

Report on Refrigerating Machinery and Appliances.

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No. in Reg. Book. Survey held at London Date: First Survey 20 May Last Survey 9 September 1955 (Number of Visits 9)

on the Refrigerating Machinery and Appliances of the S.S. HILARY Tons Gross Net

Vessel built at By whom built Yard No. When built

Owners Blue Star Line Port belonging to Voyage

Refrigerating Machinery made by J. & E. Hall Ltd. Machine Nos. 16673/4 When made 1955

Insulation fitted by When fitted System of Refrigeration F12

Method of cooling Cargo Chambers Insulating Material used

Number of Cargo Chambers insulated Total refrigerated cargo capacity cubic feet

DESCRIPTION OF REFRIGERATING MACHINERY. Where placed

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 7.5 Are all the units connected to all the refrigerated chambers Yes

Compressors, driven direct or through steam engines reduction gearing. Compressors, single or double acting single multiple effect compression no

Are relief valves or safety discs fitted yes No. of cylinders to each unit 3 Diameter of cylinders 4"

Diameter of piston rod trunk piston Length of stroke 3 1/2" 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 2 Diameter 2"

Length of stroke Working pressure Diameter of crank shaft journals and pins 2"

Breadth and thickness of crank webs 6 dia x 1 1/2" No. of sections in crank shaft one Revolutions of engines per minute 500

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

to casings Yes No. of tubes 36 Material of tubes forcalloy Can each coil be readily shut off or disconnected no

Water Circulating Pumps, No. and size of pumps available how worked 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 one Are there two separate systems, so that one may be in use while the other is being

cleared of snow no No. of circuits 8 Material of coils steel Can each coil be readily shut off or

disconnected Yes Total cooling surface of battery coils 4914 sq ft Is a watertight tray fitted under each battery Yes

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

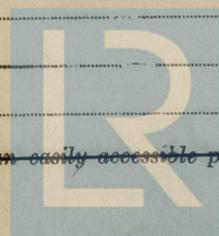
Brine Cooling System, closed or open Are the pipes and tanks galvanised on the inside

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.

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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)		11 sq in	11 sq in	11 sq in		
Gas Compressors	7.6.55	120	350	200	EMS	
Separators	7.6.55	120	350	200	EMS	
Chambers	7.6.55	-	200	150	EMS	
Multiple Effect Receivers	7.6.55	-	200	150	EMS	
Condenser coils and covers	17.6.55	15	100	-	EMS	
D.E. Cooler	26.8.55	120	350	200	EMS	
Evaporator Coils	9.9.55	120	350	200	EMS	
Suction chambers	9.9.55	120	350	200	EMS	
Condenser Headers and Connections	20.5.55	120	350	200	EMS	
Condenser Casings & tubes	24.5.55	120	350	200	EMS	
Evaporator Casings						
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...
 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:
 1 Conn. rod complete
 18 addit. piston rings
 6 oil scraper
 1 set comp. glass packing
 1 test lamp
 1 regulator
 1 driver inset
 1 sight glass
 2 sets gas valve glass packing
 3 gas line valves
 2 " blank discs for cooler
 3 gas line flanges
 1 charging pipe
 6 safety discs
 8 coupling bolts & leathers
 1 fitted spare gear box

The foregoing is a correct description of the Refrigerating Machinery.
 J. & E. ... 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) 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
 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..... 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 and appliances of this vessel have been constructed under Special Survey in conformity with the Society's Rules Regulations and the Secretary's letter. The scantlings and arrangements are in accordance with those shown on the approved plans. The materials and workmanship 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. 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	6	Diethyl ether isotherm	J. E. Hall	1955		7.5	no		

Fee £ 21 : 7 : (Fee applied for, 19 SEP 1955)
 Travelling Expenses £ : : (Received by me, 19)

Pro. Letts
 Surveyor to Lloyd's Register.

Committee's Minute..... THURSDAY 13 OCT 1955
 Assigned..... Deferred for completion
 Send Lin(H)



Certificate to be sent to