

Report on Refrigerating Machinery and Appliances.

Received at London Office

Date of writing Report 19 When handed in at Local Office 15 MAY 1952 Port of LIVERPOOL

No. in Reg. Book. Survey held at LIVERPOOL Date: First Survey 29/2/52 Last Survey 29-4-1952

(Number of Visits 14)

on the Refrigerating Machinery and Appliances of the SS PATRICIAN Tons Gross Net

Vessel built at SUNDERLAND By whom built J THOMPSON & SONS LTD Yard No. When built 1947-6

Owners ELLERMAN LINES LTD Port belonging to LIVERPOOL Voyage

Refrigerating Machinery made by J & E HALL LTD Machine Nos. 15080/1 When made 1952

Insulation fitted by CORK INSULATION & ASB CO LTD When fitted 1952 System of Refrigeration FREON (C)

Method of cooling Cargo Chambers DIRECT EXPANSION Insulating Material used FIBRE ROG & SLUG CORK

Number of Cargo Chambers insulated 2 Total refrigerated cargo capacity 10,860 cubic feet

DESCRIPTION OF REFRIGERATING MACHINERY. Where placed ENGINE ROOM (AFT END - TWEEN DECK LEVEL)

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

Total refrigeration or ice-melting capacity in tons per 24 hours 83 Are all the units connected to all the refrigerated chambers Yes

Compressors, driven direct or through VEE BELTS reduction gearing. Compressors, single or double acting SINGLE If multiple effect compression No

Are relief valves or safety discs fitted Yes No. of cylinders to each unit 2 Diameter of cylinders 6 1/2"

Diameter of piston rod TRUNK TYPE Length of stroke 5" No. of revolutions per minute 600

Motive Power supplied from 3 REIP STEAM DRIVEN D.C. GENERATORS (State number of boilers, oil engines or electric generators supplying the motive power.)

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 2 or 4 stroke cycle Single or double acting B.H.P.

No. of cylinders Diameter Length of stroke Span of bearings as per Rule

Maximum pressure in cylinders Diameter of crank shaft journals and pins

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

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

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

No. of Receivers Cubic capacity of each Internal diameter thickness

Seamless, lap welded or riveted longitudinal joint Material Range of tensile strength Working pressure by Rules

Electric Motors, type MARINE DRIP PROOF No. of 2 Rated 25 HP Revolutions 110 Volts

at 1750 revolutions per minute. Diameter of motor shafts at bearings

Reduction Gearing Pitch circle diameter, pinion Main wheel Width of face

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings, pinion Main wheel

Pinion shafts, diameter at bearings Main wheel shaft, diameter at bearings

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

to casings No. of coils in each 36 Material of coils YORK ALLOY Can each coil be readily shut off or disconnected No

Water Circulating Pumps, No. and size of pumps available 2-2700 G.P.M. how worked ELECTRICALLY Gas Separators, No. of 2

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

valves fitted No. of coils in each casing Material of coils Can each coil be readily shut off or disconnected

Direct Expansion or Brine Cooled Batteries, No. of 2 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 7 Material of coils Can each coil be readily shut off or

disconnected YES Total cooling surface of battery coils 1650 Is a watertight tray fitted under each battery Yes

Air Circulating Fans, Total No. of 2 each of 4,000 cubic feet capacity, at 1529/2280 revolutions per minute

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

Brine Circulating Pumps, No. and size of, including the additional pump how worked

Brine Cooling System, closed or open Are the pipes and tanks galvanised on the inside

No. of brine sections in each chamber

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



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DESCRIPTION OF INSULATION.

IN LOWER HOLD CHAMBERS.

IN 'TWEEN DECK CHAMBERS.

[illegible]

Frames or Reverse Frames, Face. $2\frac{1}{2} \times 4$ " WOOD GROUNDS

Bulkhead Stiffeners, Top. ✓ Bottom. ✓ and Face. ✓

Ribband on Top of Decks. ✓

Side Stringers, Top. ✓ Bottom. ✓ and Face. ✓

Web Frames, Sides. ✓ and Face. ✓

Brackets, Top. $2\frac{1}{4}$ ✓ $1\frac{1}{2}$ " WOOD GROUNDS Bottom. ✓ and Face. ✓

Insulated Hatches, Main. ✓ Bilge. ✓ Manhole. ✓

Hatchway Coamings, Main. ✓ Bilge. ✓

Hold Pillars. ✓

Masts. ✓ Ventilators. 6" FIBEROC. ✓

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

and manhole doors of tanks. ✓ Are insulated plugs fitted to ventilators. ✓ cargo ports. ✓ and side lights. ✓

Is the insulation of the lower hold floor and tunnel top in way of the hatchways protected. ✓ if so, how. ✓

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 bulkhead plating. ✓

and for draining the tank top. ✓

Fireproof Insulation. Is the insulation and woodwork fireproof in way of bunkers or any surfaces exposed to excessive heat. ✓ Where

Cooling Pipes pass through watertight bulkheads or deck plating, are the fittings and packing of the stuffing boxes both watertight and fireproof. ✓

Cargo Battens, Dimensions and spacing, sides. $2 \times 2 \times 12$ " ✓ floors. PORTABLE ✓ tunnel top. ✓

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

Thermometer Tubes, No. and position in each chamber. APPROVED TYPE OF FLEET REGARDING THERMOMETERS IN SPACES & AIR DUCTS (AS ATTACHED LIST.)

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

Protection of Pipes. Are all pipes, including air and sounding pipes, which pass through or into insulated chambers, well insulated..... 9/20 ✓

Draining Arrangements. What provision is made for draining the inside of the chambers. TRAPPED SCUPPERS TO BILGES PARTIAL - FWD PART ✓

Where sluices, scupper pipes, and drain pipes are fitted are means provided for blanking them off..... 9/20 ✓

What provision is made for draining the refrigerating machinery room..... DIRECT TO ER BILGE ✓

brine return room..... ✓ fan room DIRECT TO BILGE ✓ water circulating pump room ER BILGE ✓

Are all air spaces behind insulation arranged to drain to the bilges, bilge wells, or gutterways of the respective chambers..... ✓

The foregoing is a correct description of the Refrigerating Machinery.

....*Manufacture*

Sounding Pipes, No. and position in each chamber situated below the load water line. ✓
Diameter. ✓ 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. BONDED PLYWOOD 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. HOT BITUMEN. ✓
Air Trunkways in Chambers. Are the arrangements satisfactory and in accordance with the approved plans. ✓ YES
Are they permanently fixed or collapsible, or portable. PERMANENTLY FIXED. ✓
Where air trunkways pass through watertight bulkheads, are they fitted with watertight doors. Are the door frames efficiently insulated.
Are insulated ^{DOORS} ~~doors~~ supplied for the doorways. YES Where are the doors worked from. HATCH TRUNK. ✓
Cooling Pipes in ^{BATTERIES} ~~Chambers~~, diameter. 1 1/8" O.D. Minimum thickness. WITH 3 GILLS PER INCH Are they galvanised externally. ✓ YES.
How are they arranged in the chambers. FOUR IN EACH CHAMBER (DIRECT EXPANSION BATTERIES)
Thawing Off, what provision is made for removing the snow from the cooling pipes in the chambers. WATER SPRAY PIPES
(SEA WATER AT SEA — FRESH WATER IN CONTAMINATED WATERS.)
The foregoing is a correct description of the Insulation and Appliances.

Builder

Plans. Are approved Plans or Specifications forwarded herewith for the Refrigerating Machinery. 11-9-51 and Insulation. 7-3-52.
(If not, state date of approval)
Is the Refrigerating Machinery and Appliances duplicate of a previous case. ✓ If so, state name of vessel. ✓
If the survey is not complete, state what arrangements have been made for its completion and what remains to be done. Complete. ✓

General Remarks (State quality of workmanship, opinions as to class, &c.)
Vessel has been converted to carry refrigerated produce in
Nº 4 tween deck port & starboard chambers.
Insulation and Appliances installed under Special Survey in
accordance with approved plans, Specifications & Secretary's letters
Refrigerating Machinery installed under Special Survey
at Messrs J. & C. Hall Ltd Cardiff has now been installed
on board, cooling down tests carried out and found
satisfactory, Electrical Motor Test Certificates & London report Nº 5460
herewith attached.
The refrigerating Machinery and Appliances of this Vessel
are eligible in our opinion to be classed, in the Register
Book with Notation F. Lloyd's RMC 4-52. "to maintain
temp minus 5°F with sea temp ± 75°F maximum.

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. Cubic ft.
2	4	<u>Direct expansion</u> <u>FACON (12)</u>	<u>J. & C. HALL LTD</u>	<u>1952</u>	<u>DIRECT EXPANSION</u> <u>FLUORETONE</u> <u>SHAB CORK</u>	<u>23</u>	<u>yes</u>	<u>2</u>	<u>10,86</u>

Fee Paid. £24-5-0. Fee applied for. 15 MAY 1952
Travelling Expenses £ 20-15-0 Received by me, 19
Surveyor to Lloyd's Register.

Committee's Minute. TUES. 22 JUL 1952
Assigned. + Lloyd's Rmc 4-52 Rmt
Note to him to maintain temp minus 5°F
(1 cub) with sea temp 75°F max
CERTIFICATE WRITTEN.
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17.9.52