

B2. 14943

Rpt. 17.

Rmc No. 2620

Report on Refrigerating Machinery and Appliances.

Received at London Office **22 MAR 1950**

Date of writing Report 29-10-1949 When handed in at Local Office 29 Oct 1949 Port of London

No. in Reg. Book. Survey held at London Date: First Survey 1st June Last Survey 28 October 1949
(Number of Visits 22)

on the Refrigerating Machinery and Appliances of the RUNIC Tons {Gross
Net
Vessel built at Belfast By whom built Harland & Wolff Yard No. 1414 When built 1949
Owners _____ Port belonging to _____ Voyage _____
Refrigerating Machinery made by J & E Hall & Co Ltd Machine Nos. 13940/1/2 When made 1949
Insulation fitted by _____ When fitted _____ System of Refrigeration CO₂
Method of cooling Cargo Chambers _____ Insulating Material used _____
Number of Cargo Chambers insulated _____ Total refrigerated cargo capacity 527500 cubic feet

DESCRIPTION OF REFRIGERATING MACHINERY. Where placed

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 186 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 2 ✓ Diameter of cylinders 4 3/4" ✓
Diameter of piston rod 2 1/4" Length of stroke 10" ✓ No. of revolutions per minute 300-200 ✓
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 _____ Diameter _____
Length of stroke _____ Working pressure _____ Diameter of crank shaft journals and pins 6 1/2" jnl, 7" pins ✓
Breadth and thickness of crank webs 9" x 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:—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 _____ No. of _____ Rated _____ Kilowatts _____ Volts _____
at _____ 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 cast iron ✓ Cylindrical or rectangular cylindrical ✓ Are safety valves fitted to casings yes ✓
No. of coils in each 14 Material of coils copper Can each coil be readily shut off or disconnected yes ✓

Water Circulating Pumps, No. and size of pumps available _____ how worked _____ 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 yes ✓
Yent pipe fitted No. of coils in each casing 14 Material of coils steel Can each coil be readily shut off or disconnected yes ✓

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.

1 in. 11. 42. (MADE AND PRINTED IN ENGLAND.)



003407-00341670349 1/2

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 Section 2, Clause 1 of the Rules.
 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)		165 sq in	165 sq in	165 sq in		
Gas Compressors	28-10-49	1000	3000 ✓	1500 ✓	EMS	
„ Separators	26-10-49	1000	3000 ✓	1500 ✓	EMS	
„ Multiple Effect Receivers	12.8.49-15.8.49	not fitted				
„ Condenser Coils	24.8.49-26.8.49-31.8.49	1000	3000 ✓	1500 ✓	EMS	
„ Evaporator Coils	10.8.49	1000	3000 ✓	1500 ✓	EMS	
„ Condenser Headers and Connections	11.13-7.49	1000	3000 ✓	1500 ✓	EMS	
„ Condenser Casings	26.9.49	15	30 ✓	—	EMS	
„ Evaporator Casings	19.9.49	15	50 ✓	—	EMS	
NH ₃ Condenser, Evaporator and Air Cooler Coils after erection in place						
Brine Piping after erection in place						

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.
 Dates of 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 *Yes ✓*
 Has the spare gear required by the Rules been supplied *Yes ✓*

Additional Spare Gear Supplied: 3 sets Comp' rings, 12 sets rings for glands, 36 lub^t piston leathers, 36 lub gland leathers, 1 set of 2 leather moulds, 6 pistons & rods for Comp^s, 2 sets Cu joints for Comp^s, 1 set Cu joints for other joints, 2 regul valve spindles, 2 springs each for water relief, brine relief & CO₂ safety valves, 1 main bearing complete, 1 crankpin bearing complete, 1 x head bearing complete, 1 pump for press. lub^t, 3 CO₂ gauges, 1 hydrometer, 12 thermos for brine headers, 1 special drain plug with pip, 36 s v discs, 3 1/2 CO₂ valves 9 pipes for do

	For 160 BHP Comp motor	all other size pumps
Armature in cover	1	1
Set of field coils	1	1
Set of interpole do	1	1
Set of bearing replacements	1	1

For fans 1 Rotor for each size fan

The foregoing is a correct description of the Refrigerating Machinery.

J & E. HALL, LTD
F. Wells
 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. (Fore Peak) A										
Frame No. F										
Frame No. A										
Frame No. F										
Frame No. A										
Frame No. F (Boiler Room) A										
Frame No. A (Engine Room)										
Frame No. F										
Frame No. A										
Frame No. F										
Frame No. A										
Frame No. F (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										
Bulkhead Stiffeners, Top		Bottom								and Face
Ribband on Top of Decks										
Side Stringers, Top		Bottom								and Face
Web Frames, Sides										and Face
Brackets, Top		Bottom								and Face
Insulated Hatches, Main		Bilge								Manhole
Hatchway Coamings, Main		Bilge								
Hold Pillars										
Masts		Ventilators								
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 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.										
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.										
Draining Arrangements. What provision is made for draining the inside of the chambers.										
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.										
brine return room. 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
 Diameter..... Are all sounding pipes in way of insulated chambers fitted in accordance with Section 3, Clause 11
 Are all wood linings tongued and grooved..... 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.....
 Are they permanently fixed or collapsible, or portable.....
 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. 1 1/4" Minimum thickness..... 2 1/2" 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.
 Builders.

Plans. Are approved Plans or Specifications forwarded herewith for the Refrigerating Machinery..... and Insulation.....
 (If not, state date of approval)
 Is the Refrigerating Machinery and Appliances duplicate of a previous case..... Yes If so, state name of vessel *Cammell Jaud 1202*
 If the survey is not complete, state what arrangements have been made for its completion and what remains to be done.....

General Remarks (State quality of workmanship, opinions as to class, &c.)
 The Refrigerating machinery and appliances of this vessel have been constructed under special survey in conformity with the Society's Rules, Regulations and the Secretary's letters. The scantlings and arrangements are in accordance with, or equivalent to, those shown on the approved plans. The materials and workmanships are good.
 In my opinion the Refrigerating machinery and appliances of this vessel will be eligible for the notation *LLOYDS RMC (with date) when the installation and testing have been satisfactorily carried out and the spare gear verified

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.				Tons.	No.
3	6	Carb Anhy	J & E Hall	1949		186	Yes		

Lon^{MC} £58.6.8 }
 Bel^{MC} £116.13.4 }
 Fee £175.0.0 } Fee applied for, 19. *Am. Sillix*
 Travelling Expenses £ : : } Received by me, 19. Surveyor to Lloyd's Register.

Committee's Minute.....

Assigned..... *all minute on
Bel. Rpt 14943*



© 2021

Lloyd's Register
Foundation