

ADDITIONAL
PROJECTS FOR
CONTAINER VESSEL

Q.
10.3.1.

Types of container - Sketch a typical 20 foot container to show the ISO markings.

Ans.

While there are wide variety of kinds of containers from small collapsible type for household goods to large 45 footers carried on container ships, mentioned here is limited to the international freight container for ocean transport classification by use:-

- 1) The general cargo container is the most representative type for generally cargo ~~does~~ doesn't require temperature control. It is generally of closed dry van type used for carrying dry cargoes with corrugated walls & a door at one end. The close end is approximately 4.5 times more stiff in racking strength than the door end.
2. Thermal container is designed for cargo requiring refrigerated or insulated storage covered overall material of low heat transfer such as polystyrene foam.
3. Open top container has a structure to allow stowing & taking out of such cargo length number or heavy, machinery from the top, of the container using handling machines.

The container is to be kept after loading by closing the open top by means of roof beams & tarpaulin.

4. Platform containers is constructed to form a platform only to accommodate heavy article such as machinery, iron, steel etc.
5. Flat rack container (platform based) is designed to long length for heavy cargo such as steel, lumber, pipes etc. Loading & unloading can be accomplished from overhead & sides.
6. Side open container is designed to allow loading & unloading cargo by forklift or other equipment through removable sides gate & may be covered tarpaulin.
7. Car container is purposely built for transport usually with simple construction with frame fitted floor only without sidewalls.
8. Livestock container is for livestock or cattle with windows on side or end walls to facilitate ventilation. on the lower classified into three types.
 - a) Refrigerated (reefer) container is build for refrigerate food stuff such as fruit, meat, fish, vegetable etc.
 - b) Insulated container is build for fruit vegetable etc with insulation structure effective enough to excessive temperature increase so as to keep the freshness of the contents.

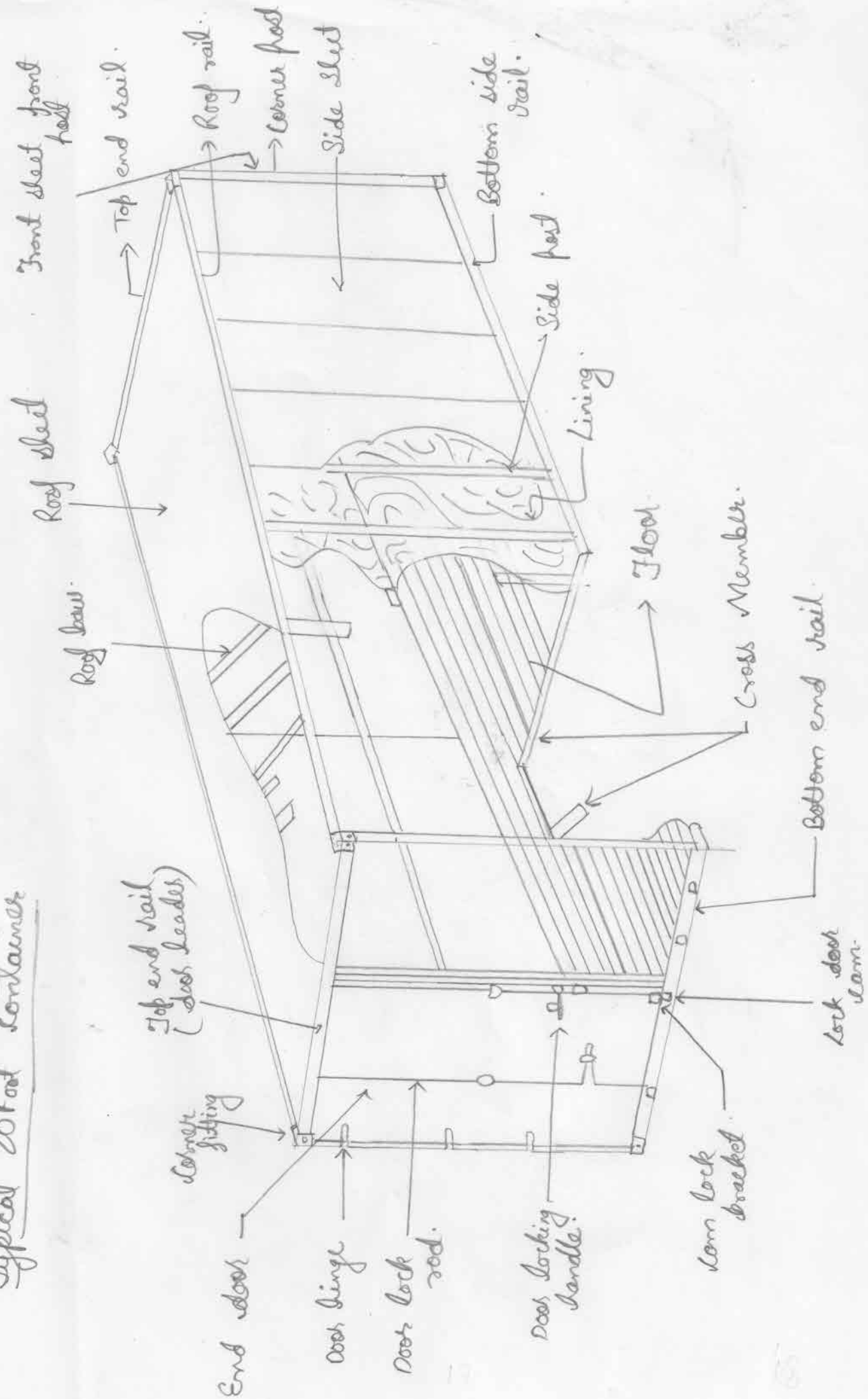
Usually dry ice is used as a medium.

a) Ventilated container is built for allowing air passage by means of apertures on sides or ends for cargo that requires respiration such as fruit or vegetables.

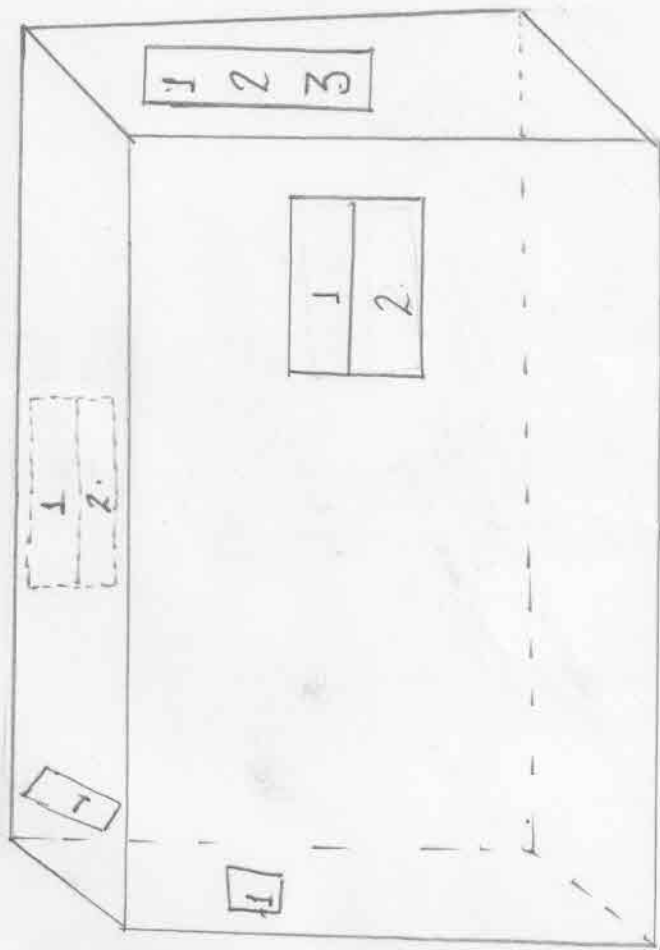
→ Special Type Containers

- Bulk container is designed with features to accommodate grain, fertilizers, chemicals etc. in bulk cargo is loaded through two or three hatches on top & discharged through the hatch on the door first then pulled out by gravity from the doorway.
- Tank container is designed for liquid food liquids, chemical etc. The contents are loaded through a manhole on the top & discharged either from outlet valve by gravity or through the top manhole by suction. Part of sidewall cleaning & draining outlet.
- g) High cube container is designed for carriage of cargo of high volume. Its height usually 9'6" high & 40 feet long with maxm gross weight in accordance with ISO specifications so as to generally meet the capacity of handling & transport equipment. There are also 45 feet long high cube container available.

Typical 20 foot container



ISO MARKING



1. Identification code.
2. Country / size / type code.
3. Operational Specifications.

1. HLCU 247136 [9]

2. DE 22 00
 ↓ ↓ ↓
 Country code Size Type

Q. 10.3.2.

containers stowage plan (including stack weight).
Mention the numbering system of container slots.

Ans.

There are many factors affecting the stowage of a container case as follows:-

- 1) Port rotation.
- 2) IMDG segregation.
- 3) Stack weight.
- 4) Nature of cargo inside.
- 5) Weight of the container.
- 6) IMDG visibility criteria.
- 7) Limitations of the vessel.

1. Port Rotation:-

The container loading plan is planned & prepared by keeping a close watch on containers which are to be discharged at the last port should be loaded at the bottom one hatch. It will be different from planner to planner. The containers to the port which is previous to the last port will be loaded above it & so on.

2. IMDG Segregation

Dangerous cargo (DG) of different class are to loaded as per the international instruction given to the IMDG code vol. 1, 2 & supplement.

3.

Stack Weight

Each hold & hatch covers are made in such a way that it can carry cargo up to fixed weight. Any weight above that weight will cause damage, that fixed weight is stack weight. The plan is prepared in such a way that stack weight does not exceed the prescribed stack weight for that hold or hatch.

4.

Nature of cargo inside

Different type of containers carrying different cargo, therefore they are loaded accordingly. Some IMU cargo containers are loaded away accommodation.

Live stock containers are loaded on deck & not single container should be loaded on top of it.

5.

Weight of container :-

Heavy containers should be loaded at the bottom & the lighter containers to be loaded on top.

IMO Visibility Container :-

Each vessel has fixed tiers to which the containers can be loaded. It is different for different ships.

Limitations of the vessel:-

The limitations of the cargo carrying vessel also to be taken into consideration while planning.

The numbering system of container slot can be better explain by giving example.

a) Slot 360082

Bay - 36 (forty feet container loaded in bay 35/37)

Row - 00 (loaded in midship row)

Tier - 82 (loaded on deck 1st tier)

b) Slot : 270584.

Bay : 27 [twenty feet container loaded on bay
27/29)

Row : 05 (loaded in 3 row from midship to
stbd side)

Tier : 84 (loaded on deck end tier)

c) Slot 240306

Bay: 24 (forty feet container loaded on bay 23/25)

Row: 03 (loaded in 2nd row from midship to stbd side)

Tier: 06 (loaded under deck, 3rd tier)

d) Slot 350402

Bay 35: (twenty feet container loaded on bay 35)

Row: 04 (loaded in 2nd row from midship to port
side)

Tier: 02 (loaded under deck, 1st tier)

86
84
82



08
06
04
02

Q. 10-3-2

Container lashing plan?

Ans.

Contents of ship's lashing plan are as follows:-

1. Safe stowage & securing of containers on deck.
2. Safe stowage & securing of portable tank.
3. Safe stowage & securing of portable receptacles.
4. Safe stowage & securing of wheel based cargo.
5. Safe stowage & securing of heavy cargo items such as locomotives, transformers etc.
6. Safe stowage & securing of heavy metal product.
7. Safe stowage & securing of coiled metal sheet.
8. Safe stowage & securing of metal scrap in bulk.
9. Safe stowage & securing of unit load.

The purpose of ship's lashing plan is to secure cargo in such a way that the ship & person onboard are not at risk.

The safe stowage & securing of cargo depend on proper planning, execution & supervision.

Personnel planning & supervising the stowage & securing of cargo should have a practical knowledge of application & content of ship lashing plan & cargo securing manual.

Measures taken for stowage & security cargo should be based on most severe weather condition.

1. Safe stowage & securing of container not more than 90% of that of bottom container.

All container shall be effectively secured in such a way as to protect them from sliding & tripping. Lashing should be preferably consist of wire rope or chains lashing should be kept where possible under equal tension.

2. Safe stowage & securing of portable tank.

$\alpha_1 \rightarrow$ Favourable angle against sliding.

$\alpha_2 \rightarrow$ Favourable angle against tripping.

Timber should be between the deck & bottom structure of portable tank in order to increase the friction portable attention to tight lashing, grips & clings to prevent weakening through chafing.

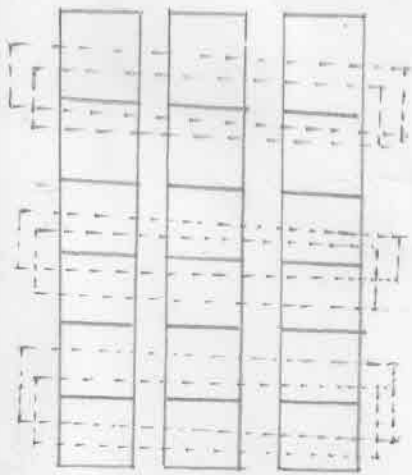
Lashing attached to tanks without securing point should run around the tank & both end of lashing should be secured to same side of tank.

3. Stowage & securing of coiled steel sheet.

Securing of top tier against fore & aft shifting (plan view). The objective to form one large immovable block of coil in hold by lashing them together. In general strip coil in three end rows in top tier should be lashed. When coil are fully lashed cover entire bottom

space are well shared. No lashing required except for locking. All figures shows lashing patterns to lash different types of cargo.

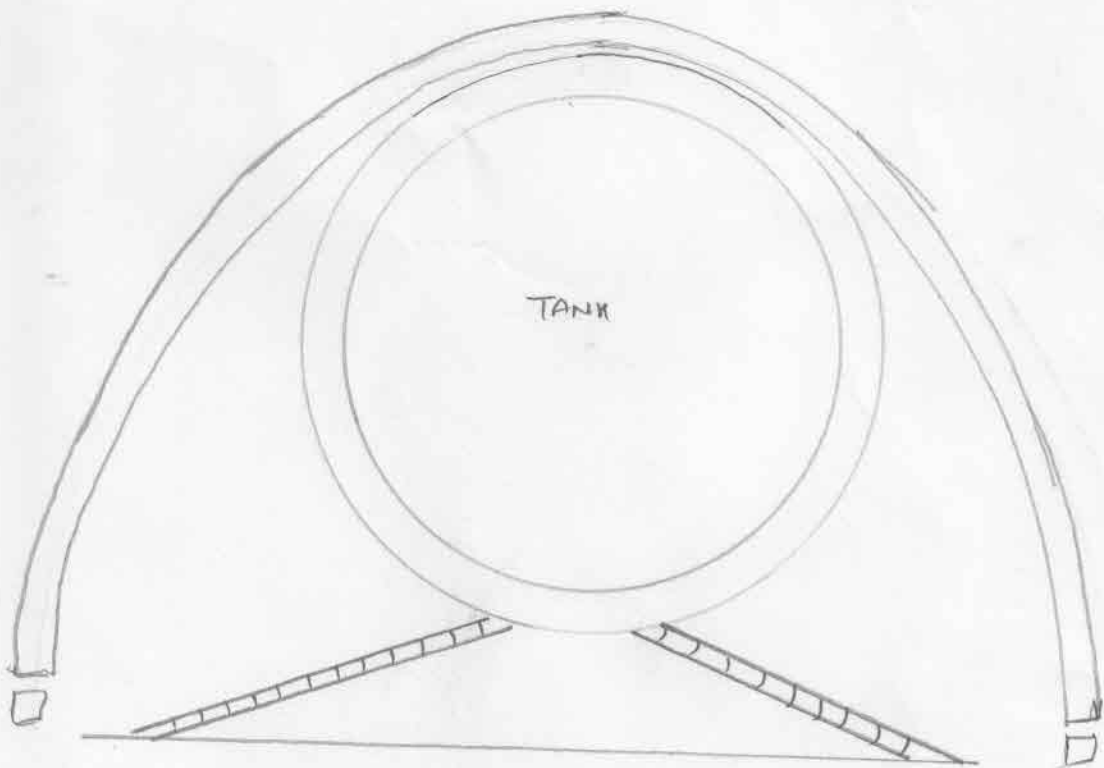
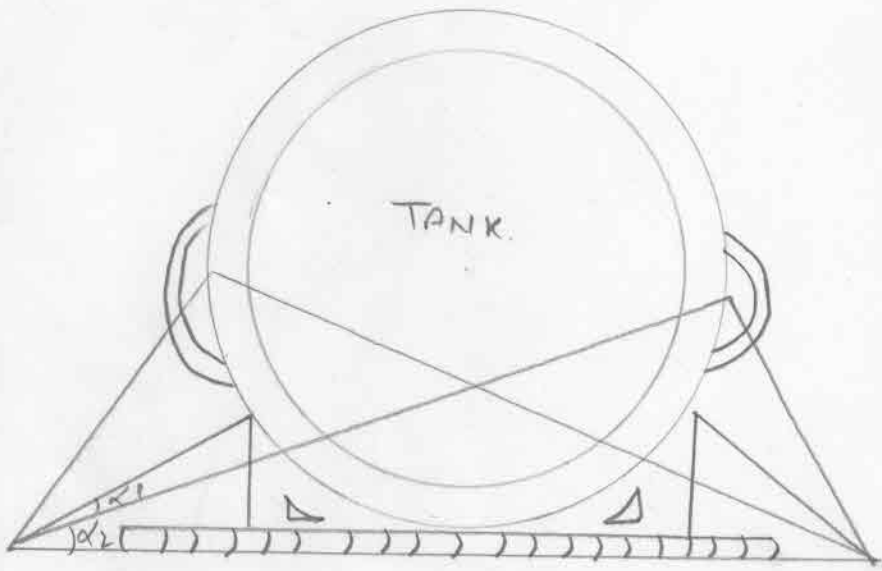
- Lashing can be conventional type using wire steel band or other means.
- Conventional lashing should consist of wire having sufficient tensile strength.
- Wire lashing should be protected against damage from sharp edge.



Olympic lashing.



Wrap lashing



10.3.4.
Q.

Reefer container procedure for carrying out operational checks & recording in Temperature Log.

Ans.

Reefer container are those types of container which is used to carry perishable cargoes. The container itself is a reefer plant & it requires only electric power sockets. Before loading the reefer container the power sockets should be checked for power supply & has to ensure the un-interrupted power supply & securing of sockets for short circuit is provided.

Before loading a reefer container the reefer manifest is to be delivered to the chief officer, it will include the cargo inside, its port of loading, port of discharging, set temperature etc. information are present. The chief officer has to verify the present temperature with the set temperature. When connected to a power supply & same to be noted down. If two there is large different between these two, the authorities should be informed.

The host law card is to be checked to know that history of the container. If it found that it has a history of breakdowns etc. Special attention is to be given to it.

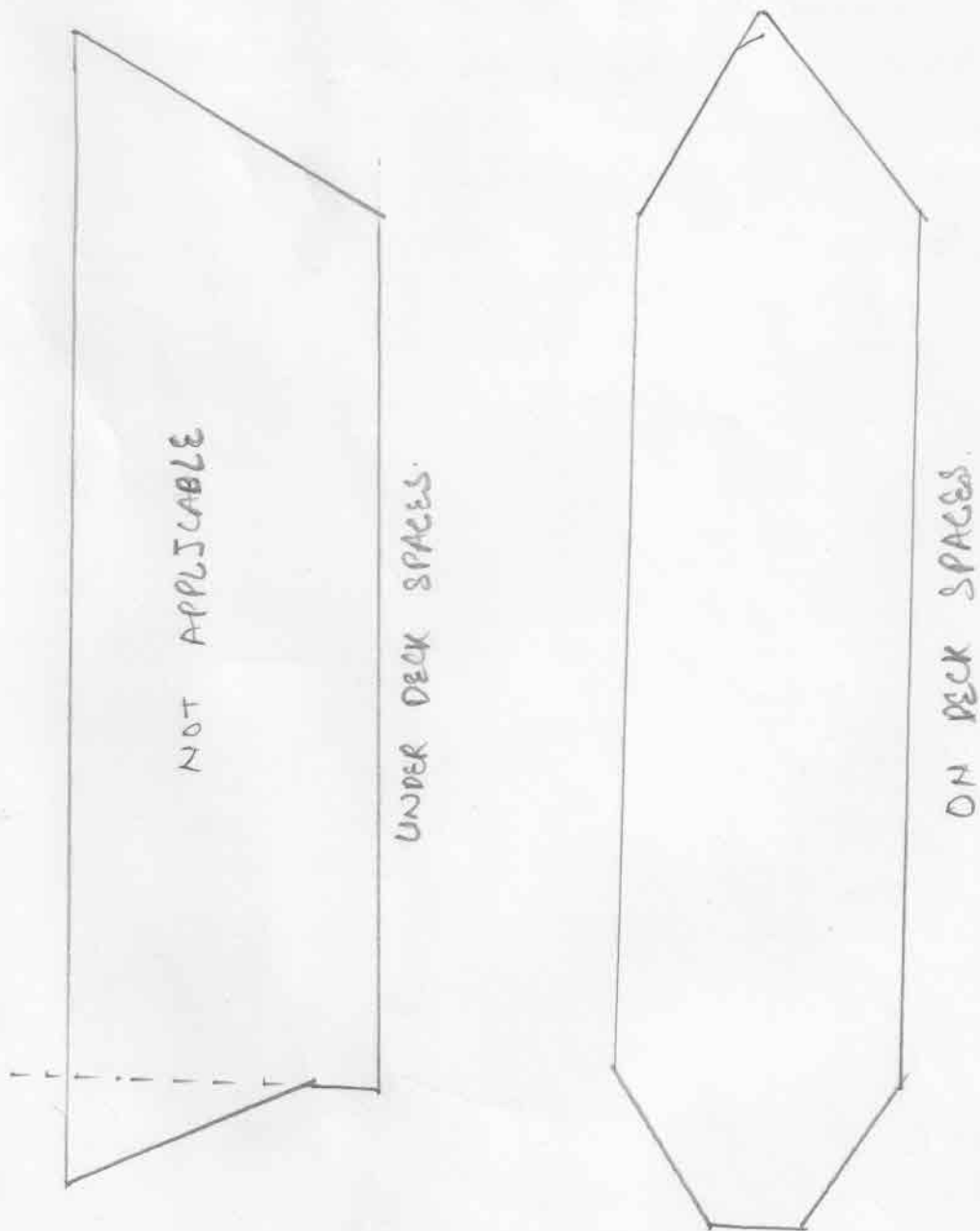
AM/PM reefer rounds to be taken as long as reefer containers on board & if possible after every navigational water reefer container temperature should checked & same to be noted down in reefer temperature log & to be compared, while loading the container it is to ensure that it is loaded away from:-

- i} Hot objects.
- ii} Loose objects which can impede its fan.
- iii} Continuous presence of water.

Q.
10-38

List the dangerous cargoes the vessel can carry (bay wise) & mention the special bilge pumping arrangements in the holds for their carriage. Show a sample of a dangerous cargo manifest.

Ans.



Class.	Holds.				On deck space
1.1 to 1.6					P.
1.4					P.
2.1					P
2.2					P
2.3 flammable					P
2.3 non flammable					P.
3FP < 23°C					P.
3FP > 23°C + 60°C					P
4.1					P.
4.2					P.
4.3 liquid					P.
4.3 solid					P.
5.1					P.
5.2					P.
6.1 liquid FP < 23°C					P.
6.1 liquid FP > 25°C to < 60°C					P.
6.1 liquid					P
6.1 solid					P
8 liquid FP < 23°C					P
8 liquid FP > 23°C - 60°C					P
8 liquid					P
8 solid					P
9.					P.

Abbreviation Used:-

- P → Packaged goods permitted
- A → Packed & Bulk goods allowed.
- X → Not allowed.

* Type of cargo space as per SOLAS II-2/19.2.2

Shipper's Name & Address

ATI FREIGHT LLC
1910 CHURCHILL TOWER
BUSSINESS BAY, DUBAI, UAE
OFFICE : +971562652007

DECLARATION OF DANGEROUS GOODS
DANGEROUS PACKING CERTIFICATE

Consignee's Name & Address

MOUNTH SHIPPING AGENCIES (PVT) LTD.
NO. 316/2 GALLE ROAD
COLOMBO SRI LANKA
TEL : 0094 115 378049/50/51

Ship's Stowage Location

Ocean Vessel	Voy No.	S/O No.
MV INDIRA GANDHI	SM322	

Container No. FEPU2118422

Place of receipt
JEBEL ALI

Port of loading
JEBEL ALI

Ship's Operator

Container Operator

Place of delivery
COLOMBO

Port of discharge
COLOMBO

Vanning Survey Req. Not Req.

Marks & No.

Description of Goods Number

IMDG Class
3

Total Weight
(Gross Net)(Kg/K)

CNTR NO :
FEPU2118422

Proper Shipping Name
Met. anal

UN No.
1230

GR WT 18.44 MT //
NET WT 18.44 MT

Inner Receptacle / Weight
GR V T 18.44 MT // NET WT 18.44

IMDG Page
No.

Marine Pollutant
NO

Outer Package/Weight

Label

Flash-Point
12 degree
Centigrade

Packing Group
II

Properties

Appearance

Colour

Specific
Gravity

Ignition
point

Toxicity
(LD/TLV)

Reactivity and/or Other Hazard

Emergency
Procedures
MIKE.
+9663847849
078148601

Prevention Measures

Protection Equipments

Medical First Aid

Emergency Communication

I hereby certify that:

- The container was clean, dry and apparent to receive goods
- No incompatible substances have been packed into the container.
- All packages have been externally inspected for damage, leakage or shifting, and only sound packages have been loaded.
- All packages have been properly packed in the container and secured.
- The container and packages are properly marked and labelled.
- The dangerous goods declaration required by sub-section 9.4 of the General Introduction to the International Maritime Dangerous Goods (IMDG) code has been received for each dangerous goods consignment packed in the container.
- If the consignments include goods of class 1, 2 or 3, the vehicle container is structurally serviceable in conformity with section 12 of the introduction to class 1 of the IMDG Code.
- When dangerous goods are transported in bulk packagings, the cargo has been evenly distributed.

I hereby declare that the contents of this consignment are fully and accurately

described above by proper shipping name and are classified, packed, marked and labelled, and are in all respects in proper condition for transport by sea and according to applicable international and national governmental regulations.

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labelled, and are in proper condition for transportation according to the applicable regulation of the Department of Transportation.

Signature of Shipper



ATI FREIGHT LLC

DATE 23.05.2016

APPORT D'INSPECTION
INSPECTION REPORT



BUREAU
VERITAS

CITERNE MOBILE / CONTENEUR CITERNE / CAISSE MOBILE
PORTABLE TANK / TANK CONTAINER / SWAP BODY

IMMATRICULATION
UNIT

FEPU 211842 - 2

Nature / Scope :

2.5 ans / 2.5 years




Rapport n° / Report n° :




TPI/4.14.534 WU

Rev 0

Exploitant / Operator Fourcee Asia		Lieu d'intervention / Place of intervention CONSTAR DEPOT	
MATIERES AUTORISEES AU TRANSPORT SUBSTANCES SUITABLE FOR TRANSPORT	<input checked="" type="radio"/> Citerne mobile UN <i>UN Portable tank</i>	Instruction de transport : <i>Transport instructions</i>	T11
	<input type="radio"/> Citerne mobile OMI <i>IMO Portable tank</i>		
	<input type="radio"/> Conteneur citerne ou Caisse mobile <i>Tank container or Swap-body</i>	Code : Code	Les dispositions spéciales affectées aux matières transportées sont indiquées dans le tableau du chapitre 3.2 (colonne 13 RID/ADR) <i>Special provisions assigned to carried substances are indicated in table 3.2 (column 13 RID / ADR)</i>
Si citerne dédiée → N° ONU : <i>If dedicated tank UN n°</i>			
CARACTERISTIQUES / CHARACTERISTICS		DATES D'INSPECTION / INSPECTION DATES	
Constructeur <i>Manufacturer</i>	WELFIT ODDY	Pays <i>Country</i>	S.AFRICA
Dimensions (ISO) <i>Size (ISO)</i>	1CC (20 feet - height 2591 mm)	Inspection initiale (année) <i>Initial inspection (year)</i>	2012
Masse brute maxi <i>Gross mass</i>	36000	Type <i>Type</i>	Initial / Initial
Tare <i>Tare</i>	3450	Demier contrôle <i>Last inspection</i>	03/2012
		Date <i>Date</i>	
		Prochain contrôle <i>Next inspection</i>	03/2017
		Date <i>Date</i>	
		Validité CSC <i>CSC validity</i>	03/2017 ACEP n°
		Date <i>Date</i>	
CITERNE / TANK		CONTROLES EFFECTUES / INSPECTIONS PERFORMED	
N° série <i>Serial n°</i>	62134	Examen intérieur <i>Internal inspection</i>	<input type="radio"/> NA * <input checked="" type="radio"/> S * <input type="radio"/> NS *
Matériau <i>Material</i>	SANS 50028-7 TYPE 1.4402/1.4404	Examen extérieur <i>External inspection</i>	<input type="radio"/> NA * <input checked="" type="radio"/> S * <input type="radio"/> NS *
Nombre de compartiments <i>Number of compartments</i>	1	Mesure d'épaisseur <i>Thickness measurements</i>	<input checked="" type="radio"/> NA * <input type="radio"/> S * <input type="radio"/> NS *
Capacité <i>Capacity</i>	25040 litres	Epreuve hydraulique <i>Hydraulic pressure test</i>	<input checked="" type="radio"/> NA * <input type="radio"/> S * <input type="radio"/> NS *
Pression Maximale de Service <i>Maximum Working Pressure</i>	4 bar	Epreuve d'étanchéité <i>Leakproofness test</i>	<input type="radio"/> NA * <input checked="" type="radio"/> S * <input type="radio"/> NS *
Pression d'épreuve hydraulique <i>Hydraulic test pressure</i>	6 bar	Mesure du vide <i>Vacuum measurement</i>	<input checked="" type="radio"/> NA * <input type="radio"/> S * <input type="radio"/> NS *
Temp mini / maxi de calcul (°C) <i>Minimum / Design temperature</i>	-40 TO +130 °C	Epreuve du dispositif de réchauffage <i>Heating device pressure test</i>	<input type="radio"/> NA * <input checked="" type="radio"/> S * <input type="radio"/> NS *
Revêtement interne / <i>Internal coating</i> :		Vérification des équipements de service <i>Checking of service equipment</i>	<input type="radio"/> NA * <input checked="" type="radio"/> S * <input type="radio"/> NS *
<input checked="" type="radio"/> Isolation par calorifuge / <i>Thermal insulation</i>		Examen de la structure <i>Frame inspection</i>	<input type="radio"/> NA * <input checked="" type="radio"/> S * <input type="radio"/> NS *
<input type="radio"/> Ecran pare soleil / <i>Sun shield</i>		Examen du marquage <i>Marking inspection</i>	<input type="radio"/> NA * <input checked="" type="radio"/> S * <input type="radio"/> NS *
<input type="radio"/> Double enveloppe sous-vide / <i>Vacuum double envelope</i>			
REGLEMENTATIONS APPLIQUEES / APPLIED REGULATIONS		NA : Non Applicable - S : Satisfaisant - NS : Non satisfaisant NA : Not Applicable - S : Satisfactory - NS : Not Satisfactory	
<input checked="" type="checkbox"/> IMDG (Div 11)	GB/IMO/BV/0286J/11	<input checked="" type="checkbox"/> CSC F/BV/7900/02	
<input checked="" type="checkbox"/> ADR / RID	GB/PT/BV/0286J/11	<input checked="" type="checkbox"/> US-DOT / CFR49 (IA-8106)	
DISPOSITIFS DE DECOMPRESSION RELIEF DEVICES	<input checked="" type="checkbox"/> Soupape de sécurité / <i>Safety valve</i>	1	1234878 - 6.2hg + 4.4 bar
	<input type="checkbox"/> Disque de rupture / <i>Burst. disc</i>	Nombre <i>Number</i>	Fab. / n° série <i>Manuf. / serial n°</i>
	<input type="checkbox"/> Fusible / <i>Fusible element</i>		Tarage <i>Settings</i>
OBSERVATIONS REMARKS			
Inspecté par <i>Inspected by</i>	Oscar Wu	Centre <i>Center</i>	BV-TAIPEI
		Date <i>Date</i>	07/07/2014
		Signature & Cachet / <i>Visa & Stamp</i>	

RAPPORT ETABLI SOUS AGREMENT DE L'AUTORITE COMPETENTE FRANCAISE / REPORT ISSUED UNDER FRENCH COMPETENT AUTHORITY AGREEMENT

DANGEROUS GOODS CONTAINER PACKING DECLARATION				SHIPPING INSTRUCTION NO.M	
SHIPPER PETROCHEM MIDDLE EAST P.O. BOX 17028 JEBEL ALI DUBAI, UAE TEL: +971 4 8839222 FAX: +971 4 8834133			 MEDITERANEAN SHIPPING CO.(PTY) LTD		
CONSIGNEE SANSARA INDUSTRIAL CHEMICAL (PVT)LTD. NO. 117, LEO ROAD, SINHARAMULLA, KELANIYA, SRI LANKA. TEL: +071 418 3570 FAX: +011 290 5838					
FORWARDING AGENT SNT INTERNATIONAL LLC. P.O BOX 125746, DUBAI UAE TEL: +971 4 2622575 FAX: +971 4 2622576			PLACE OF ACCEPTANCE		
Dest.Cont.Freight Stn.Depot		ships Cell. Position			
		Completed at Term			
VESSEL / VOYAGE NO. INDIRA GANDHI / SM322			Shipping instruction lodged at		Booking Referenc No.
PORT OF LOADING JEBEL ALI		PORT OF DISCHARGE COLOMBO		No of Packing Declaration	
CONTAINER NO. TCKU2777006		SEAL NO. 4566118		Shipper's Reference No.	
Marks & Numbers	Number and Type of Packages Correct Technical Name & Description of goods	UN NO	IMCO CLASS FLASH POINT(°C)	Gross Mass (Kg)	Measurement (cbm)
IMCO CLASS 3 CLASS 3	20 DRUMS OF METHYL ISOBUTYL KETONE 40 DRUMS OF BUTYL ACETATES	1245 1123	14°C 27°C	3600 Kgs 7768 Kgs	
CHEMICAL GROUP NAME	TYPE OF OUTER PACKING: 20 /40 STEEL DRUMS WITH NON-REMOVABLE HEAD METHYL ISOBUTYL KETONE / BUTYL ACETATES				
PG NUMBER	II / III	LESS PALLET TARE		868 Kgs	
TOTAL NO OF PACKGES	60 DRUMS	TOTAL		10500 Kgs	
DECLARATION (REQUIRED FOR EACH CONTAINER CARRYING DANGEROUS GOODS)					
It is Certified that :					
<ol style="list-style-type: none"> The container was clean, dry and fit to receive the goods. No goods known to be incompatible have been stowed therein. All packages have been externally inspected for damage and only dry, sound packages loaded. All packages have been properly stowed, secured and suitable securing materials used. The packages are clearly marked with a distinctive label or stencil and the container is clearly marked with labels to indicate the nature of the danger to which the goods give rise. In addition the container is clearly marked with a label indicating the correct technical name of the Dangerous Goods. The dangerous goods in this container are those accepted by the carrier under the above Booking Reference number. A Dangerous Goods Declaration signed by the shipper or supplier has been issued for each dangerous goods consignment packed in the container. No goods which are or may become dangerous, inflammable or damaging (including radio-active-materials), or which are or may become liable to damage any property whatsoever, shall be tendered to the carrier for carriage without his express consent in writing. 					
This certificate must be completed by the person controlling the loading operation after the container has been packed and to be given to the driver on collection.					
The shipper acknowledges that no goods which are or may become dangerous, inflammable or damaging (including radio active materials) or which are or may become liable to damage any property whatsoever shall be tendered to the carrier for carriage with his express consent in writing.					
This container is securely loaded containing cargo as declared above and the carrier's seal is attached. This certify that the goods detailed herein were, at the time of loading in the containers in good order and condition and that the quantities, weight, measurements and descriptions are correctly declared.					
Date	 Signature of 17028 Authorised Representative DUBAI, U.A.E.		 Shipper's Agent DUBAI, U.A.E. (Delete as necessary)		

DANGEROUS GOODS CONTAINER PACKING DECLARATION				SHIPPING INSTRUCTION NO.M	
SHIPPER PETROCHEM MIDDLE EAST P.O. BOX 17028 JEBEL ALI DUBAI, UAE TEL: +971 4 8839222 FAX: +971 4 8934133			 MEDITERANEAN SHIPPING CO.(PTY) LTD		
CONSIGNEE SANSARA INDUSTRIAL CHEMICAL (PVT)LTD. NO. 117, LEO ROAD, SINHARAMULLA, KELANIYA, SRI LANKA. TEL: +071 418 3570 FAX: +011 290 5838					
FORWARDING AGENT SNT INTERNATIONAL LLC. P.O BOX 125746, DUBAI UAE TEL: +971 4 2622575 FAX: +971 4 2622576			PLACE OF ACCEPTANCE		
Dest.Cont.Freight Stn.Depot		ships Cell. Position			
		Completed at Term			
VESSEL / VOYAGE NO. INDIRA GANDHI / SM322			Shipping instruction lodged at		Booking Referenc No.
PORT OF LOADING JEBEL ALI		PORT OF DISCHARGE COLOMBO		No of Packing Declaration	Shipper's Reference No.
CONTAINER NO. TCKU2777006		SEAL NO. 4566118			
Marks & Numbers	Number and Type of Packages Correct Technical Name & Description of goods	UN NO	IMCO CLASS FLASH POINT(oC)	Gross Mass (Kg)	Measurement (cbm)
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CHEMICAL GROUP NAME					
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TOTAL NO OF PACKAGES	60 DRUMS	TOTAL		10500 Kgs	
DECLARATION (REQUIRED FOR EACH CONTAINER CARRYING DANGEROUS GOODS)					
It is Certified that :					
<ol style="list-style-type: none"> The container was clean, dry and fit to receive the goods. No goods known to be incompatible have been stowed therein. All packages have been externally inspected for damage and only dry, sound packages loaded. All packages have been properly stowed, secured and suitable securing materials used. The packages are clearly marked with a distinctive label or stencil and the container is clearly marked with labels to indicate the nature of the danger to which the goods give rise. In addition the container is clearly marked with a label indicating the correct technical name of the Dangerous Goods. The dangerous goods in this container are those accepted by the carrier under the above Booking Reference number. A Dangerous Goods Declaration signed by the shipper or supplier has been issued for each dangerous goods consignment packed in the container. No goods which are or may become dangerous, inflammable or damaging (including radio-active-materials), or which are or may become liable to damage any property whatsoever, shall be tendered to the carrier for carriage without his express consent in writing. 					
This certificate must be completed by the person controlling the loading operation after the container has been packed and to be given to the driver on collection.					
The shipper acknowledges that no goods which are or may become dangerous, inflammable or damaging (including radio active materials) or which are or may become liable to damage any property whatsoever shall be tendered to the carrier for carriage with his express consent in writing.					
This container is securely loaded containing cargo as declared above and the carrier's seal is attached. This certify that the goods detailed herein were, at the time of loading in the container in good order and condition and that the quantities, weight, measurements and descriptions are correctly declared.					
Date	Signature of Authorised Representative	 Signature of Authorised Representative No. 17028 JEBEL ALI DUBAI, UAE		 Signature of Shipper/Agent No. 17028 JEBEL ALI DUBAI, UAE (Delete as necessary)	

Q. 10.36 Explain the anti-heeling system, its purpose & how its functions.

Ans. The anti-heeling system of a ship automatically detects the heeling angle of the ship & compensate the same. This allows the vessels to have continuous loading & unloading cargo operation without stopping in between for list correction.

This saves considerable amount of time on port. In this system, ballast tanks are internally connected to each other by means of pipe lines, automatic valves & control system. When the ship heels to any of the sides the heeling sensor sends the signal for change of ship's angle with respect to the ship's upright position to the master control panel. This change in heeling angle is compensated by method of auto transferring the water from the heeled side to the other side of the ship making the vessel upright.

Level control switches are also installed in the ballast tank involved with the anti-heeling system to avoid low-level or over filling & hence over pressurising of the tanks.

Types of anti-heeling systems:-

→ There are two widely used anti-heeling systems board ships:-

1. Pneumatic System:-

This system comprises of air purging arrangement & regulating valve system to force the air on the top of ballast tank. The air is forced on one tank & purged from the other making the water rapidly flow from pressurised to purged tank. This transfer of water is used to upright the vessel in quick time.

2. Water pump system:-

The pump system consists of electrical motor driven water pump, which can be a reversible or non-reversible pump, connected with remote controlled valves that can direct ballast water flow in between the tanks.

Advantages of Anti-heeling System

- 1) Allow safer & rapid cargo loading & unloading.
- 2) Shorter harbour time.
- 3) Reduce damage to ramps, rolling cargo & containers.
- 4) Ensure safety of the ship & personnel.

CODES :-

- NS1 - Low level alarm switch port water tank.
- NS2 - Low level alarm switch, std water tank.
- NS3 - High level alarm switch, port water tank.
- NS4 - High level alarm switch, std water tank.
- LS1 - Low level alarm switch, gear oil tank.
- LS2 - High level alarm switch, cofferdam tank.
- RBP - Reversible ballast pump.
- PS1 - Limit switch valve, open feedback.
- PS2 - Limit switch valve, closed feedback.
- PY1 - Butterfly valve open solenoid.

Q 1037

Explain the purpose of the cargo securing manual, take photocopies of important sections of the manual & keep a record.

Ans.

A classification will approve a ship for the carriage of containers. Regulations stipulate that the ship must carry a cargo securing manual. This will contain instructions as to how cargo should be secured. However approval of the arrangement in the manual will not necessarily mean that cargo securing arrangements will withstand foul weather.

A ship sailing in a seaway has six degrees of freedom - roll, pitch, heave, yaw & surge. The ship itself bends & twists as waves pass. Hatch covers can move relative to the hatch opening & a stack of containers can move.

Lashing equipment are taken up. It is the lashing system alone that resists these movements & attempts to keep containers on board.

The purpose of this guide is to discuss container securing systems, the cause of lashing failure to offer advice as to how losses can be minimized.

There are certain actions which should always be taken to prevent containers from being damaged or overboard. The following things take into mind for best practice.

Here

1) Check stack weight before stowage :-

It is important not to exceed allowable stack weight otherwise failure of the corner post of the containers stowed at the bottom of stack is possible.

2) Never deviate from the approved lashing plans except add additional lashing.

3) Consult the lashing manual before applying lashing.

4) If stack weight are high & bad weather is expected then fit additional lashing.

5) Try to avoid isolated stacks of containers when stowed on deck, especially if at the ship's side.

6) Avoid loading heavy containers above light containers & at the top of stack.

7) Examine containers for physical defects, check the corner posts carefully. Container with damaged corner posts placed in the bottom of a stow are likely to collapse.

8) Check that all cell guides are clear of obstructions are straight & not damaged.

9) Check that turnbuckles are fully tightened. Loose lashing will be ineffective.

10) Check lashing equipment for defects & discard damaged equipment.

Q.
10.3.8

Draw the plan view of elevation of a cargo hold, giving the following dimensions:-

- a) Length & breadth of hatch square = 2576×2354 cms.
- b) Length & average breadth of hold = 2200 cms.
- c) Breadth of deck beside the hatch forward end/aft end = 60 cms.
- d) Length of tank top from hatch square to forward/aft bulkhead = 2562 cms.
- e) Breadth of tank top from hatch square to port/starboard shipside = 1300 cms.
- f) Height from tank top to underside of deck beam of main = 1500 cms.
- g) Length of cross-deck between two hatches forward/aft = 140 cms.
- h) Height of hatch covers (when raised in open condition) from main deck = N.A.
- i) Height of hatch coaming forward/aft from deck at centre line = 160 cms.
- j) Load densities for tank top, hatch covers, main deck & cross deck beside hatch.

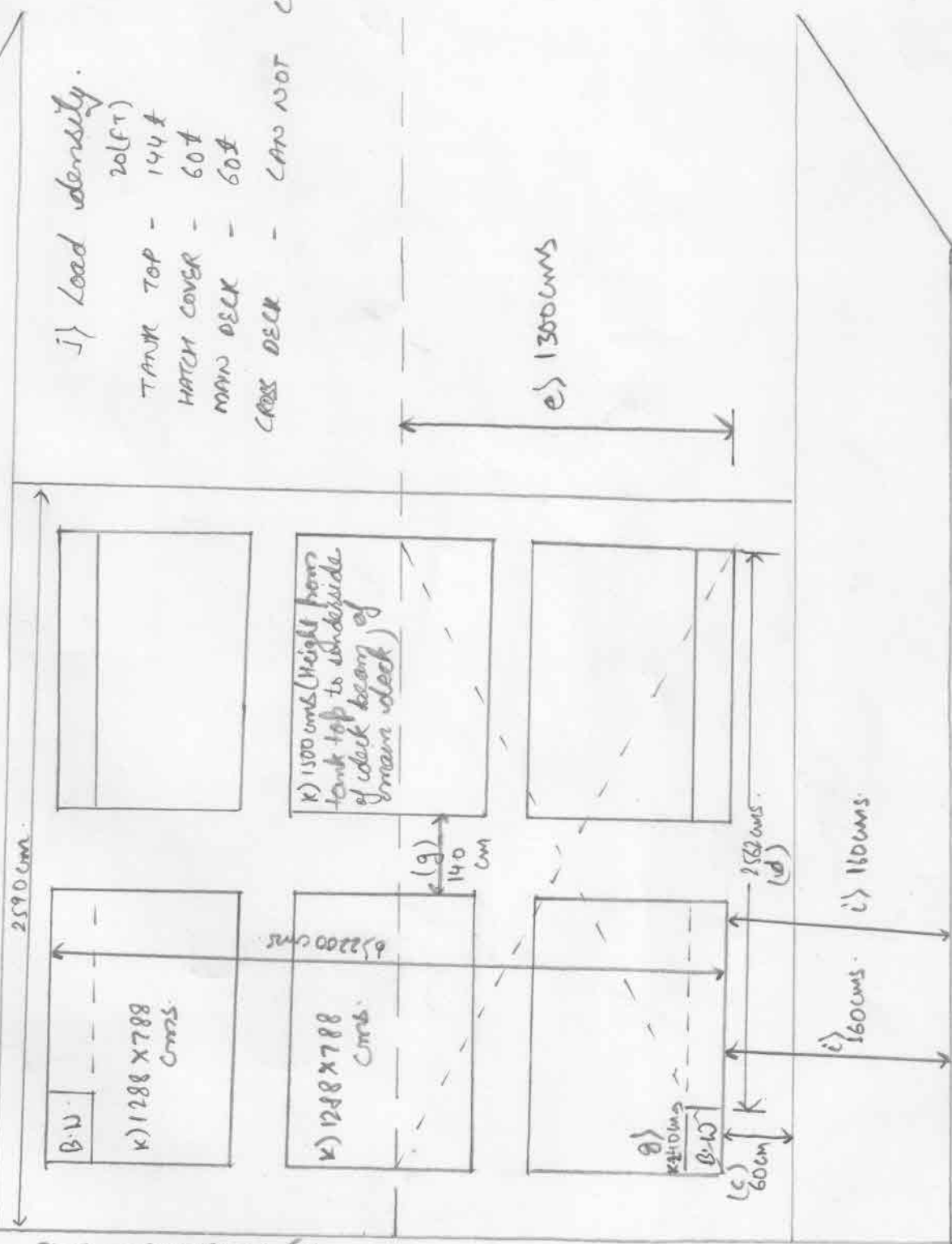
	20 ft	40 ft
Tank top	144 t	210 t
Hatch cover	60 t	90 t
Main deck	60 t	90 t
Cross deck	CAN NOT LOAD	

- k) Bilge well dimension = 140×100 cm.

M.V. INDIRA GANDHI

a) 2576 x 2354 cms

CL



J) Load density.

- TANK TOP - 20 (FT)
- HATCH COVER - 144 T
- MAIN DECK - 60 T
- CROSS DECK - 60 T
- CAN NOT LOAD - 40 (FT)
- 210 T
- 90 T
- 90 T

e) 1300 cms

i) 1600 cms

i) 1100 cms