

Report on Refrigerating Machinery and Appliances.

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 No. in Reg. Book. Survey held at London Date: First Survey 22 March Last Survey 22 April 1955
 (Number of Visits 9)

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

Vessel built at _____ By whom built _____ Yard No. _____ When built _____

Owners Elders & Fyfe Ltd. Port belonging to _____ Voyage _____

Refrigerating Machinery made by J. E. Hall Ltd Machine No. 81352 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 1 No. of machines 1 Is each machine independent ☒

Total refrigeration or ice-melting capacity in tons per 24 hours 1.65 Are all the units connected to all the refrigerated chambers ☒

Compressors, driven ~~directly~~ through reduction tefrapes Compressors, single or double acting single of multiple effect compression no

Are relief valves or safety discs fitted Press cut out No. of cylinders to each unit 4 Diameter of cylinders 2 1/2"

Diameter of piston rod trunk pistons Length of stroke 2 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 1.57", 1.75"

Breadth and thickness of crank webs 4 5/8 dia x 1 1/4" 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 1 Cast iron or steel casings steel Cylindrical or rectangular Cylindrical Are safety valves fitted

to casings no No. of tubes in each 35 Material of tubes of foralbro Can each tube be readily shut off or disconnected no

Water Circulating Pumps, No. and size of pumps available ✓ how worked ✓ Gas Separators, No. of 1

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 GRIDS 17 Are there two separate systems, so that one may be in use while the other is being

cleared of snow no No. of Circuits 2 in each space Material of grids steel Can each grid be readily shut off or

disconnected no Total cooling surface of battery coils 260 sq ft Is a watertight tray fitted under each battery no

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.

5c.8.50. (MADE AND PRINTED IN ENGLAND.)

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) ...		1624 m	1624 m	1624 m		
Gas Compressors ...	25.3.55	120	350	200	EMS	
Separators ...	25.3.55	120	350	200	EMS	
crankcase Multiple Effect Receivers ...	25.3.55	—	200	150	EMS	
Condenser Coils and covers ...	29.3.55	15	100	—	EMS	
D.E. GRIDS ...	5.4.55					
Evaporator Coils ...	22.4.55	120	350	200	EMS	
Suction vessel ...	22.3.55					
Condenser Headers and Connections ...	25.3.55	120	350	200	EMS	
Condenser Casings 7 tubes ...	25.3.55	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.....
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.....✓

Has the spare gear required by the Rules been supplied.....Yes

Additional Spare Gear Supplied:.....

1 Crankshaft
8 piston rings
1 Connecting rod complete with bearings
1 evap & 1 cond gauge
2 stop valves
6 condenser tubes
1 regulator
2 sets thermostat spares
1 list lamp
2 - 30 lbs flasks FIR (stones)

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. (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.....
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.....

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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 machine and its appliances of this vessel has 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 machine and its 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.

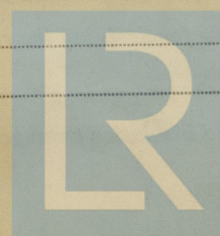
PARTICULARS TO BE ENTERED IN REGISTER BOOK.

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.
1	4	Dichlorodiff hydro methane	J. E. Hall	1955		1.65	Yes		

Fee £ 20 : 1 : 6 (Fee applied for, 28 APR 1955, 19.....)
Travelling Expenses £ : : (Received by me, 19.....)
Surveyor to Lloyd's Register.

Committee's Minute 26 JUL 1955

Assigned See Liverpool
Repos 142498



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