

Rpt. 17.

11523

B.C.

Incl.

No. 9023.

## Report on Refrigerating Machinery and Appliances.

Inspected at London Office

17 MAR 1952

Date of writing Report 8-3-52. When handed in at Local Office 8-3-52 Port of SINGAPORE.

No. in Reg. Book. Survey held at SINGAPORE Date: First Survey 11-7-51 Last Survey 18-2-1952  
21601 (Number of Visits 9)

on the Refrigerating Machinery and Appliances of the STEEL TWIN S.S. "M.V. ORESTES" Tons Gross 7765 Net 4737

Vessel built at BELFAST By whom built WORKMAN BROS. &amp; CO. Ltd. Yard No. — When built 1926.

Owners OCEAN S.S. CO. LTD. Port belonging to LIVERPOOL. Voyage —

Refrigerating Machinery made by J. E. HALL LTD. Machine Nos. 6448 When made 1926.

Insulation fitted by — When fitted — System of Refrigeration CARO HUNT

Method of cooling Cargo Chambers BRINE / BRINE AND AIR. Insulating Material used CORN

Number of Cargo Chambers insulated 8 Total refrigerated cargo capacity 134,430 cubic feet

## DESCRIPTION OF REFRIGERATING MACHINERY. Where placed FORWARD END SHaft TUNNEL.

Refrigerating Units, No. of 2 No. of machines 1 Is each machine independent YES.

Total refrigeration or ice-melting capacity in tons per 24 hours 48 (R.B.) Are all the units connected to all the refrigerated chambers YES.

Compressors driven DIRECT through single reduction gearing. Compressors, single or double acting DOUBLE If multiple effect compression YES.

Are relief valves or safety discs fitted YES. No. of cylinders to each unit ONE Diameter of cylinders 4 1/8 ins.

Diameter of piston rod 2 Length of stroke 15 No. of revolutions per minute 90.

Motive Power supplied from 4 Diesel Engine Generators (Bat. Act. Bat. Fwd., Star Act., Star Fwd.)

Steam Engines, high pressure, compound, or triple expansion, surface condensing. No. of cylinders — Diameter —

Length of stroke — Working pressure — Diameter of crank shaft journals and pins —

Breadth and thickness of crank webs — No. of sections in crank shaft — Revolutions of engines per minute —

Oil Engines, type B.W. (Solid Injection) 2 or 4 stroke cycle 4 Single or double acting SINGLE B.H.P. 150.

No. of cylinders 2 Diameter 3.25 ins. Length of stroke 3.50 ins. Span of bearings as per Rule —

Maximum pressure in cylinders — Diameter of crank shaft journals and pins JOURNALS 170 mm, Pins 190 mm.

Breadth and thickness of crank webs BREADTH 330 mm THICKNESS 100 mm No. of sections in crank shaft 5.00 Revolutions of engine per minute 300.

Air Receivers: Have they been made under survey — State No. of Report or Certificate —

Is each receiver, which can be isolated, fitted with a safety valve as per Rule YES.

Can the internal surfaces of the receivers be examined and cleaned YES. Is a drain fitted at the lowest part of each receiver YES.

No. of Receivers 2 Cubic capacity of each 1300 cu. ft. Internal diameter 7'-2" thickness 1 3/8"

Seamless, lap welded or riveted longitudinal joint RIVETED Material M.S. Range of tensile strength — Working pressure by Rules 335 lb/sq. in.

Electric Motors, type OPEN - 2 PEDESTAL No. of 2 Rated 120 BHP Kilowatts 220 Volts

at 450/300 revolutions per minute. Diameter of motor shafts at bearings 5 1/2"

Reduction Gearing SINGLE Pitch circle diameter, pinion 5" Main wheel 22 1/4" Width of face 13 1/2"

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings, pinion 17" Main wheel 11 3/4"

Pinion shafts, diameter at bearings 3 7/8" Main wheel shaft, diameter at bearings 6"

Gas Condensers, No. of 2 Cast iron or steel casings CAST IRON. Cylindrical or rectangular Cylindrical Are safety valves fitted

to casings YES. No. of coils in each 2000 ft. 1/2" Material of coils COPPER Can each coil be readily shut off or disconnected YES.

Water Circulating Pumps, No. and size of pumps available 1 @ 3 BHP how worked ELECT MOTOR Gas Separators, No. of 2

Gas Evaporators, No. of 2 Cast iron or steel casings CAST IRON Pressure or gravity type PRESSURE If pressure type, are safety

valves fitted YES. No. of coils in each casing 2000 ft. 1/2" Material of coils S.D. STEEL COPPER NPS Can each coil be readily shut off or disconnected YES.

Direct Expansion or Brine Cooled Batteries, No. of 1 Are there two separate systems, so that one may be in use while the other is being

cleared of snow YES. No. of coils in each battery 2 Material of coils S.D. STEEL Can each coil be readily shut off or

disconnected YES. Total cooling surface of battery coils 5915 sq. ft. Is a watertight tray fitted under each battery YES.

Air Circulating Fans, Total No. of 2 @ 3 BHP each of — cubic feet capacity, at 525 revolutions per minute

Steam or electrically driven ELECTRICALLY Where spare fans are supplied are these fitted in position ready for coupling up YES.

Brine Circulating Pumps, No. and size of, including the additional pump 2 @ 15 BHP how worked ELECT MOTOR

Brine Cooling System closed or open OPEN. Are the pipes and tanks galvanised on the inside NO.

No. of brine sections in each chamber No. 4 CENTRAL CHAMBER (4), No. 4 T.D. LOCKER (2), No. 4 T.D. SQUARE (3), No. 4 HEAD (0),

No. 5 T.D. SQUARE (5), No. 5 T.D. LOCKERS (2), No. 5 HOLD (7), No. 6 T.D. LOCKERS (4)

Can each section be readily shut off or disconnected YES. Are the control valves situated in an easily accessible position YES.

NOTE.—THE WORDS WHICH DO NOT APPLY SHOULD BE DELETED.

20/12/51. (MADE AND PRINTED IN ENGLAND.)

003875-003883-0079 1/2

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Is the exhaust steam led to the main and auxiliary condensers.....

DESCRIPTION.	Date of Test.	Working Pressure.	Hydraulic Test Pressure.	Air Test Pressure.	Stamped.	REMARKS.
Engine Cylinders (if tested) ... ..						
Gas Compressors ... ..						
„ Separators ... ..						
„ Multiple Effect Receivers ... ..						
„ Condenser Coils ... ..						
„ Evaporator Coils ... ..						
„ Condenser Headers and Connections						
„ Condenser Casings ... ..						
„ Evaporator Casings ... ..						
NH <sub>3</sub> Condenser, Evaporator and Air Cooler Coils after erection in place						
Brine Piping after erection in place...						

time after the machinery and cooling appliances have been shut off

Additional Spare Gear Supplied:— Set of crosshead brasses, sets of top and bottom end bearings, set of crankshaft coupling bolts, Set (2) of packing for compressor piston rods, two compressor liners, Two compressor pistons and rods, set of compressor suction and delivery valves, spare circulating pump impeller and shaft, spare from pump impeller and shaft, spare driving gear pinion shaft, assorted lengths of piping with flange and flanges, couplings and screwing appliances, assorted valves, cocks and fittings, assorted bolts, nuts and washers, valves and springs, packing and joint rings.

...Manufacturer.

## IN TWENTY DECK CHAMBERS

[illegible]

Tunnel Recess, Front and Top

Ribband on Top of Decks 3'-0" x 5" x 3" wood SH-777448

Web Frames, Sides, and Face

Brackets, Top *Enclosed in Insulation* Bottom *Enclosed in Insulation* and Face *Minimum 1/2 ins.*

Insulated Hatches, Main	18 inches	Bilge	18 inches	Manhole	18 inches
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Hatchway Coamings, Main ..... Bilge .....

Hold Pillars *EFFICIENTLY INSULATED.*

Masts \_\_\_\_\_ Ventilators ENCLOSED IN INSULATION. (ASBESTOS FIBER)

Are insulated plugs fitted to provide easy access to bilge suction roses.....Yes..... tank, air, and sounding pipes.....Yes..... heels of pillars.....—.....

and manhole doors of tanks. Yes. Are insulated plugs fitted to ventilators. Yes cargo ports. None and side lights. None.

Is the insulation of the lower hold floor and tunnel top in way of the hatchways protected..... Yes..... if so, how..... 3"x3" PERMANENT BATTINS.....

**Oil Storage Tanks,** where adjacent to the insulated chambers, state what provision has been made for ventilating the air space between the insulation

and the Guinean party

.....

Cooling Pipes pass through watertight bulkheads on deck plating and the fittings and packing of the stuffing boxes herewith watertight and secure of V.S.

Cargo Battens, Dimensions and spacing, sides  $2\frac{1}{2} \times 4\frac{1}{2}$ " (normal) Spacing  $5 \times 3 \times 15$ " Tunnel top  $5 \times 3 \times 15$ "

fixed or portable fixed or portable Are screens fitted over the brine grids at chamber sides Yes hinged or permanently fixed fixed or portable

Thermometer Tubes, No. and position in each chamber No 5TD 60mm 34 up, 18; No 5TD 50mm 42 up, 22; No 5TD 40mm 20 up, 18; No 6TD 40mm 25;

diameter 3 ins. are they fitted in accordance with Section 3, Clause 8. YES

**Protection of Pipes.** Are all pipes, including air and sounding pipes, which pass through or into insulated chambers, well insulated.....Yes

**Drainage Arrangements.** What provision is made for draining the inside of the chambers..... TRAPPED SEWERS

Where stances, scupper pipes, and drain pipes are fitted are means provided for blanking them off. Yes

What problem is made for maintaining the refrigerating machinery room. Answer - It is made for

Are all air spaces behind insulation properly sealed?

007921



Sounding Pipes, No. and position in each chamber situated below the load water line. *Port. Star No. 4 and No. 5 Hold*

Diameter *3 ins.* Are all sounding pipes in way of insulated chambers fitted in accordance with Section 3, Clause 11. *Yes*

Are all wood linings tongued and grooved. *Yes* Are cement facings reinforced with expanded steel lattice. *—*

How is the expanded metal secured in place. *—*

How are the cork slabs secured to the steel structure of the vessel. *—*

Air Trunkways in Chambers. Are the arrangements satisfactory and in accordance with the approved plans. *—*

Are they permanently fixed or collapsible, or portable. *Collapsible and Portable*

Where air trunkways pass through watertight bulkheads, are they fitted with watertight doors. *—* Are the door frames efficiently insulated. *—*

Are insulated plugs supplied for the doorways. *—* Where are the doors worked from. *—*

Cooling Pipes in Chambers, diameter *1 29/32"* Minimum thickness *7 w.g.* Are they galvanised externally. *No.*

How are they arranged in the chambers. *Top and Sides*

Thawing Off, what provision is made for removing the snow from the cooling pipes in the chambers. *Hot Brine*

The foregoing is a correct description of the Insulation and Appliances.

Builders.

Plans. Are approved Plans or Specifications forwarded herewith for the Refrigerating Machinery *—* and Insulation *—*  
(If not, state date of approval)

Is the Refrigerating Machinery and Appliances duplicate of a previous case. *Yes* If so, state name of vessel. *"Idomeneus"*

If the survey is not complete, state what arrangements have been made for its completion and what remains to be done. *Survey complete*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The refrigerating machinery and appliances of this vessel have been opened up and examined as required for a subsequent Special Survey and found in satisfactory condition. The materials used and the workmanship throughout are good. The refrigerating installation, in my opinion, is in good and efficient condition and is eligible to have the notation of RMC (with date) "To maintain temperature 12°F, with sea temperature 90°F maximum."*

*(As requested in your letter Class (H) dated 8<sup>th</sup> March, 1951. the London copy of Rpt 17/12/51 is returned herewith)*

# PARTICULARS TO BE ENTERED IN REGISTER BOOK.

REFRIGERATING MACHINES.					System of (1) Refrigerating (2) Insulating the Chambers.	Ice melting capacity per 24 hours.	Is Refrigerating Machinery Electrically Driven?	INSULATED CARGO CHAMBERS.	
No. of Units.	No. of Compressors.	System.	Makers.	Date of Construction.				No.	Capacity.
<i>2</i>	<i>2</i>	<i>COR</i>	<i>J. E. HALL, LD.</i>	<i>1928</i>	<i>(1) BROWN HIR (2) COOK</i>	<i>Tons.</i>	<i>Yes</i>	<i>8</i>	<i>Cubic ft. 134,430</i>

Fee £ : : (Fee applied for, 19

Travelling Expenses £ : : Received by me, 19

*W. P. Watson*

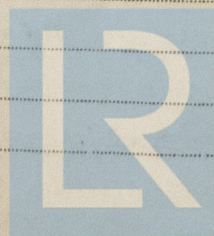
Surveyor to Lloyd's Register.

TUE. 25 MAR 1952

Committee's Minute

Assigned

*See Sug. 4p. 9022*



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