

Report on Refrigerating Machinery and Appliances.

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 (Number of Visits 16)

on the Refrigerating Machinery and Appliances of the _____ Tons { Gross _____
 Net _____
 Vessel built at BARROW By whom built VICKERS ARMSTRONGS Yard No. 948 When built 1946
 Owners _____ Port belonging to _____ Voyage _____
 Refrigerating Machinery made by J.E. HALL LTD. DARTFORD Machine Nos. 12875
12876 When made 1946
 Insulation fitted by _____ When fitted _____ System of Refrigeration CHRS. HNH
 Method of cooling Cargo Chambers BRINE & AIR Insulating Material used _____
 Number of Cargo Chambers insulated 3 Total refrigerated cargo capacity 12,800 cubic feet

DESCRIPTION OF REFRIGERATING MACHINERY. Where placed ON TANK TOP AFT OF MAIN E.R.

Refrigerating Units, No. of 2 No. of machines 2 Is each machine independent YES

Total refrigeration or ice-melting capacity in tons per 24 hours 34.56 WITHOUT I.L.C. 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 YES

Are relief valves or safety discs fitted YES No. of cylinders to each unit 2 Diameter of cylinders 2 1/2"

Diameter of piston rod 1 1/8" Length of stroke 6" No. of revolutions per minute 500

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 3" JOURNALS - 3 1/2" PINS~~

~~Breadth and thickness of crank webs 1 3/4" No. of sections in crank shaft ONE Revolutions of engines per minute 500 MAX~~

~~Oil Engines, type 2 or 4 stroke cycle Single or double acting S. 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 ENCLOSED VENTILATED No. of 2 Rated 52 H.P. Kilowatts 220 Volts

at 500 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 2 EACH WITH 3 CASINGS COPPER Cylindrical or rectangular CYLINDRICAL Are safety valves fitted

FITTED TO WATER YES Cast iron or steel casings ALUMINIUM Material of coils BRASS Can each coil be readily shut off or disconnected YES

to casings 1 PER CASING No. of coils in each 1 Material of coils BRASS Can each coil be readily shut off or disconnected YES

Water Circulating Pumps, No. and size of pumps available 1-3" VERT. CENT. how worked ELECTRICALLY Gas Separators, No. of 4

Gas Evaporators, No. of 2 Cast iron or steel casings STEEL Pressure or gravity type PRESSURE If pressure type, are safety

valves fitted FITTED No. of coils in each casing 6 Material of coils STEEL Can each coil be readily shut off or disconnected YES

Direct Expansion or Brine Cooled Batteries, No. of 3 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 2 Material of coils STEEL Can each coil be readily shut off or

disconnected YES Total cooling surface of battery coils 1300 SQ FT. Is a watertight tray fitted under each battery YES

Air Circulating Fans, Total No. of 3 { 2- 20" 4000 2220 MAX
1- 15" 2500 2500 cubic feet capacity, at 2500 " revolutions per minute

Steam or electrically driven ELECTRICALLY Where spare fans are supplied are these fitted in position ready for coupling up NO

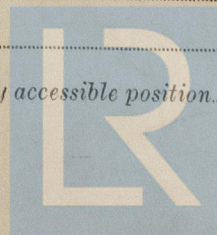
Brine Circulating Pumps, No. and size of, including the additional pump 3- 2" HORIZON CENTRAL how worked ELECTRICALLY

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

No. of brine sections in each chamber 2 IN EACH

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 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. lbs/sq. in.	Hydraulic Test Pressure. lbs/sq. in.	Air Test Pressure. lbs/sq. in.	Stamped.	REMARKS.
Engine Cylinders (if tested) ...		—	—	—	RD	
Gas Compressors ...	3.1.47	1000	3000	1500	RD	
„ Separators ...	21.3.47	1000	3000	1500	RD	
„ Multiple Effect Receivers ...	27.11.46	1000	3000	1500	RD	
„ Condenser Coils ...	9.4.47	1000	3000	1500	RD	
„ Evaporator Coils ...	11.4.47	1000	3000	1500	RD	
„ Condenser Headers and Connections	STOCK TESTED	1000	3000	1500	RD	
„ Condenser Casings ...	20.11.46	1000	3000	1500	RD	
„ Evaporator Coils ...	6.12.46	1000	3000	1500	RD	
„ Condenser Headers and Connections	27.11.46	1000	3000	1500	RD	
„ Condenser Casings ...	6.12.46	10-15	30	—	RD	
„ Evaporator Casings ...	11.12.46	15-20	40	—	RD	
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. YES
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:
6 LUBRICATOR PISTON LEATHERS : 2 COMPRESSOR LINERS : 2 SPRINGS FOR WATER RELIEF VALVE
6 „ GLAND „ : 1 LIQUID STOP VALVE SPINDLE : 2 „ „ BRINE „ „
1 SET OF 2 LEATHER MOULDS : 1 SUCTION „ „ : 2 „ „ CO₂ SAFETY VALVE
1 MAIN BEARING WITH BOLTS & NUTS : 1 DEL. STOP VALVE SPINDLE : 1 LUBRICATOR HAND PUMP
1 BEARING FOR CONN. ROD BIG END WITH BOLTS & NUTS : 1 CO₂ GAUGE : 1 HYDROMETER
1 „ „ CROSSHEAD WITH BOLTS & NUTS : 2 BRASS CASED THERMOMETERS.
12 SAFETY DISCS : 1- $\frac{1}{8}$ CO₂ VALVE & 3 PPS FOR SAME : 1 PR CO₂ PIPE FLANGES, EACH SIZE
1 HALF COUPLING : 1 N.P.L. THERMOMETER : 1 SPRING BALANCE FOR WEIGHING CO₂ FLASKS :
1 IMPELLER, SPINDLE & BEARING FOR BRINE & WATER PUMPS.

ELECTRICAL SPARES

1 ARMATURE PACKED FOR STOWAGE } FOR COMPRESSOR MOTORS
1 SET OF FIELD COILS } & EACH SIZE PUMP
1 SET OF INTERPOLE COILS } & FAN MOTORS.

The foregoing is a correct description of the Refrigerating Machinery.

J. & E. HALL LTD

F. Wells
DIRECTOR

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										
Frame No. (Boiler Room) A										
Frame No. (Engine Room) A										
Frame No. F										
Frame No. A										
Frame No. F										
Frame No. A										
Frame No. F										
Frame No. A										
Frame No. F										
Frame No. (After Peak) F										
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 Bottom and Face and Face
Bulkhead Stiffeners, Top Bottom and Face and Face
Ribband on Top of Decks Bottom and Face and Face
Side Stringers, Top Bottom and Face and Face
Web Frames, Sides Bottom and Face and Face
Brackets, Top Bottom and Face and Face
Insulated Hatches, Main Bilge Manhole Manhole
Hatchway Coamings, Main Bilge
Hold Pillars Bilge
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 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 bunker's 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 Where
Cargo Battens, Dimensions and spacing, sides fixed or portable floors Are screens fitted over the brine grids at chamber sides tunnel top hinged or permanently fixed.
Thermometer Tubes, No. and position in each chamber 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 Where
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 oilss 2 1/2

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..... 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.....
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..... If so, state name of vessel.....
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 has been constructed under special survey and the materials and workmanship are good. In my opinion the refrigerating machinery and appliances of this vessel will be eligible for the notation + Lloyd's RMC (with date) when the installation and testing have been satisfactorily completed.

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.
2	4	CARB. AMHY	TIE HALL LTD DARTFORD	1946	① BRINE & AIR SLAB CORK	34.56	YES	3	12,800

Low % 46.0:0 }
Fee Brw % 112.0:0 } £18:0:0 (Fee applied for, 19.....
Travelling Expenses £ : : (Received by me, 19.....

R. J. Dunn
Surveyor to Lloyd's Register.

Committee's Minute..... 19 SEP 1947
Assigned..... See Brw. 3125



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