

Report on Refrigerating Machinery and Appliances.

Received at London Office. 15611005

Date of writing Report 27th May 1957 When handed in at Local Office 30th May 1957 Port of GREENOCK.

No. in Reg. Book. Survey held at GREENOCK. Date: First Survey 15th October 1956 Last Survey 2nd May 1957

91677 (SUPPLEMENT) (Number of Visits DURING CONSTRUCTION.)

on the Refrigerating Machinery and Appliances of the 'AYRSHIRE' Tons (Gross 9340.49 Net 8301.97)

Vessel built at GREENOCK. By whom built GREENOCK DOCKYARD CO LTD Yard No. 488. When built 1957.

Owners CLAN LINE STEAMERS LTD Port belonging to GLASGOW. Voyage ✓

Refrigerating Machinery made by J. L. E. HALL LTD. Machine Nos. 14893/4/5 When made 1956.

Insulation fitted by MILLAR INSULATION & ENG. LTD When fitted 1957. System of Refrigeration R.12.
ROCK WOOL

Method of cooling Cargo Chambers BRINE & AIR. Insulating Material used E. SLAG COOK.

Number of Cargo Chambers insulated 13. Total refrigerated cargo capacity 378,950 cubic feet

DESCRIPTION OF REFRIGERATING MACHINERY. Where placed TWEEN DECK FLAT AT STARBOARD SIDE OF E. ROOM CASING.

Refrigerating Units, No. of 3 No. of machines 3 Is each machine independent YES

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

Compressors, driven direct or through single 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 8 Diameter of cylinders ✓

Diameter of piston rod ✓ Length of stroke ✓ No. of revolutions per minute MAX^m 1000.

Motive Power supplied from FOUR 300K.W. DIESEL DRIVEN 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 E.V.D.P. No. of THREE Rated CONTINUOUS Kilowatts 85.8 Volts 220

at 1000 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 3 Cast iron or steel casings STEEL Cylindrical or rectangular CYLINDRICAL Are safety valves fitted to casings YES No. of coils in each Material of coils Can each coil be readily shut off or disconnected No

Water Circulating Pumps, No. and size of pumps available 3-200T./HR how worked MOTOR DRIVEN Gas Separators, No. of THREE

Gas Evaporators, No. of 3 Cast iron or steel casings STEEL Pressure or gravity type PRESSURE If pressure type, are safety discs fitted YES No. of coils in each casing Material of coils Can each coil be readily shut off or disconnected No.

Direct Expansion or Brine Cooled Batteries No. of 20 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 6 WITH 6 Material of coils STEEL Can each coil be readily shut off or disconnected YES Total cooling surface of battery coils 48,500 OF 1 1/2" BORE TUBE Is a watertight tray fitted under each battery YES

Air Circulating Fans, Total No. of 18 each of 2-10500 C.F.M. 2360RPM. 2050RPM. cubic feet capacity, at 2025 R.P.M. revolutions per minute
2-14000 C.F.M. 4-22000 C.F.M. 4-27500 C.F.M. 170SRPM; 1420RPM; 1060RPM.

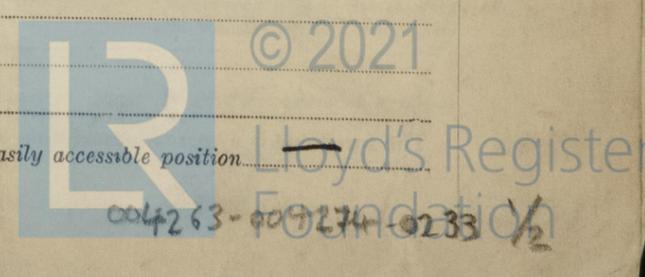
Steam or electrically driven ELECTRIC. Where spare fans are supplied are these fitted in position ready for coupling up No

Brine Circulating Pumps, No. and size of, including the additional pump 5-17,500 GALL/HR EACH how worked MOTOR DRIVEN.

Brine Cooling System, closed or open CLOSED Are the pipes and tanks galvanised on the inside No.

No. of brine sections in each chamber NONE.

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



LOYD'S REGISTER
MAY 1957

Dear Sir,
Reference is made to your letter of the 14th inst. regarding the above vessel.

The Surveyor

2m.6.55. T. (MA)

Are thermometers fitted to the outflow and to each return brine pipe. Where the tanks are closed are they ventilated as per Rule.

Where the tanks are not closed is the compartment in which they are situated efficiently ventilated.

Are the number and capacity of the machines and the number of pumps and sea connections in accordance with ^{THE APPROPRIATE} Section 3, Clause 1 of the Rules. Yes.

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

HYDRAULIC AND OTHER TESTS.

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 ₃ Condenser, Evaporator and Air Cooler Coils after erection in place						
Brine Piping after erection in place	6-3-57	—	80 lbs/1"	—	—	Good.

SEE LONDON REPORT No. R. 8211.

Have important steel castings and forgings been tested in accordance with the Rules.

Cooling Test. Has the refrigerating machinery been examined under full working conditions, and found satisfactory. Yes

Dates of test. BALANCE TEST Density of Brine. by hydrometer

Temperatures (when the cargo chambers are cooled down to the required test temperatures) of delivery and return air at direct expansion or brine cooled batteries & outflow and return brine & atmosphere. cooling water inlet and discharge & gas in condensers and evaporators.

the average temperature of the refrigerated chambers. and the rise of temperature in these chambers upon the expiration of hours time after the machinery and cooling appliances have been shut off.

SPARE GEAR.

Are the working parts of the machines, pumps and motors respectively, interchangeable.

Has the spare gear required by the Rules been supplied. Yes.

Additional Spare Gear Supplied:

SPARE GEAR LISTED ON LONDON REPORT No. R. 8211.

The foregoing is a correct description of the Refrigerating Machinery.

Howard Gibson

GLASGOW
24 MAY 1957
J. & E. HALL LTD. Manufacture

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. 102 (Hatchway)										
Frame No. 103										
Frame No. 104										
Frame No. 105 (Hatchway)										
Frame No. 77 (Engine Room)										
Frame No. 52										
Frame No. 29										
Sides	NONE			15 1/2"	SHELL	NONE			19 1/2" 10 1/2" 13 1/2" 8 1/2" 12"	SHELL
Overheading		3/8" PLYWOOD		1 1/2"	DECK		3/8" PLYWOOD		1 1/2"	DECK
Floors of Chambers (Tank Top)		1" SOLID P.P. 1/2" BALTIC KIDWOOD CORR. 1/2" HARDWOOD	SLAB	8"	TANK TOP		1 1/2" T.P. HARDWOOD SLAB CORR.		2"	DECK
Trunk Hatchways					NONE					
Thrust Recess, Sides and Top		1 1/2" SLAB CORR COVERED WITH 1" NON T.P.C. BALTIC KIDWOOD, HAVING 1/2" T.P.C. HARDWOOD IN WAY OF HATCH OPENINGS 2" T.P.C. HARDWOOD (I.E. SQUARE OF HATCH)								
Tunnel Sides and Top		1 1/2" SLAB CORR COVERED WITH 1" NON T.P.C. BALTIC KIDWOOD, HAVING 1/2" T.P.C. HARDWOOD IN WAY OF HATCH OPENINGS 2" T.P.C. HARDWOOD (I.E. SQUARE OF HATCH)								

Frames or Reverse Frames, Face. CREGSON BLOCK, CLIPS & RAILS FITTED.

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

Ribband on Top of Deck

Side Brackets, Top. Bottom and Face

Web Frames, Sides. and Face

Brackets, Top. FACE CLASS 2-3/4" DOUGLAS FIR PLYWOOD Bottom. FACE MATCHES P.P. FLANGE WITH 3/4" ALUM BOND PLYWOOD and Face CREGSON CLIPS

Insulated Hatches, Main. FACE MATCHES P.P. FLANGE WITH 3/4" ALUM BOND PLYWOOD Bilge. FACE MATCHES P.P. FLANGE WITH 3/4" ALUM BOND PLYWOOD Manhole. BOND PLYWOOD T.L.G. PAINTED WITH 4" x 4" FIBRE GLASS.

Hatchway Coamings, Main. 3/4" SOLID P.P. COAMING WITH 3/4" GALV PROTECTION PLATE. Bilge. P.P. FLANGE.

Hold Pillars. 2" SLAB CORR BEDDED IN BRUEN - LINING 1/2" THK. GALV PLATE SECURED TO WOOD GROUND.

Are insulated plugs fitted to provide easy access to bilge suction roses. Yes. tank, air, and sounding pipes. No. heels of pillars. No.

and manhole doors of tanks. Yes. 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. Yes. if so, how. 2" T.P.C. HARDWOOD FITTED 2"0" BEYOND SQUARE OF HATCH.

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. 1. FRAME SPACE CONSIDERABLY FITTED AT FRAMES 102/103. (FR. 102 BEING UNDER BULKHEAD)

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. None. 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. WOOD 2" x 2" @ 15" C/S. floors. None. tunnel top. WOOD 3" x 3" @ 15" C/S.

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

Thermometer. 4. IN EACH HOLD & No. 2. TWEEN DECK. 3. " " TWEEN DECK CHAMBER. 3. " " HATCH TRUNK CHAMBER. FITTED ADJUSTED TO PRESS. diameter. are they fitted in accordance with Section 3, Clause 8. AS APPLICABLE.

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

Draining Arrangements. What provision is made for draining the inside of the chambers. CLIPS FITTED AT ENDS. (SCUPPERS FROM No. 3 U.T.D. CONTINUED FROM UPPER 01)

Where sluices, scupper pipes, and drain pipes are fitted are means provided for blanking them off. None.

What provision is made for draining the refrigerating machinery room. 3-2 1/2" WATER SEALED SCUPPERS LED TO C.R. WITH S.C. CORR.

brine return room. 1-2 1/4" WATER SEALED SC. fan room 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 *To HOLD SILGES ONLY - 2, AT AFTER END EACH HOLD*
 Diameter *2 1/2* 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 *—* Are cement facings reinforced with expanded steel lattice *NONE.*
 How is the expanded metal secured in place *NONE.*
 How are the cork slabs secured to the steel structure of the vessel *TANK TOP COVERED WITH BRUNNEN & SLAB CORK LAID ON TOP.*
 Air Trunkways in Chambers. Are the arrangements satisfactory and in accordance with the approved plans *YES - AS APPROVED.*
 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 plugs supplied for the doorways *—* Where are the doors worked from *—*
 Cooling Pipes in Chambers, diameter *NONE.* Minimum thickness *—* 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 *STEAM BRINE HEATER INSTALLED.*
 The foregoing is a correct description of the Insulation and Appliances.

Geo. Lang
 BUILDERS
 103, NORTH BRIDGE
 GLASGOW, W.A.

Plans. Are approved Plans or Specifications forwarded herewith for the Refrigerating Machinery *YES.* and Insulation *YES.*
 (If not, state date of approval)
 Is the Refrigerating Machinery and Appliances duplicate of a previous case *YES.* If so, state name of vessel *'ARGYLLSHIRE' 4480 NO. 486*
 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, Appliances and Insulation of this ship has been constructed and installed under special survey in accordance with the Rules and approved plans.*
The materials and workmanship are good.
The installation has been tried under working conditions and a satisfactory balance test was carried out.
The spare gear has been checked on board.

The Refrigerating Machinery and appliances of this ship are eligible in our opinion to have the notation of R.M.C. 5-57, to maintain temperature 15°F. with sea temperature 90°F. maximum.

Copy of Intern. Certificate and Approved Plans herewith.

PARTICULARS TO BE ENTERED IN REGISTER BOOK.

REFRIGERATING MACHINES.					System of (1) Refrigerating (2) Insulating the Chambers.	Ice melting capacity per 24 hours. Tons.	Is Refrigerating Machinery Electrically Driven?	INSULATED CARGO CHAMBERS.	
No. of Units.	No. of Compressors.	System.	Makers.	Date of Construction.				No.	Capacity. Cubic ft.
<i>3.</i>	<i>24.</i>	<i>DICHLORODIFL. - VOROMETHANE.</i>	<i>J. & E. HALL.</i>	<i>1957.</i>	<i>① BONE L-AIR. ② FIBRE GLASS 2-SLAB CORK.</i>	<i>129.</i>	<i>YES.</i>	<i>13.</i>	<i>378,956</i>

CONSTRUCTION. £ 60 : 11 : 0
Fee INSULATION..... £ 113 : 5 : 0
Machinery Installation £ 67 : 17 : 0
Travelling Expenses £ : :
 Fee applied for, *10th MAY 1957*
 Received by me, *19*

G. Munson, & Alexander F. Moore & William J. ...
 Surveyors to Lloyd's Register.

Committee's Minute

GLASGOW 4 JUN 1957

Assigned *+ Lloyd's R.M.C. 5-57 to maintain temp. 15°F with sea temp. 90°F max.*
write CRW



© 2021 Lloyd's Register Foundation

gum 31/5/57

Certificate sent to *Summers*