

## Report on Refrigerating Machinery and Appliances.

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 (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 single 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 thunk 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 ✓ Diameter ✓

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

to casings yes No. of coils in each 36 Material of coils for cast iron 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 coils in each battery 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	
Oranlicans ...	7.6.55	-	200	150	EMS	
Multiple Effect Receivers ...						
Condenser coils end covers ...	17.6.55	15	100	-	EMS	
D.E. Cooler ...	26.8.55					
Evaporator Coils ...	9.9.55	120	350	200	EMS	
Suction Pumps ...	9.9.55	120	350	200	EMS	
Condenser Headers and Connections ...	20.5.55					
Condenser Casings & Tubes ...	24.5.55	120	350	200	EMS	
Evaporator Casings ...						
NH <sub>3</sub> 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:  
1 Conn. rod complete  
18 add'l. piston rings  
6 oil scrapers  
1 set comp'd gland packing  
1 test lamp  
1 regulator  
1 driver inset  
1 sight glass  
2 set gas valve gland packing  
3 gas line valves  
2 blank discs for cooler  
3 gas line flanges  
1 charging pipe  
6 safety discs  
8 coupling bolts & washers  
1 fitted spare gear box

The foregoing is a correct description of the Refrigerating Machinery.  
*H. J. Sullivan* 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. (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 Local 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	Dick Lloyd's vaporomethane	V. E. Hall	1955		7.5	no		

Fee ..... £ 21 : 7 : (Fee applied for, 19 SEP 1955)

Travelling Expenses £ : : (Received by me, 19)

Surveyor to Lloyd's Register.

Committee's Minute THURSDAY 13 OCT 1955

Assigned

Deferred for completion

Send Lin (H)



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Foundation