

Rpt. 17.

No. 47767.

Report on Refrigerating Machinery and Appliances.

Received at London Office.

17 OCT 1951

Date of writing Report 12th Oct 1951 When handed in at Local Office 15.10.1951 Port of GLASGOWNo. in Reg. Book. SUPPLEMENT 35216 Survey held at GLASGOW. Date: First Survey 11th June 1951 Last Survey 9th Oct 1951 (Number of Visits 10.)

on the Refrigerating Machinery and Appliances of the SINGLE SCREW MOTOR VESSEL "CIUDAD DE BARQUISIMETO" Tons Gross 4220 Net 2350

Vessel built at GOVAN, GLASGOW. By whom built FAIRFIELD S.B. & E. CO. LD. Yard No. 753 When built 1951

Owners FLOTA MERCANTE GRANCOLOMBIANA. Port belonging to LA GUAIRA. Voyage

Refrigerating Machinery made by J. & E. HALL LD. Machine Nos. 14601/2/3 When made 1951

Insulation fitted by CORK INSULATION & ASBESTOS CO. LD. When fitted DURING CONSTRUCTION System of Refrigeration FREON 12

Method of cooling Cargo Chambers BRINE & AIR. Insulating Material used FIBRE GLASS WITH GALV^d SHEET STEEL FACING.

Number of Cargo Chambers insulated 3 Total refrigerated cargo capacity 56,020 cubic feet

DESCRIPTION OF REFRIGERATING MACHINERY. Where placed ON LOWER DECK AMIDSHIPS.

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

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} reduction gearing. Compressors, single or double acting. If multiple effect compression

Are relief valves or safety discs fitted No. of cylinders to each unit Diameter of cylinders

Diameter of piston rod Length of stroke No. of revolutions per minute

Motive Power supplied from 3 electric 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 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 constant speed No. of 3 Rated 28 B.H.P. Kilowatts 220 Volts

at 1450 revolutions per minute Diameter of motor shafts at bearings 2 1/8

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 Cast iron or steel casings Cylindrical or rectangular Are safety valves fitted

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

Water Circulating Pumps, No. and size of pumps available 2 how worked electric Gas Separators, No. of

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 6 coils 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 Material of coils 30 Steel Can each coil be readily shut off or

disconnected Total cooling surface of battery coils 9400 Is a watertight tray fitted under each battery

Air Circulating Fans, Total No. of 4 each of 12000 cubic feet capacity, at 1765 revolutions per minute

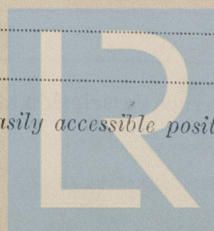
Steam or electrically driven electric Where spare fans are supplied are these fitted in position ready for coupling up

Brine Circulating Pumps, No. and size of, including the additional pump 3 how worked electric

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

No. of brine sections in each chamber 4

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



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010805-010815-D151 1/2

NOTE—THE WORDS WHICH DO NOT APPLY SHOULD BE DELETED

(MADE AND PRINTED IN ENGLAND)

13.10.51

"CIUDAD DE BARQUISIMETO"

"CIUDAD DE BARQUISIMETO"

DESCRIPTION OF INSULATION.

Are thermometers fitted to the outflow and to each return brine pipe... Yes Where the tanks are closed are they ventilated as per Rule... Yes
Where the tanks are not closed is the compartment in which they are situated efficiently ventilated... Yes
Are the number and capacity of the machines and the number of pumps and sea connections in accordance with Section 2, Clause 1 of the Rules... Yes

Is the exhaust steam led to the main and auxiliary condensers... Yes
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.	26/9/51					

Have important steel castings and forgings been tested in accordance with the Rules... Yes
Cooling Test. Has the refrigerating machinery been examined under full working conditions, and found satisfactory... Yes
Dates of test... 9.10.51 Density of Brine... 48 by... 2w
Temperatures (when the cargo chambers are cooled down to the required test temperatures) of delivery and return air at direct expansion or brine cooling... outflow and return brine... 6 & -1 1/2
gas in condensers... 74 and evaporators... -33
batteries... 60 & 62
atmosphere... 54° cooling water inlet and discharge... 2°7 and the rise of temperature in these chambers upon the expiration of... 11
the average temperature of the refrigerated chambers... 10°7
time after the machinery and cooling appliances have been shut off... 10/4 .91

SPARE GEAR.

Are the working parts of the machines, pumps and motors respectively, interchangeable... Yes
Has the spare gear required by the Rules been supplied... Yes
Additional Spare Gear Supplied: Lee London #4 4946

The foregoing is a correct description of the Refrigerating Machinery.

IN LOWER HOLD CHAMBERS.

IN 'TWEEN DECK CHAMBERS.

	Area Space.	Outer Lining.	Non-conducting Material.	Thickness of ditto.	Inner Lining.	Area Space.	Outer Lining.	Non-conducting Material.	Thickness of ditto.	Inner Lining.
Frame No. (Fore Peak)	A	-	-	-	-	-	-	-	-	-
Frame No.	F	N ^{os} 1 AND 2	-	-	-	N ^{os} 1 AND 2	-	-	-	-
	A	LOWER HOLDS	-	-	-	UPPER AND LOWER TWEEN DECKS	-	-	-	-
Frame No.	F	NOT	-	-	-	NOT	-	-	-	-
	A	INSULATED.	-	-	-	INSULATED.	-	-	-	-
Frame No. 100	F	-	-	-	-	-	-	-	-	-
N ^o 3 HOLD.	A	-	FIBRE GLASS	11"	16 SWG GALVD SHEET STEEL	FR 100	UPPER TW. DK.	FIBRE GLASS	8"	16 SWG. GALVD SHEET STEEL.
Frame No. 80 (Battery Room) ENGINE	F	-	FIBRE GLASS	10"	16 SWG GALVD SHEET STEEL	FRS 79-80	UPPER TW. DK.	FIBRE GLASS	8"	16 SWG GALVD SHEET STEEL.
	A	-	-	-	-	FRS 79-80	LWR TW. DK.	-	9"	16 SWG GALVD SHEET STEEL.
Frame No. (Engine Room)	A	-	-	-	-	-	-	-	-	-
Frame No.	F	-	-	-	-	-	-	-	-	-
Frame No.	A	N ^{os} 4 AND 5	-	-	-	N ^{os} 4 AND 5	-	-	-	-
Frame No.	F	LOWER HOLDS	-	-	-	UPPER AND LOWER TWEEN DECKS	-	-	-	-
	A	NOT	-	-	-	NOT	-	-	-	-
Frame No.	F	INSULATED.	-	-	-	INSULATED.	-	-	-	-
	A	-	-	-	-	-	-	-	-	-
Frame No.	F	-	-	-	-	-	-	-	-	-
des ...	A	-	FIBRE GLASS	11"	16 SWG GALVD SHEET STEEL	UPPER 2 LWR TW. DKs.	FIBRE GLASS	10"	16 SWG GALVD SHEET STEEL.	
erheading ...	A	-	FIBRE GLASS	11"	16 SWG GALVD SHEET STEEL	UPPER TW. DK.	FIBRE GLASS	10"	16 SWG GALVD SHEET STEEL.	
ors of Chambers	F	1 COAT "TITOL" 1 COAT "BITOTES" SOLUTION. 1 COAT "BITOTES" ENAMEL 3/16" THICK	FIBRE GLASS	8"	1" F.S.D. BOARD 1/2" " "	UPPER 2 LWR TW. DKs.	BARE STEEL	-	-	
nk Hatchways						NO TRUNK HATCHWAYS.				
ust Recess, Sides and Top						N ^{os} 4 AND 5				
nel Sides and Top						LOWER HOLDS				
3 el Recess, Front and Top						NOT INSULATED.				

"CIUDAD DE BARQUISIMETO"

Sounding Pipes, No. and position in each chamber situated below the load water line. *AS APPROVED*

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. *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.** *YES.*

Are they permanently fixed or collapsible, or portable. *PERMANENT.*

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. *2"* **Minimum thickness.** *7 SWG.* **Are they galvanised externally.** *YES.*

How are they arranged in the chambers. *IN GRIDS IN SECTIONS AS AIR COOLERS.*

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 The FAIRFIELD SHIPBUILDING AND
ENGINEERING COMPANY LIMITED.

[Signature]
Secretary. Builders.

Plans. **Are approved Plans or Specifications forwarded herewith for the Refrigerating Machinery.** *YES.* **and Insulation.** *YES.*

Is the Refrigerating Machinery and Appliances duplicate of a previous case. *YES.* **If so, state name of vessel.** *"CIUDAD DE MEDELLIN"*

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 OF THIS VESSEL HAVE BEEN CONSTRUCTED UNDER SPECIAL SURVEY
IN CONFORMITY WITH THE SOCIETY'S RULES & REGULATIONS & THE SECRETARY'S LETTERS.
THE SCANTLINGS & ARRANGEMENTS ARE IN ACCORDANCE WITH THOSE SHOWN ON THE APPROVED PLANS.
THE MATERIALS & WORKMANSHIP ARE SATISFACTORY.

The Refrigerating machinery and appliances are eligible, in our opinion,
for the notation of + LLOYD'S R.M.C. 10.51 to maintain temp 14°F with sea
temp 90°F max.

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.
3	6	Herz	J & Hall	1951	(1) BRINE & AIR. (2) FIBRE GLASS	34.5	YES	3	56,020

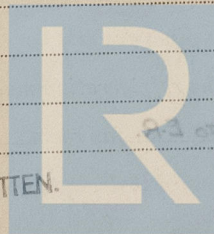
1/3 London £ 11-13-4
Fee *£23-6-8* £ 35:0:0 Fee applied for, 19.
Travelling Expenses £ : : Received by me, 19.

Wharmillan and B.H. Macdonald
Surveyors to Lloyd's Register.

Committee's Minute.

Assigned *+ Lloyd's R.M.C. 10.51.*
to maintain temp. 14°F. with
sea temp. 90°F. maximum.

CERTIFICATE WRITTEN.



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