AFFA

Project Transportation Management

PART V

Cargo Transportation

OBJECTIVES

The objective of this section is to discuss the various alternatives avaialble to cargo movements and the "BASKET" system and also movements via AIRCARGO TRANSPORTATION.

Cargo Transportation

- With very keen competition in every aspect of freighting; and with costs being the main concern;

- Players begin to offer more efficient mode of handling based both on productivity and safety of the cargo;

- In the oil and gas industry, the concept of **" Basket"** is now being used: The basic concept is not far from containerization;

- With specific dimensions to meet the need of each project; with guidelines being offered to operators: under EN12079 and DNV.CN2.7-1

Cargo Transportation

**Cargo Basket
on board a Truck**

Courtesy: Step-Change in Safety

Cargo Transportation

Cargo Baskets after loaded into a ship

Courtesy: Step-Change in Safety

Cargo Transportation

Cargo Basket

- An open top container for general or special cargo.

- Normally not more than 1830mm wide.

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.

Cargo Transportation

Lengths

Lengths of baskets shall be standardized as follows:

10metres, 12metres, 14metres and 16metres – maximum

External Dimension

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

Widths

- Widths of baskets shall be standardized as follows:
- **610mm, 1220mm and 1830mm** - external dimension.
- Note: Widths were derived based on compatibility for road transport.

Cargo Transportation

Heights

- Baskets greater than or equal to 10 metre in length shall not exceed 1120mm at top rail excluding pad eyes and stacking mechanism.

- 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 semisubmersibles).

- 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

Cargo Transportation

Eye-Pads on the Basket
For quick and
Easy lifting

Courtesy: Step-Change in Safety

Cargo Transportation

Dimensions	Length			
Width	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.

Cargo Transportation

It is recognized 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).

Cargo Transportation

Basket being

Lifted by Fork-lift

Courtesy" Step-Change in Safety

Cargo Transportation

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.

5. 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

Cargo Transportation

Specially Designed Fork-lift device may be used to Check balance

Courtesy: Step-Change in Safety

Cargo Transportation

- Though such handling appears specifically designed for the oil and gas industry;

- There is no doubt that it can be used for any project transportation if so required;

- The basic aim is to be able to transport the cargo from point of manufacture to the site where it is required with safety and fast;

- The approach towards standardized units simply means simpler handling and allow space saving; being stackable

Cargo Transportation

AIRCARGO TRANSPORTATION

- For air freight there are special large-volume aircrafts that carries up to 250 tons of freight.

- Dedicated heavy-lift air cargo carriers are those that operate freighter aircraft. Some, like Cargolux, operate only freighters and do not provide any passenger service at all.

- Others, like Singapore Airlines and Cathay Pacific Air Lines, may be best known as passenger airlines, but they operate freighter as well as passenger aircraft.

Cargo Transportation

Aircraft loading

From the front

Courtesy: en.Wikipedia.org

Cargo Transportation

Air lifted huge trucks

Courtesy: defense.gov

Loading from the
aft of the aircraft

Courtesy: kyivpost.com

Cargo Transportation

The An-124 lifted 171.219 ton up to a height of 10,750m in 1985!

Courtesy: Guy Martin 2011

Cargo Transportation

Details of the An-124-100 aircraft

- "The An-124 Ruslan, designed by the Antonov ASTC in Kiev, Ukraine, is a very large cargo aircraft."

- A new version, the An-124-100M-150, is developed by Aviastar with investment from the International Finance Corporation. The aircraft payload is increased from 120t to 150t, the take-off weight increased from 392t to 402t and the flight range with 120t cargo increased from 4,650km to 5,400km.

- Courtesy: aerospaceindustry.com

Cargo Transportation

To enhance this module:

- **Case study**;

Based on selected economic/trade Corridors within Asean

And countries with growing trade with Asean

Case studies need not be based on similar cargo type;

It should be based on Asean Region scenario; if possible

Cargo Transportation

- With the courtesy of Wilhelmsen Ships Service completes project cargo management contract in Jeddah, Saudi Arabia

- 27.08.2010 (Ships Service)

- "Wilhelmsen Ships Service undertook a significant project in Saudi Arabia when the company moved equipment and parts totalling some 32,000 tons over difficult road networks destined for the construction site of the new Al Safwa cement plant.

- The consignment was mainly moved to the site from vessels in the ports of Jeddah, about 160 km from Jeddah, and heavy lifts from Port of Yanbu, which lies some 260km to the north on the Red Sea coast. ..

Cargo Transportation

- ……..The contract was awarded by one of the world's largest cement producers and was handled by Wilhelmsen Ships Service's Jeddah office.

- A complex operation involved road transportation of 160 km from Jeddah and 260 km from Yanbu.

- The Wilhelmsen Ships Service team, headed by Johan Ostnes, carried out a road survey prior to moving the cargo, ascertaining that the road was in good condition to take the weight of the heavy lifts.

- With the help of Saudi Arabia's Department of Transport modifications were made at two junctions for the heavy lifts to be able to pass….."

Cargo Transportation

- "………The surface was good, apart from the last 10 km which was dirt road, which made for a challenging adventure.

- Wilhelmsen Ships Service was also faced with resolving a number of logistical challenges regarding local regulations and communication. Wilhelmsen Insurance Services provided insurance for the total transport. "

Cargo Transportation

- "….. The cargo - some tens of thousands of individual items - ranged from heavy lift items, some weighting up to 180 tons, to nuts and bolts, and was in total worth some $600 million US.

- The transportation was carried out over a period of 18 months and was recently completed.

- The Cement Plant has commenced its initial test run and is expected to start production next month (September 2010).

- The plant will produce around 2 million tons of cement per annum for local use as well as for export."

Cargo Transportation

Heavy Lifts on

the rough road to the site

Courtesy: Wilhelmsen Ship Services

Cargo Transportation

The Site at Al Safwa

Courtesy: w.Wilhelmsen Ship Service

Cargo Transportation

- One may want to refer to the Baltic Exchange which also publishes standard charter party for such ships:

- By visiting their website at : www.bimco.org where one can find the " HEAVYCON – Standard Transportation Contract for Heavy and Voluminous Cargo; originally adopted in 1985.

- A sample copy is also available for reference under : HEAVYLIFT VOY-BIMCO

Cargo Transportation

THANK YOU