

CHAPTER 1: Location and details of fixed securing arrangements.

Container and fixed fitting Table :

	Quantity of Containers	Tier	Quantity of fixed Fitting	
			Conic Guides	Lashing Eyes
F'c'sle deck	4 FEU	1	12	nil
Upper Deck	32 FEU or 24 FEU + 16 TEU	2	60	48
Hatch Cover	12 FEU	1	32	nil
Hold 3	12 TEU	4	12 Bottom Lock Apertures	6 TP Foundations
TOTAL	48 FEU	-	104 + 12	48 + 6

Permissible Container Loads :

- On Hatch Cover 32 Metric Tons per Stack for One (1) tier of 40 ft.
- On Deck 25 Metric Tons per Stack for One (1) tier of 40 ft on Foc'sle Deck.
50 Metric Tons per Stack for Two (2) tiers of 40 ft on Upper Deck.
- Under Deck 80 Metric Tons per Stack for Four (4) tiers of 20 ft in Hold 3.

Container Securing System :

- Only Twist Lock system without Lashing on Hatch covers and Foc'sle deck.
- Twist Lock system with Lashing on Upper deck.
- Twist Lock system with Buttresses and Bridge Fittings in Hold 3.

Permissible Deck Loads :

- Deck A to D 1.70 T/M²
- Hatch A to D 1.75 T/M²

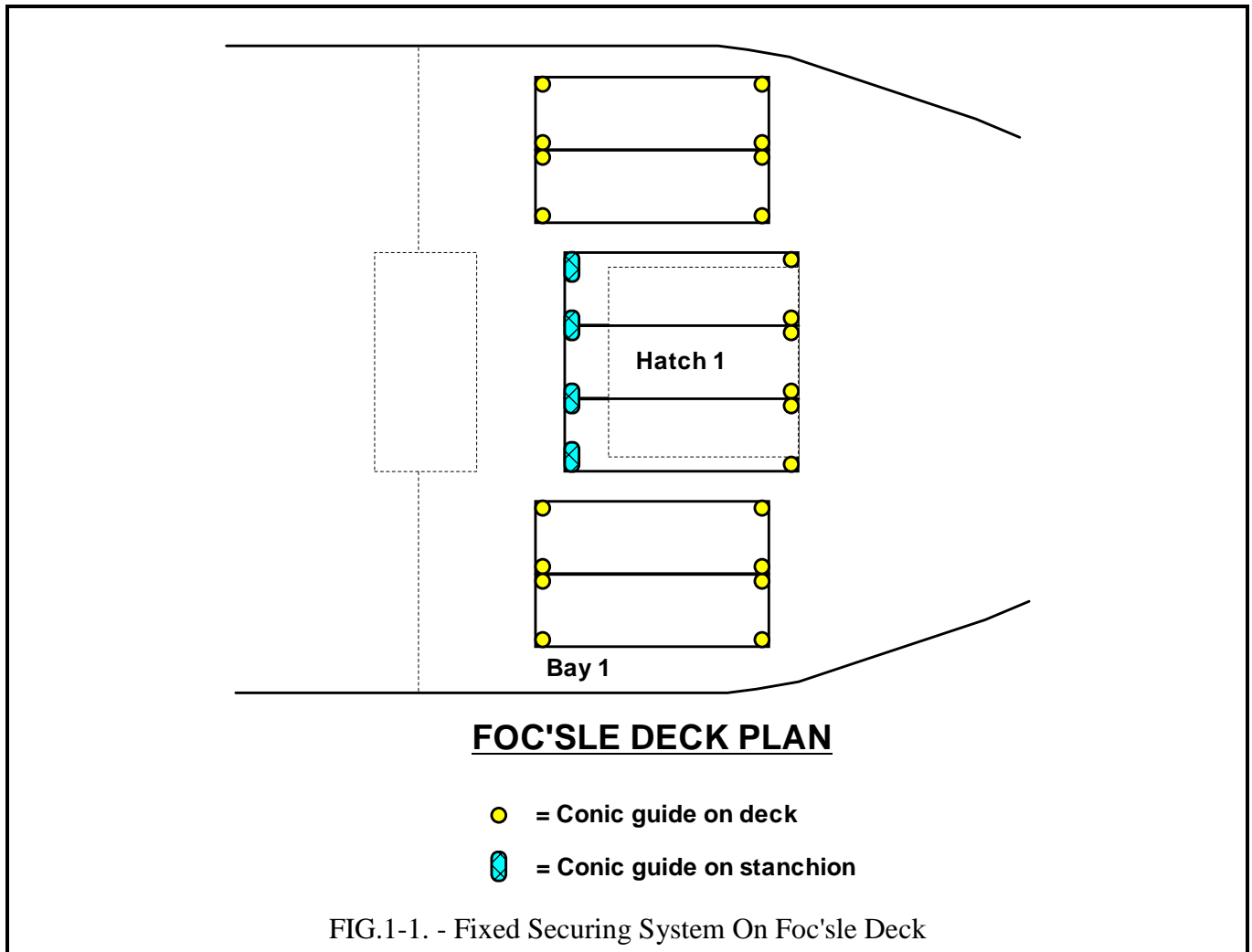
Pallet Securing System :

Hatch Side Boards and Portable Inflatable Dunnage Bags, supplemented by Wood Shoring where required.

Side Shoring (Where Fitted):

- In Hold 1 = decks A, B, C and D.
In Hold 2 = decks A, B, C and D.
In Hold 3 = deck D.
In Hold 4 = decks B, C, and D.

FOCSLE DECK ARRANGEMENT:-

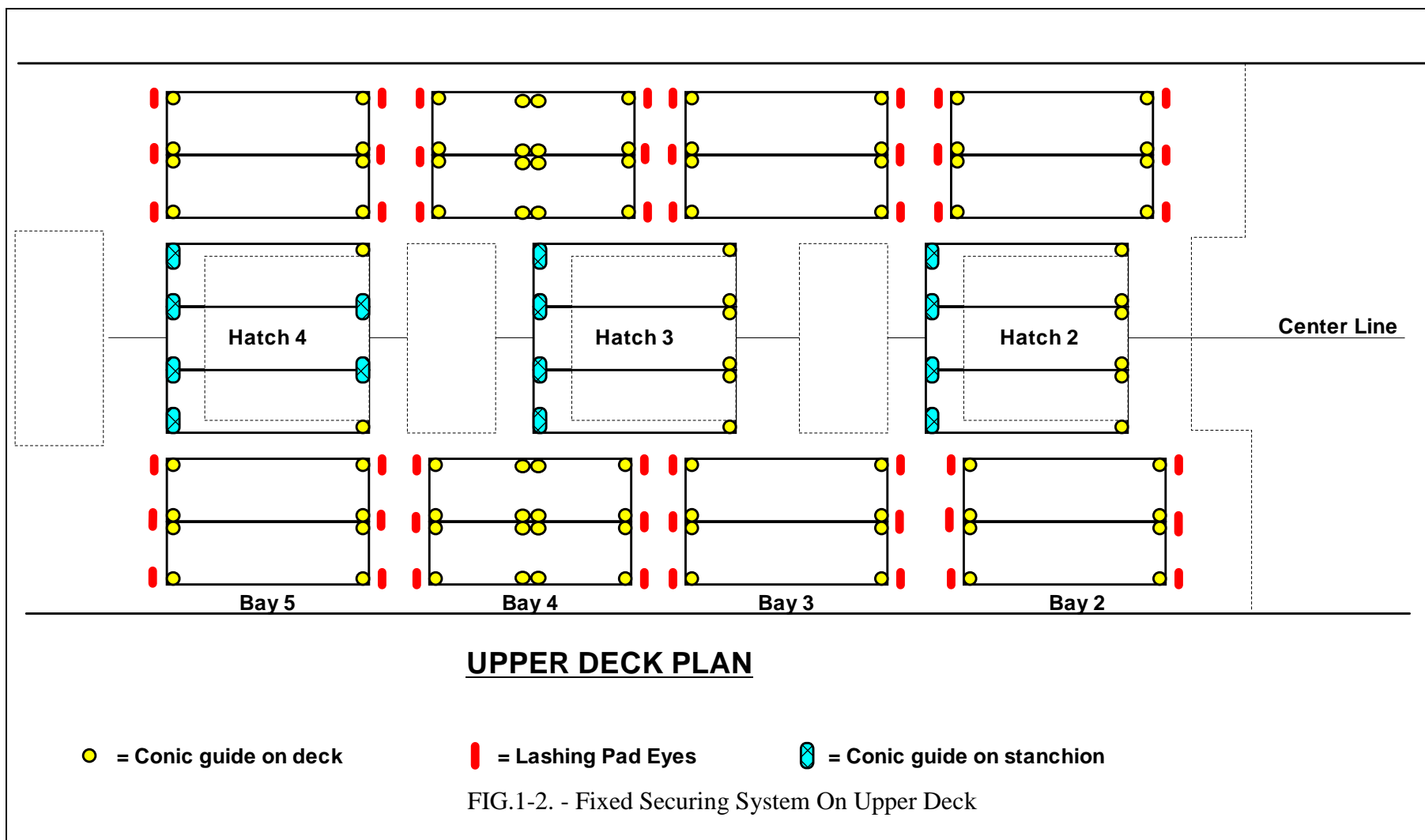


This diagram (Fig. 2.) shows the fixed securing arrangements for 40 'containers on the foc'sle deck (for stowage on Hatch top 1 and Bay 1). Note that fixed guides for the Conic Base Locks are provided for each container position. There are no eye pads for portable Lashing rods as twist locks with bridge fittings suffice.

STACK LOAD TABLE :

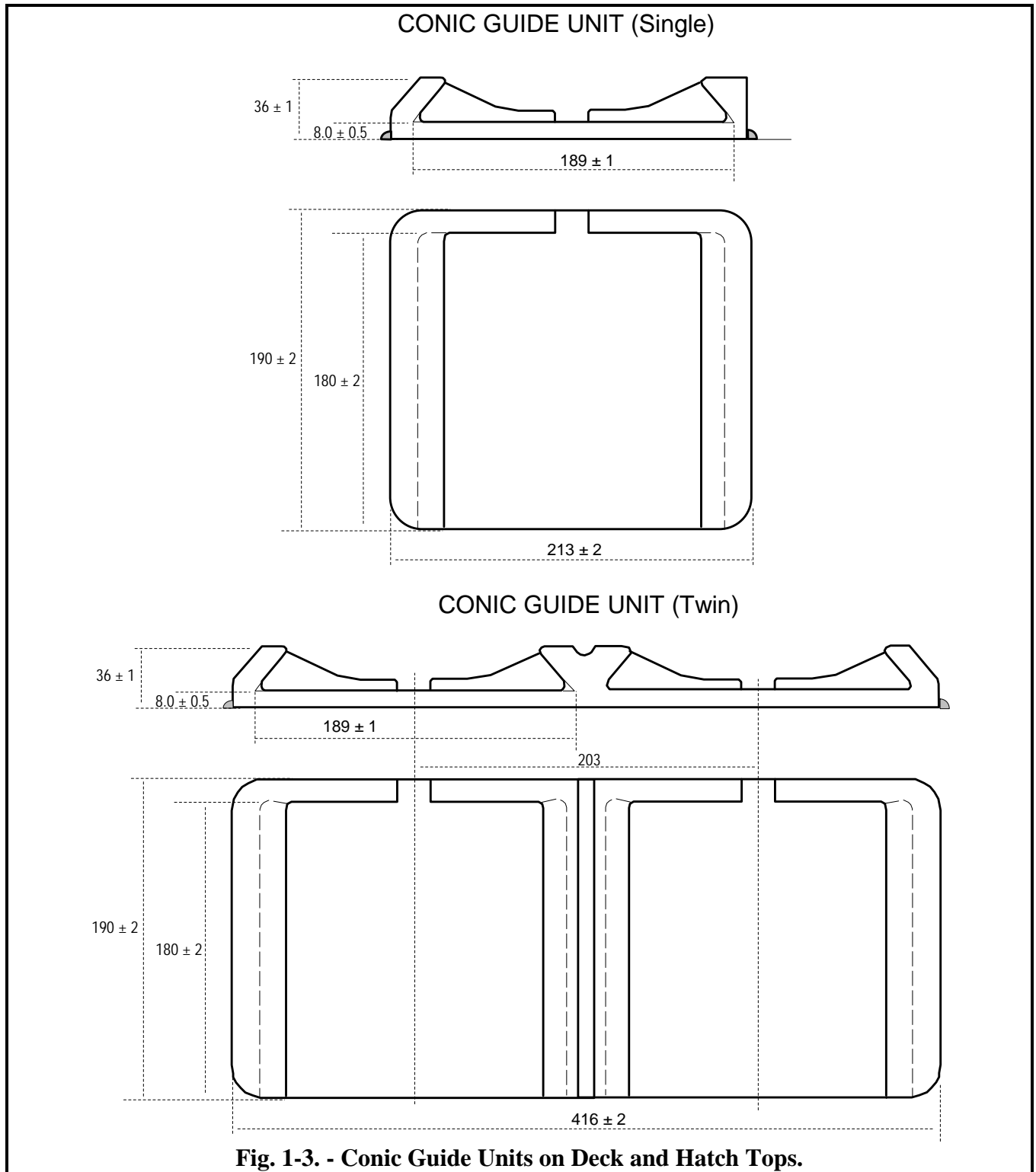
COMPARTMENT		No of Stacks	Stack Load
ON HATCH	Hatch top 1, 2, 3, 4	3 each	32 MT
ON DECK	Bay 1 (foc'sle)	4	25 MT
	Bay 2 to 5 (40' cntnrs)	4 each	50 MT
	Bay 4 (20' containers)	8	37.5 MT
IN HOLD 3	Hold 3 (20' containers)	3	80 MT

UPPER DECK ARRANGEMENT:-



This diagram (Fig. 23) shows the fixed securing arrangements for 40' containers on the upper deck (for stowage on Hatch tops 2 to 4 and Bays 2 to 5). Note that fixed guides for the Conic Base Locks are provided for each container position. Additional guides are provided for stowing 20' containers in Bay 4. There are eye pads at each 40' position in Bays 2 to 4 for portable Lashing rods.

Conic Guide Units (Single/Double): These are also known as Dovetail Shoes. They are the bottom fixed securing arrangement on all Hatch tops and Deck stow positions. The portable Bottom Locks are fitted in these units. These may be mounted on raised stools of appropriate height to compensate for camber.



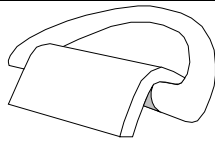


Fig. 1-3.1. - D-Ring (Lashing Eye) on Deck.

Conic Guide Units: Breaking Load -
 Manufacturer- Ozean Service & Reparatur

D-Ring on Deck: Breaking Load - 49 tons
 Manufacturer- Ozean Service & Reparatur

UNDER DECK ARRANGEMENT:-

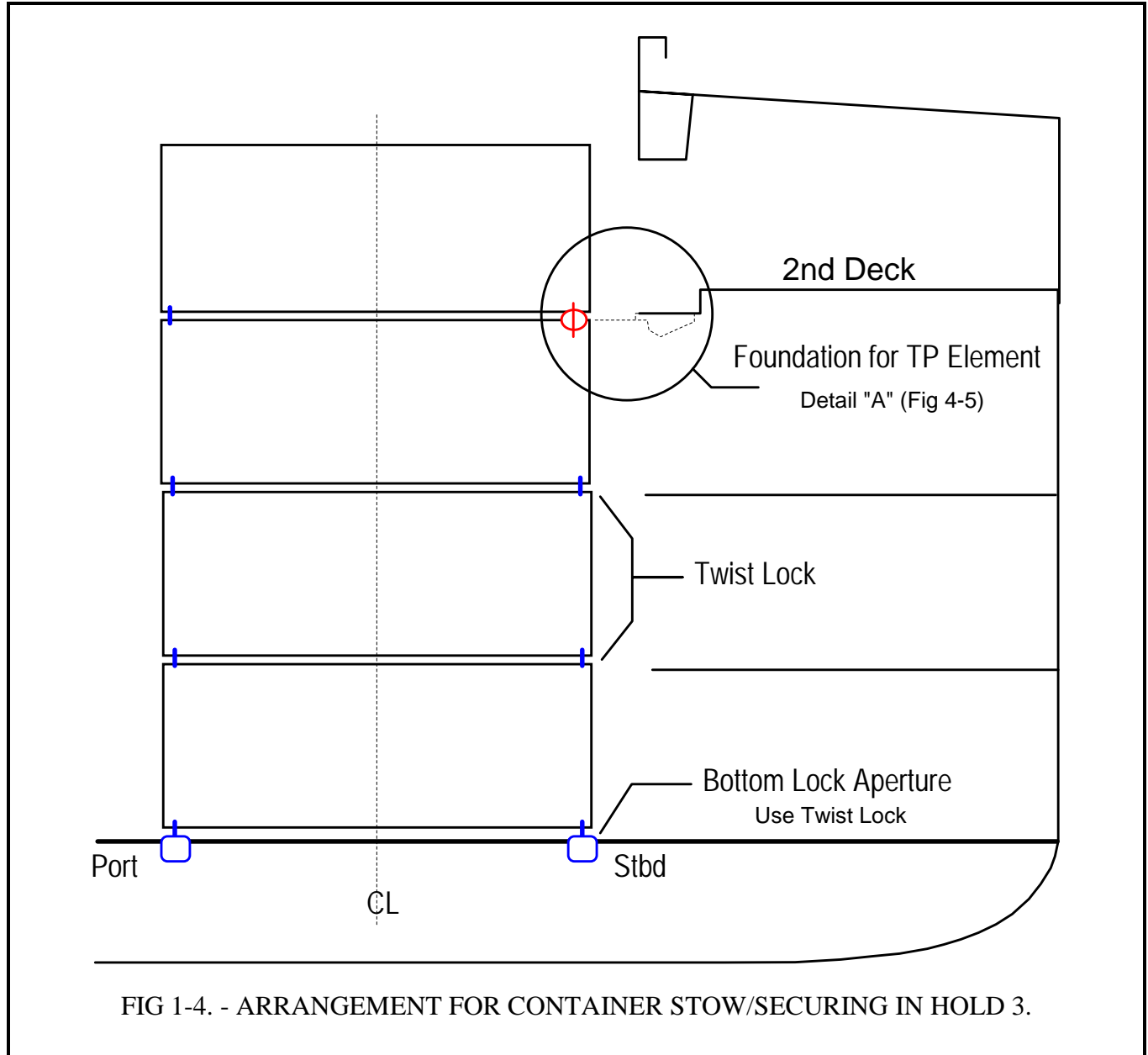
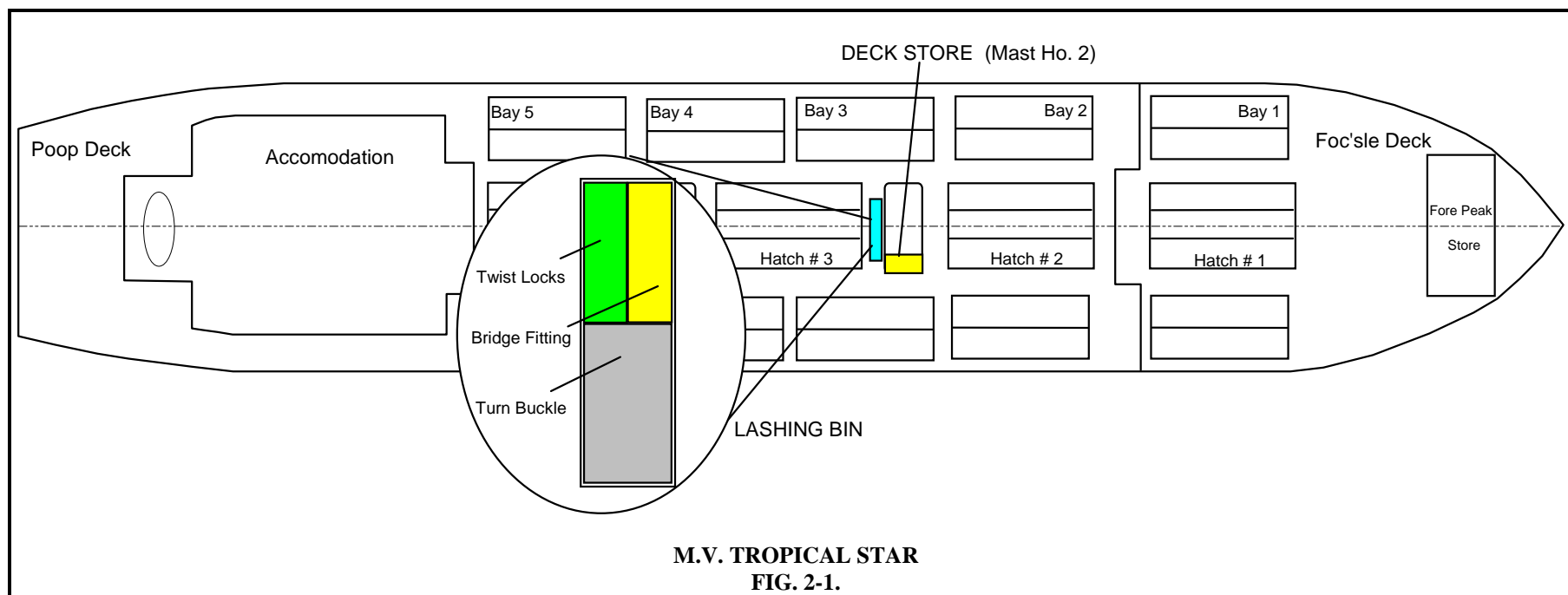


FIG 1-4. - ARRANGEMENT FOR CONTAINER STOW/SECURING IN HOLD 3.

Fig.. 4 shows the fixed securing arrangements for 20' containers in Hold 3. Here, 20' containers are stowed athwart ship (3 rows) and can go upto 4 tiers. The diagram shows the apertures/raised pots (4 x 3 available) for the bottom locks (twist locks) and the fixed foundations for the Thrust Pad (TP) Elements. See Fig. 3-7. for details of TP Elements.

CHAPTER 2: Location and stowage of portable securing gear.



Portable securing gear is located in the Deck store and in a Lashing Bin the locations of which are indicated on the diagram above.

The Deck Store (Stbd side aft of Hatch 2) is used to stow the Lashing rods when they are not in use.

The Lashing Bin is used to stow the Bridge Locks, Twist Locks & Base Locks and the Turnbuckles. The Lashing Bin is designed into three sections, segregating its contents as shown in the diagram above.

Spare Lashing equipment is stowed in the Forepeak Store.

CHAPTER 3: Details of portable securing gear & Inventory of items.

This Chapter describes the functions and design characteristics of the portable lashing gear carried on the vessel. An Inventory of items and their location on board is also indicated.

1. Turn Buckle

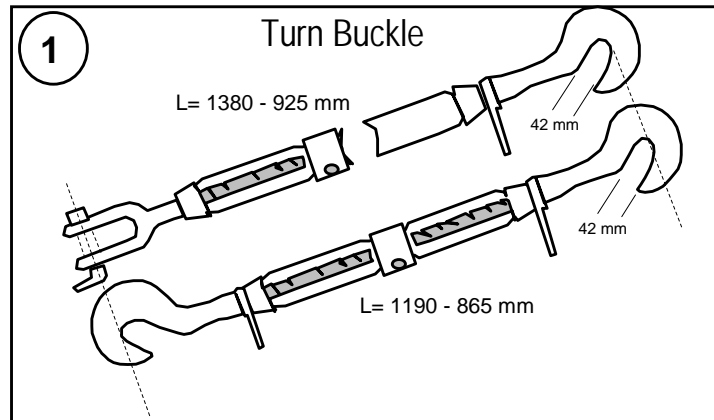


Fig. 3-1

Features:	Pipe Body with two Swivel Hook Bolts OR one Hook bolt and one Jaw Bolt.
Size:	As per Sketch
Finish:	Galvanized.
Location:	Lashing Bin
Inventory:	44 pcs.
Maintenance:	Regular greasing and inspection.
SWL:	

Locking nuts are provided to prevent inadvertent opening of the turn buckles. In any case they are to be checked for tightness frequently during a sea voyage.

2. Bottom Cone Lock (Base Lock or Dovetail twist lock)

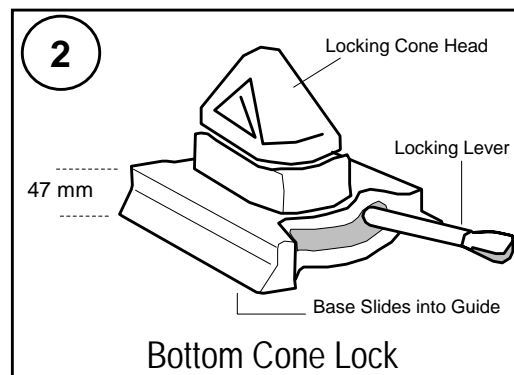


Fig. 3-2

Features:	Base plate slides into Guide on Deck.
Flange Thickness:	47 mm
Finish:	Galvanized.
Location:	Lashing Bin
Inventory:	144 pcs.
Maintenance:	Inspection and Oiling.
SWL:	

3. Twist Lock

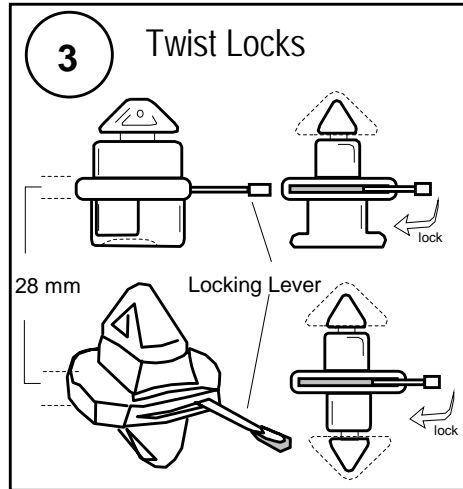


Fig. 3-3

Features:	Left hand locking or Right Hand Locking
Flange Thickness:	28 mm
Finish:	Galvanized.
Location:	Lashing Bin
Inventory:	206 pcs. (LH 99 pcs, RH 107 pcs)
Maintenance:	Inspection and Oiling.
SWL:	

These twist Locks are used to interlock container tiers. They are available on board as right hand or left hand locking. (Painted to indicate locking side).

4. Lashing Rod

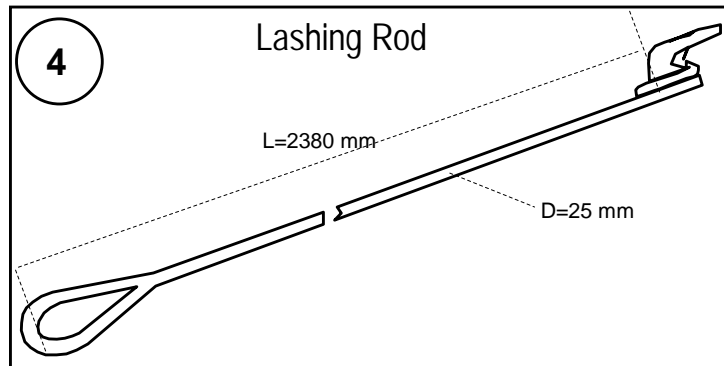


Fig. 3-4

Features:	Eye on one end and slip hook on other end. No Corner Hooks needed.
Diameter:	25 mm.
Finish:	Galvanized.
Location:	Deck Store (Mast Ho. 2)
Inventory:	64 pcs
Min BL:	36 tons.

These Lashing Bars are used to secure containers on upper deck stow positions when carried in two tiers or more. When, in the case of carrying High Cube containers, these rods are too short, extension rods are appended to it. Lashing rods and turnbuckles can turn slack during the course of a voyage and need to be checked frequently.

5. Bridge Lock

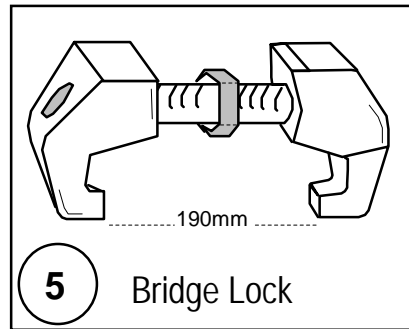


Fig. 3-5

Features:	Max Opening 190 mm.
Finish:	Galvanized.
Location:	Lashing Bin
Inventory:	48 pcs.
Maintenance:	Inspection and Greasing to keep free.
Min BL:	

Bridge Locks are used across the top of adjoining containers and are optional when securing single tier containers. Care has to be taken that these are checked and re-tightened in the duration of the voyage.

6. Lashing Rod Extension

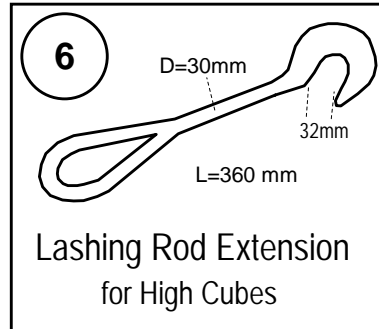


Fig. 3-6

Features:	Used to extend Lashing Bar when loading High Cubes.
Length:	360 mm
Finish:	Galvanized.
Location:	Deck Store
Inventory:	48 pcs
Min BL:	42 tons

These are used to extend the length of the cross lashing rods as and where required. The hook end is attached to the lashing rod and the eye attached to the turn buckle.

7. T.P. Element (Buttresses)

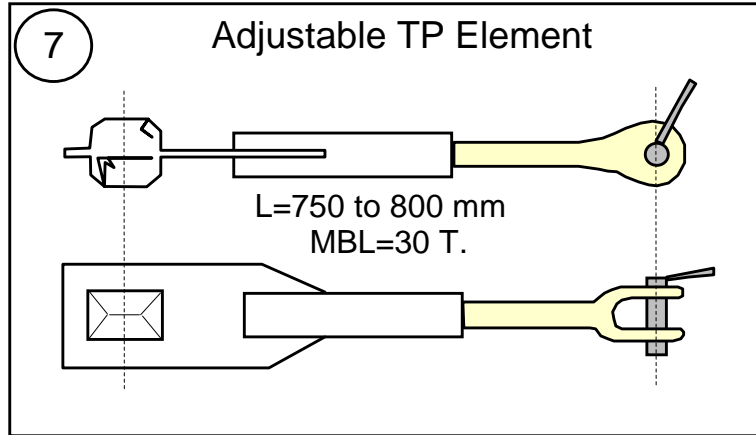


Fig. 3-7

Features:	Adjustable Length.
Finish:	Galvanized.
Location:	Deck Store
Inventory:	6 pcs.
Maintenance:	Inspection and Greasing. To be kept free.
Min BL:	30 tons
Manufacturer:	Sea Safe Transport A/S

8. Inflatable Dunnage Bags: Two types available on board-

Maker:	Borden Air Pac	Bates Cargo Pack
Max Gap:	400 mm	450 mm
Max Pressure:	1.5 KPa/2.0 PSI	1.5 KPa/2.0 PSI
Size:	2000 x 850 mm	1000 x 1850 mm.

Inventory of items:

Lashing Gear	Quantity on Board	Location
BASE CONES	144	Lashing Bin
TWIST LOCKS	206	Lashing Bin
BRIDGE LOCKS	48	Lashing Bin
ROD EXTENSIONS	48	Deck Store
LASHING RODS	64	Deck Store
TP ELEMENTS	6	Deck Store
TURN BUCKLES	44	Lashing Bin
INFLATABLE DUNNAGE BAGS	700	For'd Store

CHAPTER 4: Correct application of portable securing gear.

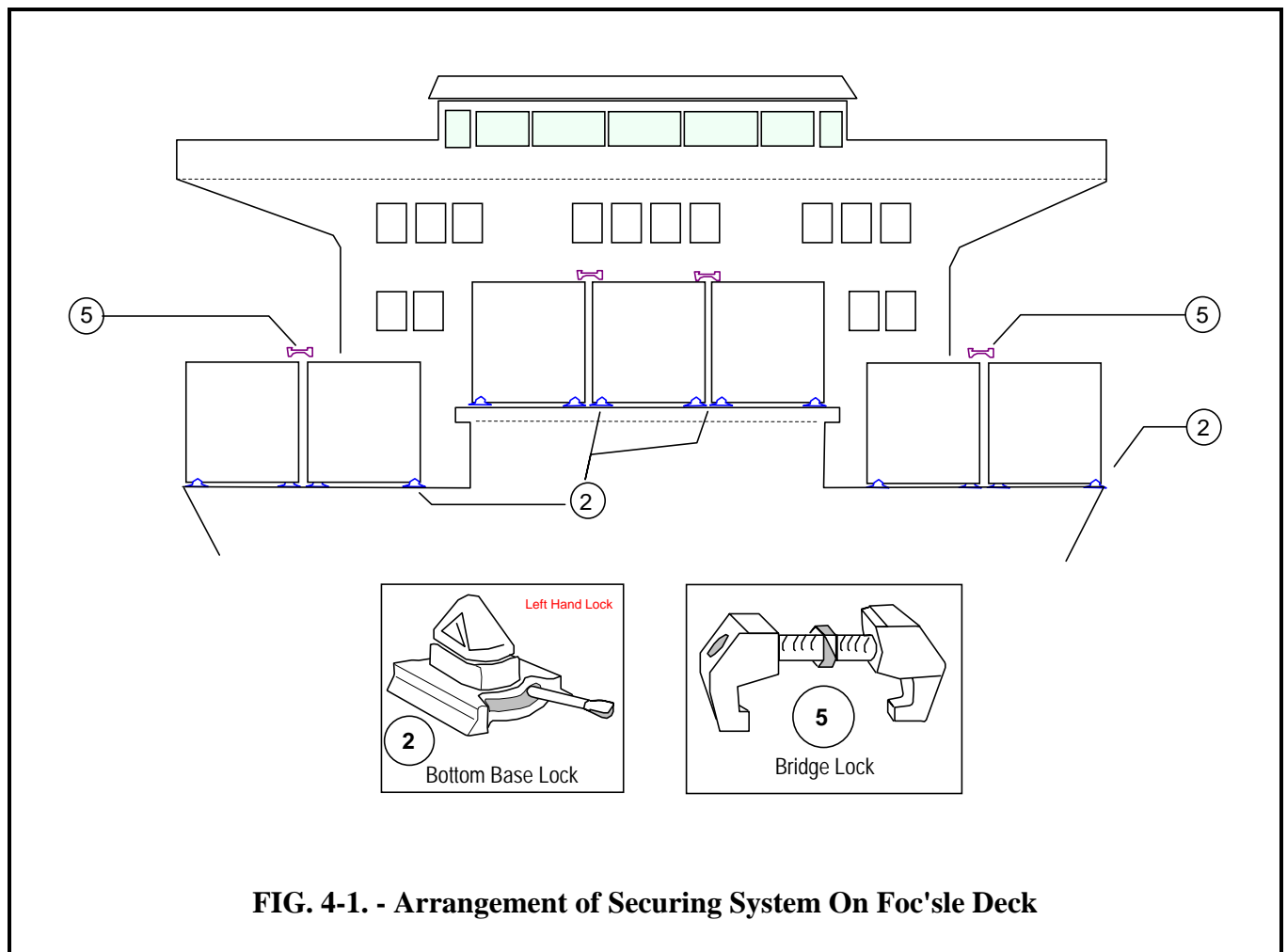
The Provisions for securing cargo, contained in this chapter, should be interpreted as minimum requirements. Additional Lashing should be taken to that prescribed here if so considered by the Master. The Master should in applying portable securing gear, take into account the following factors:

1. duration and geographical area of voyage
2. sea conditions which may be expected
3. vessel's design and characteristics
4. dynamic forces under expected weather conditions
5. type and weight of cargo carried and their intended stowage pattern

.. Container Cargo:-

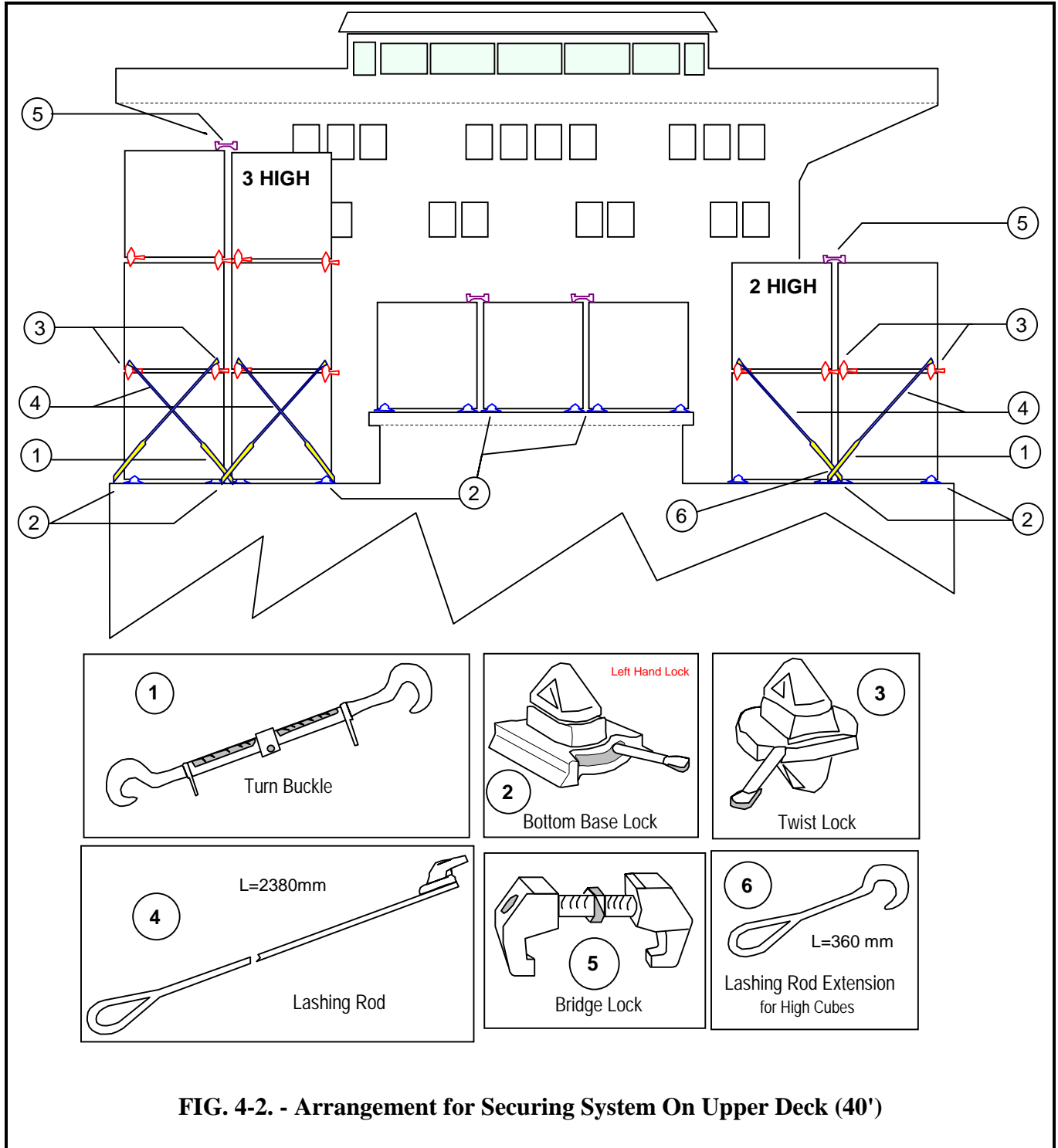
Containers on Foc'sle Deck:

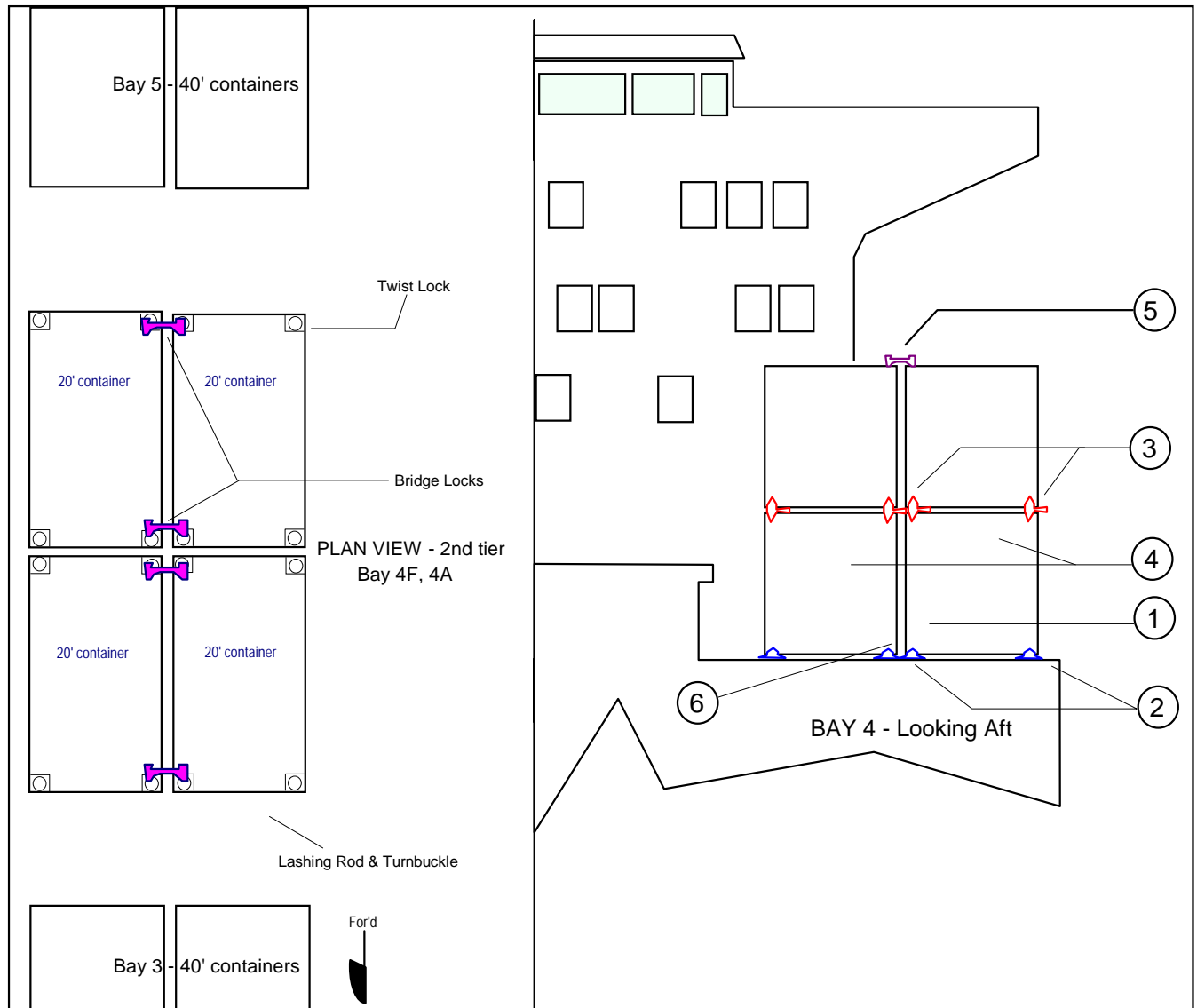
The following diagram shows the general lashing arrangement when carrying containers on the foc'sle deck, i.e. on Bay 1 and Hatch top 1. This arrangement also applies to single tier stow on all other positions.



Containers on Upper Deck:

The following diagram shows the general lashing arrangement when carrying containers on the upper deck, i.e. on Bays 2 to 5 and Hatch tops 2 to 4. The vessel normally carries a maximum of two tiers and cross lashing bars from the outside of each stack suffice. When carrying 3 tiers (usually empty container on the third tier) criss cross lashing arrangement is suggested. SEE DIAGRAM BELOW.

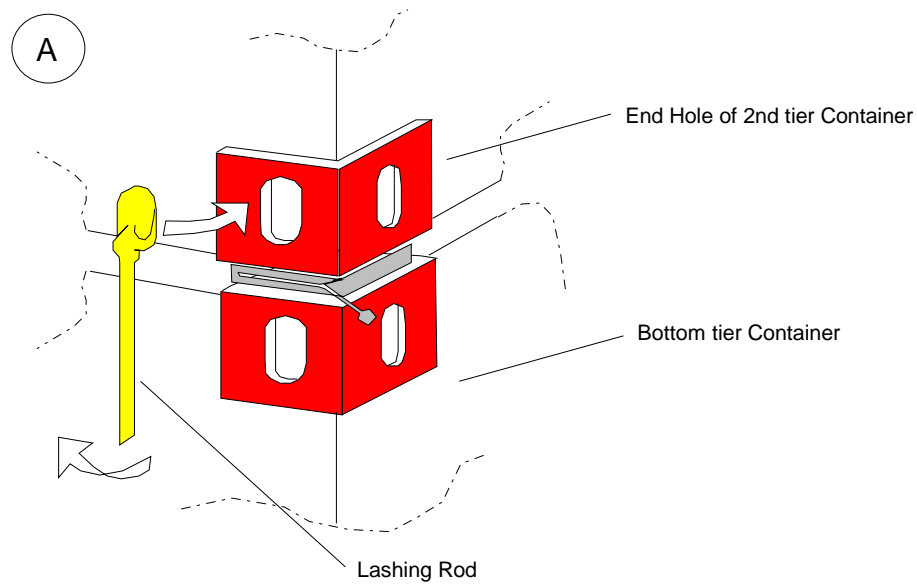


20' Containers on Bay 4 :**FIG. 4-3. - Securing Arrangement for 20' containers on Bay 4.**

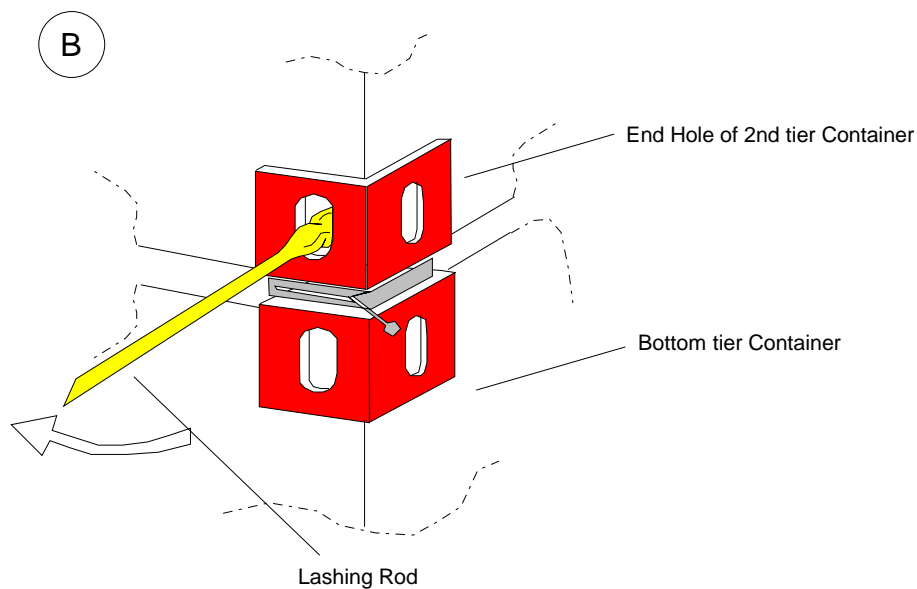
When Stowing 20' containers in Bay 4, each 40' stow position is effectively divided into two - for'd and after.

To secure two high 20' containers in Bay 4, bridge locks are used to secure each stack with the adjoining one. Lashing rod system need not be used. It is not possible to secure lashing bars between two fore/aft containers within Bay 4.

Base locks are used at the Bottom tier and Twist Locks are used between each tier.

Handling Method of Lashing Rod :

- A.** Insert Hook of lashing rod into lower end hole of the second tier container - raise the rod, line up the hook with the end hole, insert.



- B.** Swing the other end to cross lash and attach to the turnbuckle. Tighten the turnbuckle to secure the lash.

Bowed / slacked or overfastened lashing is not desirable. Hand adjust to proper tension with the turn buckle.

20' Containers in Hold 3 :

The following diagram shows stowage pattern and lashing arrangement in Hold 3.

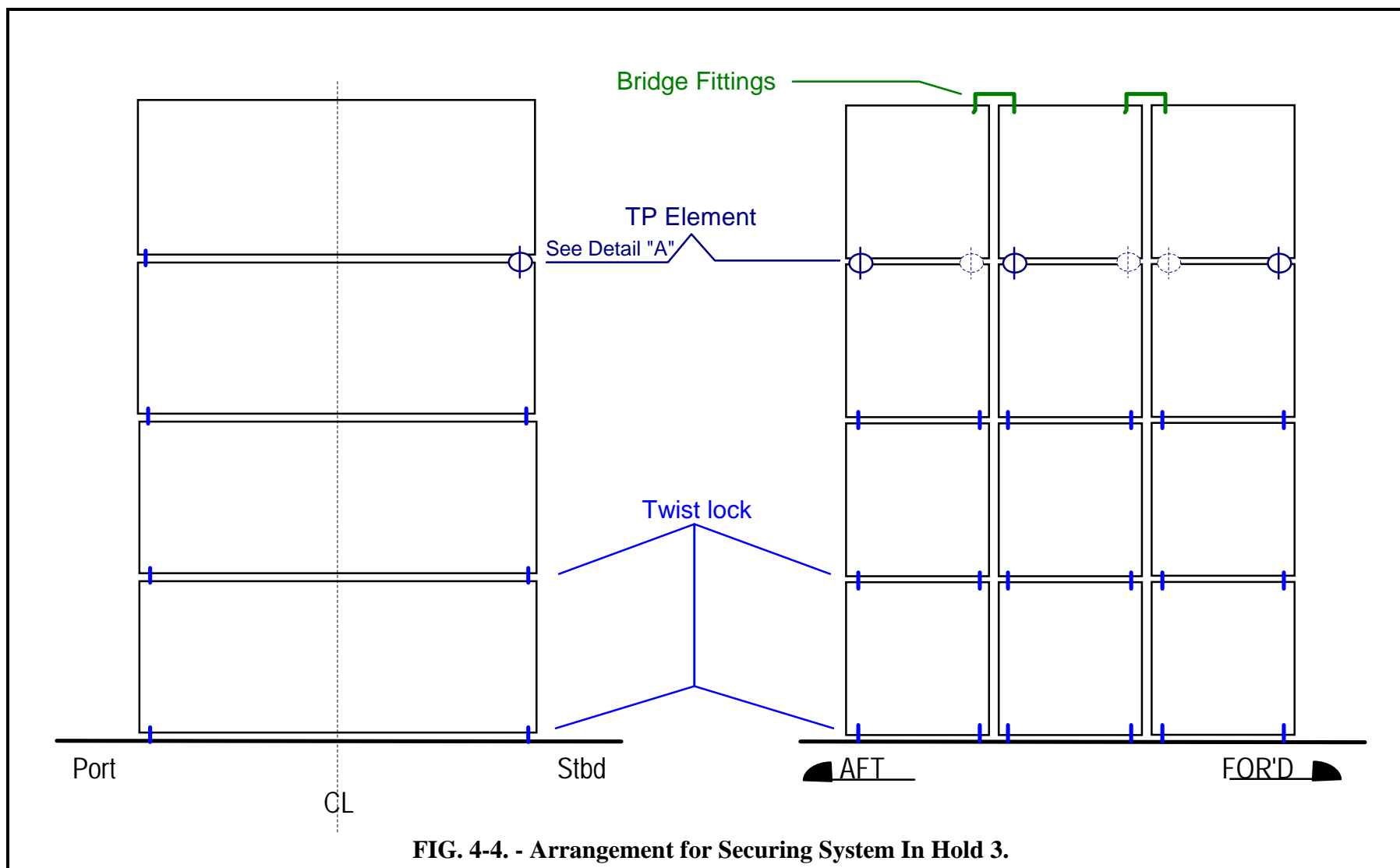


FIG. 4-4. - Arrangement for Securing System In Hold 3.

TP Elements (Buttresses) :

The following diagram "Detail `A'" shows securing arrangement for TP Element when loading 4 high 20' containers in Hold 3.

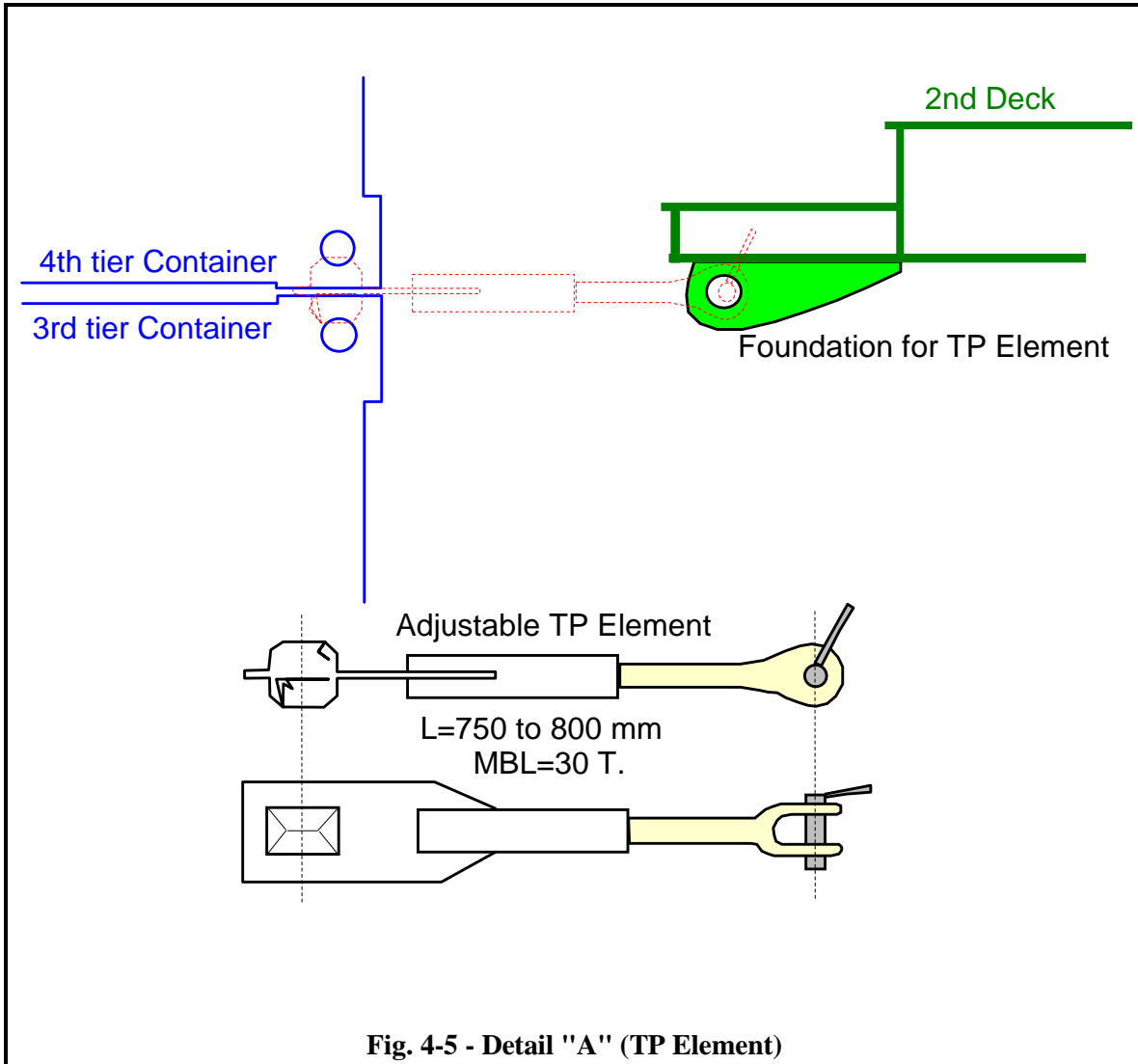


Fig. 4-5 - Detail "A" (TP Element)

The TP Elements (Buttresses) are fastened on one end to the foundation on the 2nd Deck (A deck) of Hold 3.

The other end, shaped like a double cone fits into the upper and lower corner pockets of the 3rd and 4th tier containers. The TP Element is then screwed tight. This then acts as a thrust pad and prevents athwartship racking movement of the containers in Hold 3.