

REPORT ON REFRIGERATING MACHINERY AND APPLIANCES.

(Received at London Office)

Date of writing Report 19. 4. 44 When handed in at Local Office 19. 4. 44 Port of London
 No. in Reg. Book. Survey held at London Date: First Survey 19th June 1942 Last Survey 21st Sept 1943
 Newcastle-on-Tyne " " (1943) Oct. 12th " 7/4/44 " " 28 (No. of Visits 20)
 on the Refrigerating Machinery and Appliances of the M.V. "CONDESA" Tons { Gross 10367
 Net 6243
 Vessel built at Newcastle-on-Tyne By whom built Hawthorn Leslie & Co. Ltd. Yard No. 655 When built 1944
 Owners Furness-Houlder Argentine Lines Ltd. Port belonging to Voyage
 Refrigerating Machinery made by J. & E. Hall Ltd. Machine Nos. 11237 11238 11239 When made 1943
 Insulation fitted by Messy Insulation Co. Ltd. When fitted While building System of Refrigeration CO₂ & Brine
 Method of cooling Cargo Chambers Air cooled Insulating Material used Cork
 Number of Cargo Chambers insulated 22 (See letter) Total refrigerated cargo capacity 473.170 (See letter) cubic feet.

DESCRIPTION OF REFRIGERATING MACHINERY. Where placed Upper Deck P & S amidships

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 195 Are all the units connected to all the refrigerated chambers Yes.
 Compressors, driven direct or through ~~double~~ 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 2 Diameter of cylinders 5 3/8"
 Diameter of piston rod 2 1/4" Length of stroke 10" No. of revolutions per minute 300 max.

Motive Power supplied from

(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 2 Diameter 6 1/2" & 7" pins
 Length of stroke 9" & 4 1/2" Working pressure 100 lb. Diameter of crank shaft journals and pins 6 1/2" & 7" pins
 Breadth and thickness of crank webs 9" & 4 1/2" No. of sections in crank shaft one Revolutions of engines per minute 300/200

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

Can the internal surfaces of the receivers be examined What means are provided for cleansing their inner surfaces

Is there a drain arrangement fitted at the lowest part of each receiver If made under survey

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 open with canopy No. of 3 Rated 185 BHP Kilowatts

Volts & 220 at 300/200 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 Copper Cylindrical or rectangular Cylindrical Are safety valves fitted

on water headers No. of coils in each one per casing Material of coils S.D. Copper Can each coil be readily shut off or disconnected Yes

Water Circulating Pumps, No. and size of pumps available 2-8" vert. centrif. how worked elec. direct Gas Separators, No. of 6

Gas Evaporators, No. of 3 Cast iron or steel casings steel Pressure or gravity type pressure If pressure type, are safety

valves fitted vent pipes No. of coils in each casing one per casing Material of coils S.D. Copper Can each coil be readily shut off or disconnected Yes

Direct Expansion or Brine Cooled Batteries, No. of 42 Are there two separate systems, so that one may be in use while the other is being

cleared of snow no No. of coils in each battery 42 Material of coils S.D. Steel Can each coil be readily shut off or

disconnected Yes Total cooling surface of battery coils 35,500 Sq. ft. Is a watertight tray fitted under each battery Yes

Air Circulating Fans, Total No. of 42 each of 42 attached cubic feet capacity, at revolutions per minute

Steam or electrically driven electrically 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 3-6" vert. centri. how worked Elec. direct coupled

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

No. of brine sections in each chamber 6

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.

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Common
Are thermometers fitted to the out'go and to each return brine pipe *Yes* 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 Section 2, 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	21.9.43	1000 lb/12"	3000 lb/12"	1500 lb/12"	84	
SEPARATORS	6.4.43	do	do	do	84	
MULTIPLE EFFECT RECEIVERS	21.5.43	do	do	do	84	
CONDENSER COILS	6.7.43	do	do	do	84	
EVAPORATOR COILS	11.5.43	do	do	do	84	
CONDENSER HEADERS AND CONNECTIONS	14.5.43	do	do	do	84	
CONDENSER CASINGS	30.7.43	10 to 15 lb/12"	30 lb/12"	✓	84	
EVAPORATOR CASINGS	18.5.43	10 to 15 lb/12"	30 lb/12"	✓	84	
NH ₃ CONDENSER, EVAPORATOR AND AIR COOLER COILS AFTER ERECTION IN PLACE	4-1-44	30 lb.		90 lb.		
BRINE PIPING AFTER ERECTION IN PLACE	10-3-44					

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 6th to 7th April - 44 Density of Brine 45° by TWADDELL 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

NO DELIVERY AIR THERM^{ts} RETURN AIR 8°F outflow and return brine -6°F & -45°F

atmosphere 55°F cooling water inlet and discharge 45°F & 49°F gas in condensers 77°F and evaporators -15°F

the average temperature of the refrigerated chambers 7.7°F and the rise of temperature in these chambers upon the expiration of 12 hours

time after the machinery and cooling appliances have been shut off 8.6°F

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:-

6 lubr. piston leathers 1 set leather moulds 18 addl. comp. valve springs 2 springs for water relief valve
6 " gland " 2 regulator valve spindles 2 springs for CO₂ safety valve
2 lbs main bearing shells lined W.M. with bolts & nuts 2 lbs head frames with bolts & nuts
1 pr. crankpin " " " " 1 pump for press. lubr. 3 CO₂ gauge valves
9 spare pipes for CO₂ gauge valves 1 hydrometer, 18 safety valve discs 6 thermos. 1 special New tested thermos.
1 spindle & impeller & set of bushes for water pump 1 fitted box for comp. parts.
1 " " " " large brine pump. 2 pr CO₂ pipe flanges
1 " " " " small " 1 line gauge 6 bolts for machy. coupling
1 separator drain fitting 1 length of copper pipe 1 built hydraulic battery

Armature in felt lined case	motors - mach.	SPARES CW pump.	large brine pump	small brine pump	complete motor	FAN MOTORS JHP 2 1/2 HP 1 1/2 HP 1 1/2 HP 1 1/2 HP
set of field coils	1	1	1	1	Armature	- - - - 1
" " interpole coils	1	1	1	1	set field coils	- - - - 1
line of brush holders	1	1	1	1	" interpole "	- - - - 1
sets of brushes	3	2	5	3	line brush holders	1 1 1 2 1
set of bearings	1	1	1	1	set brushes	10 6 8 20 11
set of controller spares	1	1	1	1	" bearings	- - - - 1
					1 spare motor for each size & output of fan	

The foregoing is a correct description of the Refrigerating Machinery.

Manufacturer.

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. 183 (Fore Peak)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
FRAME No. 187	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
FRAME No. 137	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
FRAME No. 111	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
FRAME No. 88 (Engine Room)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
FRAME No. 13/10 (Engine Room)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
FRAME No. 33	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
FRAME No.										
FRAME No.										
FRAME No. 8-9 (After Peak)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SIDES	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OVERHEADING	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
FLOORS OF CHAMBERS										
TRUNK HATCHWAYS										
THRUST RECESS, SIDES AND TOP										
TUNNEL SIDES AND TOP										
TUNNEL RECESS, FRONT AND TOP										

FRAMES OR REVERSE FRAMES, FACE 2" SLAB CORK.

BULKHEAD STIFFENERS, TOP GRAN. CORK. BOTTOM GRAN. CORK. AND FACE GRAN. CORK 1/2" MINIMUM.

RIBBAND ON TOP OF DECKS NONE.

SIDE STRINGERS, TOP NONE.

WEB FRAMES, SIDES NONE.

BRACKETS, TOP NONE.

INSULATED HATCHES, MAIN 10" PLUG HATCHES. BILGE 12" GAL. IRON TOP & BOTTOM. MANHOLE 14" GAL. IRON TOP & BOTTOM.

HATCHWAY COAMINGS, MAIN 11" O.P.

HOLD PILLARS 2" SISAL ROPE.

MASTS 4" CORK. 3/8" GAL. PLATING.

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

and manhole doors of tanks *Yes*. Are insulated plugs fitted to ventilators *No*. cargo ports *Yes*. and side lights *No*

Is the insulation of the lower hold floor and tunnel top in way of the hatchways protected *Yes*. if so, how 1 1/2" EXM.

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 *✓* Steel cofferdam fitted

and for draining the tank top *✓* Scuppers to drain hat. N°5 centre pocket only.

Fireproof Insulation. Is the insulation and woodwork fireproof in way of bunkers or any surfaces exposed to excessive heat *No* wood.

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 *✓* floors *✓* 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 39 in N°2, 40 in N°3, 41 in N°4, 30 in N°5, 17 in N°6 TOTAL=167

diameter 2 1/2" GAL. W.I. 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* at end

Draining Arrangements. What provision is made for draining the inside of the chambers 4 1/2" G.I. pipe to bilge with "U" bend & slack trap

Where sluices, scupper pipes, and drain pipes are fitted are means provided for blanking them off *Yes*

What provision is made for draining the refrigerating machinery room (Flat in E.R.) Scuppers to bilge

brine return room Scuppers to bilge 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 *None. Usual D. Band bilge sounding pipes incorporated with shell & hhd insulation*
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 *None*
How is the expanded metal secured in place *None*
How are the cork slabs secured to the steel structure of the vessel *3/8" steel bolt & 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 *Permanent*
Where air trunkways pass through watertight bulkheads, are they fitted with watertight doors *Yes* Are the door frames efficiently insulated *Yes*
Are insulated plugs supplied for the doorways *Yes* Where are the doors fitted from *Both sides*
Cooling Pipes in Chambers, diameter *1 1/2" fabr.* Minimum thickness *1/4"* Are they galvanised externally *Yes*
How are they arranged in the chambers *Batteries in air-cooled chambers & grids in Brine cooled chambers*
Thawing Off, what provision is made for removing the snow from the cooling pipes in the chambers *Steam heaters*

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

J. Lowry.

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 *"RIPPINGHAM GRANGE"*
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.) *The refrigerating machinery was constructed under Special Survey, & the materials & workmanship are good & it will be eligible for the notation + Lloyds RMC (with date) when the installation & testing have been satisfactorily completed.*

The refrigerating machinery has been satisfactorily installed on board the vessel & tested under working conditions & is eligible in our opinion for the notation + Lloyds R.M.C. 4.44.

J. J. Martin A. Blunter

It is submitted that this vessel is eligible for THE RECORD. + LMC 4.44.

*J. J. Martin
1/5/44.*

PARTICULARS TO BE ENTERED IN REGISTER BOOK.

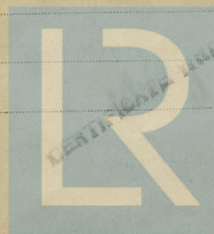
REFRIGERATING MACHINES.					System of (1) Refrigerating (2) Insulating the Chambers.	Ice melting capacity per 24 hours.	Is Refrigerating Machinery Electrically Driven?	INSULATED CARGO CHAMBERS.	
No. of Units.	No. of Compressors.	System.	Makers.	Date of Construction.				No.	Capacity. Cubic ft.
3	6	CARB. AMHY.	J. & E. HALL. LD.	1943	(1) AIR & BRINE. (2) SHEET STEEL FACED. CORK-SILICA COTTON.	195	YES	22	473,770

Long £14.0.0
Fee applied for, 24 APR 1944
Received by me, 19
Travelling Expenses £ 1.5.6
Committee's Minute
Assigned
J. J. Martin & A. Blunter
Surveyors to Lloyd's Register.

THURS 4 MAY 1944

+ Lloyd's R.M.C.

4.44



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