

Rpt. 17.

No. 22114

REPORT ON REFRIGERATING MACHINERY AND APPLIANCES.

(Received at London Office)

Date of writing Report 14th DEC. 1942. When handed in at Local Office 17th DECEMBER 1942 Port of GREENOCK.

No. in Reg. Book. Survey held at PORT GLASGOW. Date: First Survey 4th SEPT. 1942. Last Survey 14th DECEMBER 1942 (No. of Visits 25.)

on the Refrigerating Machinery and Appliances of the EMPIRE PENNANT. Tons { Gross 7043 Net 4909

Vessel built at PORT GLASGOW. By whom built LITHGOWS LIMITED Yard No. 972. When built 1942.

Owners MINISTER OF WAR TRANSPORT Port belonging to GREENOCK Voyage ✓

Refrigerating Machinery made by J. E. HALL, DARTFORD. Machine No. 11081 When made 1942.

Insulation fitted by MILLER INSULATION CO When fitted 1942. System of Refrigeration NH₃ AIR.

Method of cooling Cargo Chambers AIR CIRCULATION. Insulating Material used SPLITTED SLAB CORK

Number of Cargo Chambers insulated FOUR. Total refrigerated cargo capacity 229,900 cubic feet.

DESCRIPTION OF REFRIGERATING MACHINERY. Where placed *Tween Decks*

Refrigerating Units, No. of _____ Single, double, or triple _____ Cubic feet of air delivered per hour _____

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

Compressors, driven direct or through ^{single}/_{double} reduction gearing. Compressors, single or double acting _____ No. of cylinders _____

Diameter of cylinders _____ Diameter of piston rod _____ Length of stroke _____ No. of strokes per minute _____

Motive Power supplied from *2 Main and One Auxiliary boilers*

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 _____

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 _____

Electric Motors, type _____ No. of _____ Rated _____ Kilowatts _____

Volts at _____ revolutions per minute. Diameter of motor shafts at bearings _____

Reduction Gearing, maximum shaft horse power at 1st pinion _____ Revolutions per minute at full power at 1st pinion _____

2nd pinion _____ 1st reduction wheel _____ main shaft _____ Pitch circle diameter, 1st pinion _____ 2nd pinion _____

1st reduction wheel _____ Main wheel _____ Width of face, 1st reduction wheel _____ Main wheel _____

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings, 1st pinion _____ 2nd pinion _____

1st reduction wheel _____ Main wheel _____ Flexible pinion shafts, diameter 1st _____ 2nd _____

Pinion shafts, diameter at bearings, External, 1st _____ 2nd _____ Internal, 1st _____ 2nd _____

Diameter at bottom of teeth of pinion, 1st _____ 2nd _____ Wheel shafts, diameter at bearings, 1st _____

Main _____ Diameter at wheel shroud, 1st _____ Main _____

Gas Condensers, No. of _____ Cast iron or steel casings _____ Cylindrical or rectangular _____

No. of coils in each _____ Material of coils _____ Can each coil be readily shut off or disconnected _____

Water Circulating Pumps, No. and size of _____ how worked _____ Gas Separators, No. of _____

Gas Evaporators, No. of _____ Cast iron or steel casings _____ Pressure or gravity type _____

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 _____ Are there two separate systems, so that one may be in use while the other is being

cleared of snow _____ No. of coils in each battery _____ Material of coils _____ Can each coil be readily shut off or

disconnected _____ Total cooling surface of battery coils _____ Is a watertight tray fitted under each battery _____

Air Circulating Fans, Total No. of _____ each of _____ cubic feet capacity, at _____ revolutions per minute _____

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

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 _____

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

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DESCRIPTION OF INSULATION.

| | IN LOWER HOLD CHAMBERS. | | | | | IN 'TWEEN DECK CHAMBERS. | | | | |
|------------------------------|-------------------------|-----------------------------|----------------------------|---------------------|---------------|--------------------------|----------------------|--------------------------|---------------------|---------------|
| | Air Space. | Outer Lining. | Non-conducting Material. | Thickness of ditto. | Inner Lining. | Air Space. | Outer Lining. | Non-conducting Material. | Thickness of ditto. | Inner Lining. |
| FRAME No. (Fore Peak) | | | | | | | | | | |
| FRAME No. 133 | A | NONE | 3/4 HARD FACED FIBRE BOARD | STILLITE 14 | NONE | NONE | 3/4 H.F. FIBRE BOARD | STILLITE 8 | NONE | |
| FRAME No. 96 | F | " | " | 14 | " | " | " | 8 | " | |
| FRAME No. (Boiler Room) | | | | | | | | | | |
| FRAME No. 66 (Engine Room) | A | NONE | 3/4 H.F. FIBRE BOARD | STILLITE 14 | NONE | NONE | 3/4 H.F. FIBRE BOARD | STILLITE 8 | NONE | |
| FRAME No. 40 | F | " | " | 14" | " | " | " | 8 | " | |
| FRAME No. | | | | | | | | | | |
| FRAME No. | | | | | | | | | | |
| FRAME No. (After Peak) | | | | | | | | | | |
| SIDES | | NONE | 3/4 H.F. FIBRE BOARD | STILLITE 14 | NONE | NONE | 3/4 H.F. FIBRE BOARD | STILLITE 14 1/2" | NONE | |
| OVERHEADING | | A.E. OF NO. 2 UNDER MAIN DK | ONE @ 1/4" ONE @ 1/4" WOOD | 6" SLAB CORK | 14 | " | " | 11" | " | |
| FLOORS OF CHAMBERS | | NONE | | | 6 | " | | | | |
| TRUNK HATCHWAYS | | | | | | NONE | | | | |
| THRUST RECESS, SIDES AND TOP | | | | | | NONE | SIDES WOOD TOP ELM | STILLITE 8 | NONE | |
| TUNNEL SIDES AND TOP | | | | | | " | SIDES WOOD TOP ELM | 8 | " | |
| TUNNEL RECESS, FRONT AND TOP | | | | | | ✓ | | | | |

FRAMES OR REVERSE FRAMES, FACE UNDER INSULATION (12" FRAMES)

BULKHEAD STIFFENERS, TOP UNDER INSULATION BOTTOM UNDER INSULATION. AND FACE UNDER INSULATION.

RIBBAND ON TOP OF DECKS 4 x 3 BOLTED TO 2ND DK. ALSO FLAT BAR WELDED TO DECK.

SIDE STRINGERS, TOP ✓ BOTTOM ✓ AND FACE ✓

WEB FRAMES, SIDES ✓ AND FACE ✓

BRACKETS, TOP ✓ BOTTOM ✓ AND FACE ✓

INSULATED HATCHES, MAIN 6" SLAB CORK. BILGE 6" SLAB CORK MANHOLE 4" SLAB CORK

HATCHWAY COAMINGS, MAIN 6 1/2 P.P. 17" DEEP. BILGE 5 x 8 1/2 P.P.

HOLD PILLARS NONE

MASTS ✓ VENTILATORS ✓

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 ✓ and side lights ✓

Is the insulation of the lower hold floor and tunnel top in way of the hatchways protected NOT YET if so, how TO BE CARRIED OUT ABOARD

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 ✓

Coal Bunker Bulkheads, and Brine Outflow and Return Pipes passing through coal bunkers. Is the insulation, so far as practicable, fireproof YES

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

Cargo Battens, Dimensions and spacing, sides 2 x 2 VERT. 18" APART floors TO BE CARRIED OUT ABOARD tunnel top 3 x 3 BATTENS 18" APART

fixed or portable FIXED Are screens fitted over the brine grids at chamber sides 6 IN N° 4 HOLD 8 IN N° 2 HOLD ✓ hinged or permanently fixed ✓

Thermometer Tubes, No. and position in each chamber 4 " " " TWN DKS 4 " N° 2 TWN DKS.

diameter 2 1/2" INSIDE DIAM. 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

Draining Arrangements. Where the chambers are situated below the load water line, what provision is made for draining the inside of the chambers

4" SCUPPERS TO BILGES FITTED WITH N.R. VALVES Where sluices, scupper pipes, and drain pipes are fitted are means provided for blanking them off

What provision is made for draining the refrigerating machinery room SCUPPERS TO BILGE

brine return room SCUPPERS TO BILGE fan room SCUPPERS TO BILGE water circulating pump room ✓

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

Sounding Pipes, No. and position in each chamber situated below the load water line TWO IN N°2 HOLD
 Diameter 3" 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, TANK TOP ONLY. 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 ONLY FITTED ON TANK TOP.
 Air Trunkways in Chambers, inside dimensions, main N°2 HOLD, SEMI-CIRCULAR 22" RAD^S and branch AS PER PLAN.
 Are they permanently fixed or collapsible, or portable PORTABLE State position in chambers ON TANK TOP UNDER DEK
 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 Are they galvanised externally
 How are they arranged in the chambers
 Thawing Off, what provision is made for removing the snow from the cooling pipes in the chambers

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

For LITHGOWS LIMITED

L. Campbell

Builders.

Plans. Are approved Plans or Specifications forwarded herewith for the Refrigerating Machinery NO. SEE PREVIOUS VESSELS and Insulation PLAN APPROVED 14-3-42
 (If not, state date of approval)
 Is the Refrigerating Machinery and Appliances duplicate of a previous case YES If so, state name of vessel EMPIRE GALAHAD
 If the survey is not complete, state what arrangements have been made for its completion and what remains to be done SURVEY COMPLETE

Note The Gas condenser can in addition to the circulating pump, be circulated by the ballast pump

General Remarks (State quality of workmanship, opinions as to class, &c.)

The refrigerating machinery & appliances have been efficiently installed in the vessel & tried out under full working conditions with satisfactory results.

The materials & workmanship are good.

The installation is eligible, in our opinion, to be closed in the Society's Register book with record + LLOYDS R.M.C 11-42 (IN RED) as recommended in London R.M.C report of 13.

It is submitted that this vessel is eligible for THE RECORD.

+ Lloyd's R.M.C 11-42

DA

2/11/42

PARTICULARS TO BE ENTERED IN REGISTER BOOK.

| REFRIGERATING MACHINES. | | | | | POWER. | | INSULATED CARGO CHAMBERS. | |
|-----------------------------------|--------------|-----------------------|---------|-------|---------------------------------------|------------------------------------|---------------------------|-----------|
| No. and whether Single or Duplex. | Makers. | Date of Construction. | System. | Type. | Cubic feet of air delivered per hour. | Ice melting capacity per 24 hours. | No. | Capacity. |
| | J+E HALL LTD | 1942 | AMMONIA | | | Tons. 72 | 4 | 229,900 |
| | | | | | (1) AIR (2) SLAB CORK | | | |
| | | | | | Fibre board faced | | | |

Fee INSULATION... £ 7:0 0 (Fee applied for, 18th DEC. 1942)
 Travelling Expenses £ : : (Received by me, 19)

Kenneth Lynch & M. Caldwell
 Surveyors to Lloyd's Register.

Committee's Minute

TUE 22 DEC 1942

Assigned

+ Lloyd's R.M.C 12.42

CERTIFICATE WRITTEN



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