

Lloyd's Register of Shipping.
SURVEYS FOR FREEBOARD.

No. 103106.

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having

a *Flush Deck*.

Port of Survey

Birkenhead

(Type of Superstructures.)

Date of Survey

December 1933.

Ship's Name

"TULIP"

Nationality and Port of Registry

*British
Liverpool*

Official Number

109422

Gross Tonnage

408.87

Date of Build

1897.

Name of Surveyor

Geo. L. Ryle.

Particulars of Classification

*AI PETROLEUM SLUDGE VESSEL
FOR SERVICE IN THE RIVER MERSEY AND AT HEAD*Moulded Dimensions: Length *160.0* ✓ Breadth *27.18* ✓ Depth *11.8* ✓Moulded displacement at moulded draught = 85 per cent. of moulded depth *979* tonsCoefficient of fineness for use with Tables *820*

Depth for Freeboard (D)

Depth correction

Round of Beam correction *.12*Moulded depth ... *11.2 1/2* ✓

(a) Where D is greater than Table depth

(D-Table depth) R = $(11.37 - 10.67) \times 1.23$ Stringer plate ... *1/2* ✓= $+ .86$ ✓

Sheathing on exposed deck

 $T \left(\frac{L-S}{L} \right) =$ ✓

(b) Where D is less than Table depth (if allowed)

(Table depth-D) R = ✓

Depth for Freeboard (D) = *11.37*

If restricted by superstructures ✓

Moulded Breadth (B)

*27.18*Standard Round of Beam = $\frac{B \times 12}{50} =$ *6.51* ✓

Ship's Round of Beam =

7 ✓

Difference

.49 excess

Restricted to

Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.49}{4} \times 1 = -.12$ ✓

DEDUCTION FOR SUPERSTRUCTURES.

| | Mean Covered Length (S) | Equivalent Enclosed Length (S ₁) | Height | Height Correction | Effective Length (E) |
|-------------------------|-------------------------|--|--------|-------------------|----------------------|
| Poop enclosed ... | | | | | |
| " overhang ... | | | | | |
| R.Q.D. enclosed ... | | | | | |
| " overhang ... | | | | | |
| Bridge enclosed ... | | | | | |
| " overhang aft ... | | | | | |
| " overhang forward ... | | | | | |
| F'cle enclosed ... | | | | | |
| " overhang ... | | | | | |
| Trunk aft ... | | | | | |
| " forward ... | | | | | |
| Tonnage opening aft ... | | | | | |
| " " forward ... | | | | | |
| Total ... | | | | | |

Standard Height of Superstructure *6.00* ✓

" " R.Q.D. ✓

Deduction for complete superstructure *22.00* ✓Percentage covered $\frac{S}{L} =$ $\frac{S_1}{L} =$ } *Flush Deck*
 $\frac{E}{L} =$

Percentage from Table, Line A.

(corrected for absence of forecastle (if required))

Percentage from Table, Line B.

(corrected for absence of forecastle (if required))

Interpolation for bridge less than .2L (if required)

Deduction = *NIL*

SHEER CORRECTION.

| Station | Standard Ordinate | S | M | Product | Actual Ordinate | Effective Ordinate | S | M | Product |
|---------------------|-------------------|---|---|---------------|-----------------|--------------------|---|---|---------------|
| A.P. ... | <i>26.00</i> ✓ | 1 | | <i>26.00</i> | <i>28 1/2</i> | <i>26.00</i> | 1 | | <i>26.00</i> |
| 1/4 L from A.P. ... | <i>11.57</i> | 4 | | <i>46.28</i> | <i>12</i> | <i>11.57</i> | 4 | | <i>46.28</i> |
| 2/4 L " ... | <i>2.86</i> | 2 | | <i>5.72</i> | <i>2 1/2</i> | <i>2.86</i> | 2 | | <i>5.72</i> |
| Amidships ... | ✓ | 4 | | ✓ | ✓ | ✓ | 4 | | ✓ |
| 2/4 L from F.P. ... | <i>5.72</i> | 2 | | <i>11.44</i> | <i>6</i> | <i>6.00</i> | 2 | | <i>12.00</i> |
| 1/4 L " ... | <i>23.14</i> | 4 | | <i>92.56</i> | <i>20</i> | <i>20.00</i> | 4 | | <i>80.00</i> |
| F.P. ... | <i>52.00</i> | 1 | | <i>52.00</i> | <i>42 1/2</i> | <i>42.50</i> | 1 | | <i>42.50</i> |
| Total ... | <i>234</i> | | | <i>234.00</i> | | | | | <i>212.50</i> |

Mean actual sheer aft =

Mean standard sheer aft =

Excess ✓

Mean actual sheer forward =

Mean standard sheer forward =

Deficient ✓

Length of enclosed superstructure forward of amidships =

" " aft of " =

Deficient
*sheers*Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{21.50}{18} \times .75 = +.90$ ✓

If limited on account of midship superstructure. ✓

If limited to maximum allowance of $1\frac{1}{2}$ ins. per 100 ft. ✓

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = *11.37* ✓Summer freeboard = *1.92* ✓Moulded draught (d) = *9.45* ✓

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = *2.36* = *2 3/8* ✓

Addition for Winter North Atlantic Freeboard (if required) =

Deduction for Fresh Water.

Displacement in salt water at summer load water line

 $\Delta =$

Tons per inch immersion at summer load water line

 $T =$ Deduction = $\frac{\Delta}{40T}$ inches $=$

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

 $\frac{.82 + .68}{1.30} = \frac{1.50}{1.30}$ Depth Correction ... *.86* ✓Deduction for superstructures ... *-*Sheer correction ... *.90* ✓Round of Beam correction ... *.12* ✓Correction for Thickness of Deck amidships ... *-*Other corrections, scantlings, etc. ... *-**1.76* *.12* *+ 1.64* ✓Summer Freeboard = *22.93*

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck:—

Tropical Fresh Water Line above Centre of Disc ... ✓

Fresh Water Line " " ... *2 1/4* ✓

Tropical Line " " ... ✓

Winter Line below " " ... *2 1/4* ✓

Winter North Atlantic Line " " ... ✓

Tropical Fresh Water Freeboard ... ✓

Fresh Water " " ... *1 - 8 3/4* ✓

Tropical " " ... ✓

Winter " " ... ✓

Winter North Atlantic " " ... ✓

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

| HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS | | | | | | | | | | |
|--|---|---------------------------|--|--|--|--|--|--|--|--|
| Description of Hatchway | | | | | | | | | | |
| Dimensions of Hatchway | | | | | | | | | | |
| COAMINGS | { | Height above Deck ... | | | | | | | | |
| | | Thickness ... | | | | | | | | |
| | | Sides ... | | | | | | | | |
| | | Ends ... | | | | | | | | |
| | | Stiffeners ... | | | | | | | | |
| | | Brackets, Stays ... | | | | | | | | |
| HATCH BEAMS | { | Number | | | | | | | | |
| | | Spacing | | | | | | | | |
| | | Scantling and Sketch ... | | | | | | | | |
| | | Bearing Surface | | | | | | | | |
| FORE AND AFTERS | { | Number | | | | | | | | |
| | | Spacing | | | | | | | | |
| | | Unsupported Lengths ... | | | | | | | | |
| | | Scantling* and Sketch ... | | | | | | | | |
| | | Bearing Surface | | | | | | | | |
| HATCH COVERS | { | Material | | | | | | | | |
| | | Thickness | | | | | | | | |
| | | How fitted | | | | | | | | |
| | | Bearing Surface | | | | | | | | |
| Spacing of Cleats | | | | | | | | | | |
| Number of Tarpaulins | | | | | | | | | | |
| <p>*Are wood fore and afters steel shod at all bearing surfaces? ✓</p> <p>Are battens and wedges efficient and in good condition? ✓</p> <p>Are tarpaulins in good condition and in accordance with rule requirements? ✓</p> <p>Are lashings provided in accordance with rule requirements? ✓</p> | | | | | | | | | | |

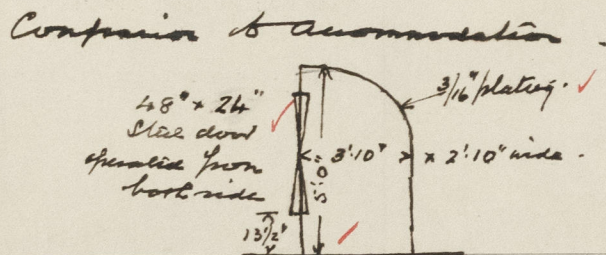
Particulars of fiddle, funnel and ventilator coamings:—

Fiddle top, vents & funnel are in good condition ✓
Skirting steel covers are fitted to openings ✓

Particulars of Flush Bunker Scuttles:—

Fitted. ✓

Particulars of Companionways:—



Particulars of Ventilators in exposed positions on freeboard and superstructure decks:—

1 - 8\"/>

Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks:—

Fore Peak 3\"/>

Particulars of Gangway Cargo and Coaling Ports:—

Fitted. ✓



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Tulip

Particulars of Scuppers and Sanitary Discharge Pipes :—

1 at 4" Dia 1'6" below deck fitted with G.M. Non Return Valve. ✓

Particulars of Side Scuttles :—

Portlights 8 at 10" x 4 at 6" is Accommodation on fitted with deadlight ✓

Particulars of Guard Rails :—

See attached plans.

Particulars of Gangways, Lifelines, etc. :—

Two lifelines 1 Port & 1 Star are fitted ✓

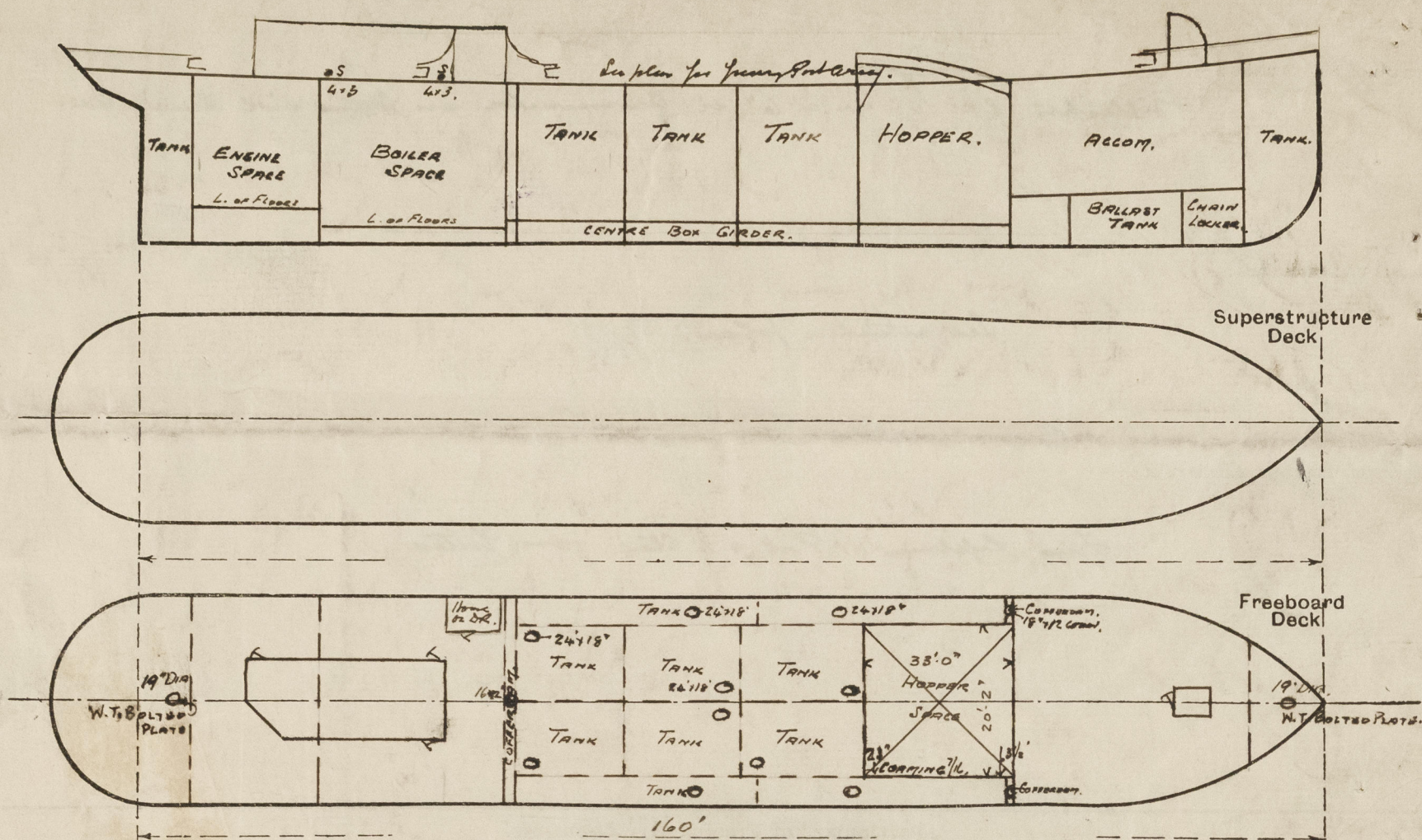
| Particulars of Freeing Arrangements. | | | | | | |
|--|-------------------|---|-----------------------|------------------|----------------|---------------------|
| | Length of Bulwark | Height of Bulwark | Size of Freeing Ports | Number each side | Area each side | Rule area each side |
| After Well | Star Side { | See attached Plan Area of Bulwark 497.42 sq ft. Freeing Area 249.75 " " ✓ | | | | 22.40 ft ✓ |
| Forward Well | Port Side { | Area of Bulwark 466.62 " " 234.0 " " ✓ | | | | |
| State position of each freeing port { After Well :— (F. and A. position and height above deck edge) { Forward Well :— ✓ State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such :— ✓ Additional area where sheer is less than standard. | | | | | | |

| Particulars of Superstructures, Trunks, Casings, Deckhouses. | | | | | | | | |
|--|--|---------|------------------------|----------|-------------------------------|------------------|-----------------|-------------------|
| | Coaming | Plating | Stiffeners | Spacing | End Attachments of Stiffeners | Size of Openings | Height of Sills | Height of Casings |
| Poop Bulkhead | ✓ | | | | | | | |
| Raised Quarter Deck Bulkhead ... | ✓ | | | | | | | |
| Bridge, After Bulkhead | ✓ | | | | | | | |
| Bridge, Forward Bulkhead | ✓ | | | | | | | |
| Forecastle Bulkhead | ✓ | | | | | | | |
| Trunk, Aft | ✓ | | | | | | | |
| Trunk, Forward | ✓ | | | | | | | |
| Exposed Machinery Casings on Free-board or Raised Quarter Decks ... | 5/16 ✓ | 7/16 ✓ | 2 1/2 x 2 1/2 x 7/16 ✓ | 28 ✓ | Plating brackets at 10% only | 4'0" x 2'0" ✓ | 15" ✓ | 6'6" ✓ |
| Exposed Machinery Casings on Super-structure Decks | ✓ | | | | | | | |
| Machinery Casings within Superstructures not fitted with Class I Closing Appliances | ✓ | | | | | | | |
| Deckhouses on Flush Deck Ships ... | 7/20 ✓ | 7/20 ✓ | 2 1/2 x 2 1/2 x 7/16 ✓ | One only | ✓ | 4'0" x 2'0" ✓ | 15" ✓ | 6'6" ✓ |
| Particulars of Closing Appliances (state if capable of being manipulated from both sides). | | | | | | | | |
| Poop Bulkhead | ✓ | | | | | | | |
| Raised Quarter Deck Bulkhead ... | ✓ | | | | | | | |
| Bridge, After Bulkhead | ✓ | | | | | | | |
| Bridge, Forward Bulkhead | ✓ | | | | | | | |
| Forecastle Bulkhead | ✓ | | | | | | | |
| Exposed Machinery Casings on Free-board or Raised Quarter Decks ... | Steel Doors operated from both sides ✓ | | | | | | | |
| Exposed Machinery Casings on Super-structure Decks | ✓ | | | | | | | |
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| Deckhouses on Flush Deck Ships ... | Steel Doors operated from both sides ✓ | | | | | | | |



Julij

Superstructure bulkheads, trunks, deckhouses, casings, cargo and coaling hatchways, extent and thickness of sheathing on the freeboard deck, gangway, cargo and coaling ports, and any other openings, etc., which would affect the seaworthiness of the ship are to be shewn on the following sketches:—



*Oil-light boiler plate, as fitted to
all tanks, plate rings are made
by C. White & Co. Glasgow*

State any special features in the construction of the ship:—

*This vessel has been converted from a Section Pump
Drager into a vessel fitted for cleaning tanks in cargo and oil
carrying steamers, and intended for service in the River Mersey
and at Holyhead ✓*

Allocations will be completed in about 7 days time

Five plans are forwarded for reference. ✓

Builder's name and yard number *Edwin J. T. A. WALKER. SUDBROOK. MON. YARD N° 60*
Names of sister ships *✓*
Owners *MESSRS GRAYSON POLLO AND CLOVERS DRY DOCK CO. LTD.*

Fee £ *6 : 0 : 0* Received by me *See Long Letter 3/10/33.*

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

| HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS | | | | | | | | | |
|---|-----|-----------------------|-----|-----|-----|-----|-----|-----|-----|
| Description of Hatchway | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Dimensions of Hatchway | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| COAMINGS | { | Height above Deck | ... | | | | | | |
| | | Thickness | ... | | | | | | |
| | | Sides | ... | | | | | | |
| | | Ends | ... | | | | | | |
| | | Stiffeners | ... | | | | | | |
| | | Brackets, Stays | ... | | | | | | |
| HATCH BEAMS | { | Number | ... | | | | | | |
| | | Spacing | ... | | | | | | |
| | | Scantling and Sketch | ... | | | | | | |
| | | Bearing Surface | ... | | | | | | |
| FORE AND AFTERS | { | Number | ... | | | | | | |
| | | Spacing | ... | | | | | | |
| | | Unsupported Lengths | ... | | | | | | |
| | | Scantling* and Sketch | ... | | | | | | |
| | | Bearing Surface | ... | | | | | | |
| HATCH COVERS | { | Material | ... | | | | | | |
| | | Thickness | ... | | | | | | |
| | | How fitted | ... | | | | | | |
| | | Bearing Surface | ... | | | | | | |
| Spacing of Cleats | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Number of Tarpaulins | ... | ... | ... | ... | ... | ... | ... | ... | ... |

*Are wood fore and afters steel shod at all bearing surfaces? ✓
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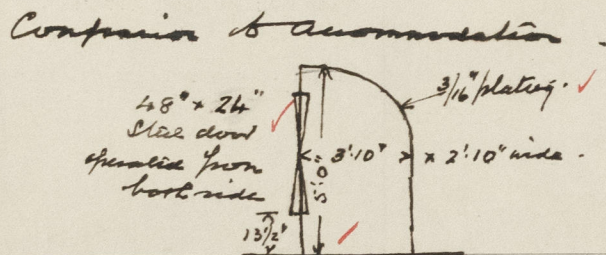
Particulars of fiddle, funnel and ventilator coamings:—

*Fiddle top, vents & funnel are in good condition ✓
 Skirting steel covers are fitted to openings ✓*

Particulars of Flush Bunker Scuttles:—

Fil. ✓

Particulars of Companionways:—



Particulars of Ventilators in exposed positions on freeboard and superstructure decks:—

*1 - 8" DIA. MUSHROOM 16" with lens down top.
 2 - 18" " " 28" " " "
 1 - 6" VENT Grating 36" x 3/8" round plug and canvas cover fitted ✓*

Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks:—

*Fore Peak 3" Dia 28" high. Round plug canvas cover fitted ✓
 " Dup. 2-3" " " " " " "
 Cargo Tanks 10 @ 6" DIA. 36" " Gangs and portable steel bands ✓
 Cofferdams 4 @ 2" x 36" " " " "
 Aft Peak 1 @ 2" x 36" " Round plug canvas cover fitted ✓*

Particulars of Gangway Cargo and Coaling Ports:—

Fil. ✓



Tulip

Particulars of Scuppers and Sanitary Discharge Pipes :—

1 at 4" Dia 1'6" below deck fitted with G.M. Non Return Valve. ✓

Particulars of Side Scuttles :—

Portlights 8 at 10" x 4 at 6" is Accommodation on fitted with deadlight ✓

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| Forecastle Bulkhead | ✓ | | | | | | | |
| Trunk, Aft | ✓ | | | | | | | |
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| Exposed Machinery Casings on Super-structure Decks | ✓ | | | | | | | |
| Machinery Casings within Superstruc-tures not fitted with Class I Closing Appliances | ✓ | | | | | | | |
| Deckhouses on Flush Deck Ships ... | 7/20 ✓ | 7/20 ✓ | 2 1/2 x 2 1/2 x 7/16 ✓ | One only | ✓ | 4'0" x 2'0" ✓ | 15" ✓ | 6'6" ✓ |
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| Bridge, Forward Bulkhead | ✓ | | | | | | | |
| Forecastle Bulkhead | ✓ | | | | | | | |
| Exposed Machinery Casings on Free-board or Raised Quarter Decks ... | Steel Doors operated from both sides ✓ | | | | | | | |
| Exposed Machinery Casings on Super-structure Decks | ✓ | | | | | | | |
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