the corner posts to chock the cargo

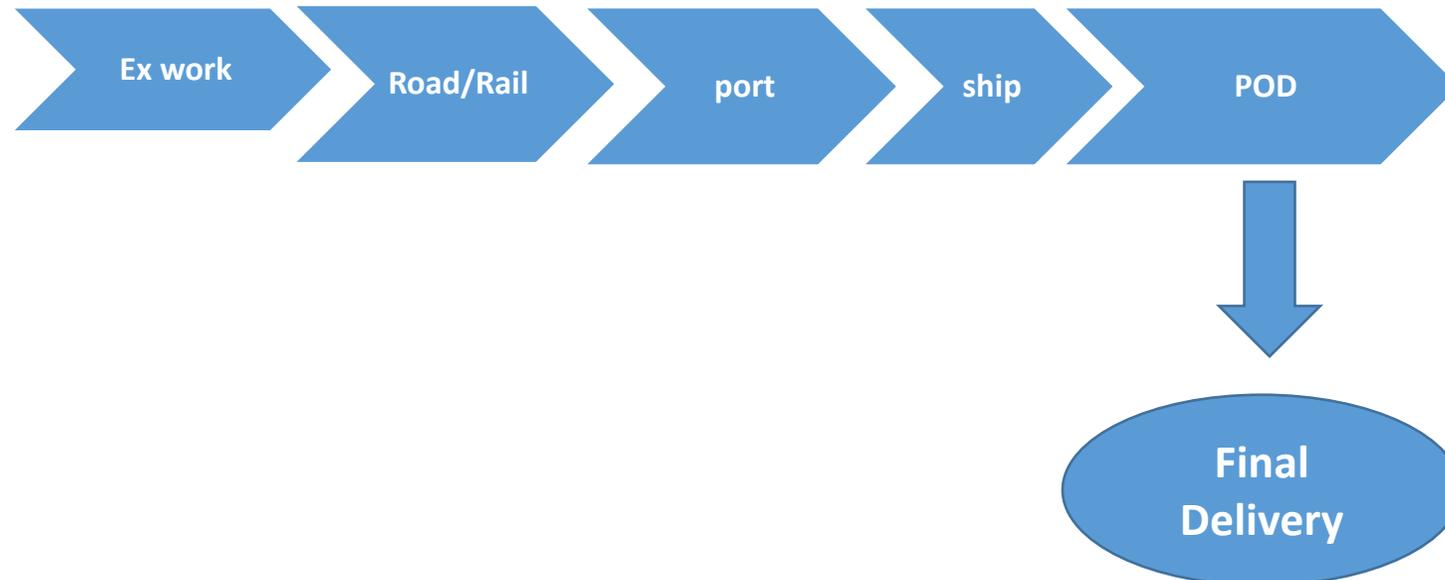
Some examples of types of cargo carried are given below.



# Safety requirements & why we need these?

## Safety Requirements:-

1. Both academic & Practical experienced people to handle
2. Usage of Proper handling equipment – Compliance Fitness
3. Ensuring E2E – End to End safety starting from place of origin



# Why we need Safety Requirements ?

1. Eliminate or mitigate Risk on life, property & environment
2. Ensure seamless operation
3. Increase quality of work
4. Avoid claims against cargo damage



# Break Bulk cargo & OOG

What is the difference between break bulk and oog?

Out of Gauge cargo includes things like propellers, flanges or trucks. Break Bulk significantly exceeds the size and/or weight of a standard container and is therefore handled as non-unitized cargo and normally placed on a bed of flat racks with a large number of lashing points.





# Vessel operation in handling OOG

## When cargo arrives at Port/Terminal

1. Cargo is un-loaded by the port/Terminal
2. Stacking is done at a separate location
3. Carrier supervision is carried out ensuring
  - Survey report ( if need be )
  - Item list / packing list
  - Proper lashing & securing is done for safety of all

# Break Bulk ship operation handling OOG



# Container ship operation handling OOG



Out of Gauge  
and Heavy Lift Cargo





If you look at the above image of a fully loaded ship, you can see how close the containers are loaded and you can see that there is no space for protrusion of any kind as the boxes are tightly stowed..

In such case the above OOG container is loaded on deck, no containers can be loaded to the left, right and on top of this container..

# Basic determination of Freight for OOG

Freight rate CMB/FXS = usd 800 per ffe + DTHC

Freight rate per FFE = usd 800 + DTHC

Number of Displacements = 8ffe ( with killing of adjoining slots)

Freight rate per OOG unit = 8 x usd 800 + DTHC  
= usd 6400 + DTHC

This may differ subject to any extra handling at T/S port or at Port of Discharge

This loss of space caused to the shipping line by this OOG cargo is called LOST SLOTS..

The calculation of the number of lost slots and the cost for the same will depend on various factors like

- How full the ship is
- How many slots will be lost
- Where would be the most effective and easiest placement of this container to facilitate easy access for loading and discharge
- The port rotation of the ship
- Whether there will be any re-stows en route or not

The shipping line has to take all of this into account before they advise the client the details of the lost slots and its associated costs..

# Role of the shipper & FWDR

Ensure to :-

- Select the right container for carriage
- Seaworthy packing & proper lashing/securing
- Provide correct information to the carrier
- Use the right type of vehicle meeting all compliances
- Close co-ordination with the carrier's go to person
- Prepare relevant documents – such as survey report/VGM/com invoice / Packing List/Certificate of Origin / Cus Dec etc..

# Role of the carrier

## Ensuring :-

- Necessary guidance & advise on phone or at site
- To release a seaworthy container with all devices attached to it
- A transparency in stowage when placing container on board the ship – Number of killed slots to accommodate the OOG shipment
- Offer compatible & comparable Freight Charge for carriage
- Close co-ordination with the shipper/FWDR
- Issuance of post shipment document - OBL

# Other allied services – Port & Customs

## PORT

- Supply proper machinery
- Or Deploy from out side – 3<sup>rd</sup> party
- Stevedoring section to liaise
- Supervision of cargo at the stack



## CUSTOMS

- Approval to leave or enter
- Require cargo declaration
- Physical supervision/examination
- Collect relevant duties
- Collect Government taxes



# Oversized Cargo in Air Freight

A cargo aircraft (also known as freight aircraft, freighter, airlifter or cargo jet) is a fixed-wing aircraft that is designed or converted for the carriage of cargo rather than passengers. Such aircraft generally feature one or more large doors for loading cargo. Passenger amenities are removed or not installed, although there are usually basic comfort facilities for the crew such as a galley, lavatory, and bunks in larger planes.





One of the biggest disadvantages of air freight is the limit on the total weight of the cargo, the weight of each item, and their dimensions. It should also be noted that the cost of air freight, unlike other ways, is measured by the weight of the oversized cargo.

# What is oversized for air freight?

Heavy or oversized cargoes are those that exceed standard measurements and the limits of transport options. Typically, loads that have and exceed the following measurements are considered heavy and oversized: Width of over 8.5 feet. Height of over 13.6 feet.

Maximum cargo dimensions for standard air freight are 2.44 x 3.15m (96 x 125 in). Longer/wider cargo can be transported but may need to be packed on special equipment.

Oversized cargo cannot be loaded on standards ULDs( Unit Load Device) and same would require special charter services.

Then what is the size limit for air cargo?

The main cargo hold of most air cargo aircraft has a maximum height of 305 cm. Cargo with a height between 270 cm and 300 cm is often transported by international air freight. For oversized cargo, the actual air transport height limit can reach 305 cm, or approximately 300 cm.

1 feet = 30.48 cm

Below are some key points that you need to remember when handling oversized cargo by air – same like Sea Freight

- Choose the right carrier for your needs.
- Plan your route and obtain any necessary permits.
- Prepare your cargo for shipping.
- Coordinate with the carrier.
- Monitor your shipment

# Top 9 Tips to Consider When Transporting Oversized Cargo by Air

- Size, Weight and Dimensions
- Lashing and lifting
- Packaging
- Loading/ Equipment
- Flight Environment
- Site Visits
- Airport – Permits, Infrastructure, and Manpower
- Post-flight processing
- Dangerous Cargo









SIDE DUMP

RA-7

**Q & A**

A person wearing a dark suit jacket and a light-colored shirt is holding a white rectangular sign with both hands. The sign has the words "Thank You" written in a bold, black, serif font, centered on the page. The background is plain white.

**Thank  
You**