

# REPORT ON REFRIGERATING MACHINERY AND APPLIANCES.

(Received at London Office 1926)

Date of writing Report 18 FEB 1926 When handed in at Local Office 18 FEB 1926 Port of London

No. in Reg. Book 25689 Survey held at Trieste Date: First Survey 6 JANUARY 1926 Last Survey 6 FEBRUARY 1926 (No. of Visits) SIX

on the Refrigerating Machinery and Appliances of the S.S. "LEME" Tons { Gross 8108 Net 5733

Vessel built at Trieste By whom built Stabilimento Tecnico Triestino Yard No. 443 When built 1926

Owners Navigazione Libera Triestino Port belonging to Trieste Voyage Vancouver

Refrigerating Machinery made by J. E. Hall Ltd. Machine No. When made 1926

Insulation fitted by Sphindus When fitted 1926 System of Refrigeration CO2 + Brine

Method of cooling Cargo Chambers Brine Grids + Air Circulation Insulating Material used Gran. Cork + Silicate Cotton

Number of Cargo Chambers insulated 2 Total refrigerated cargo capacity 13,500 cubic feet.

## DESCRIPTION OF REFRIGERATING MACHINERY. Where placed Flat-stair, side eng. room.

Refrigerating Units, No. of one Single, double, or triple single Cubic feet of air delivered per hour ✓

Total refrigeration or ice-melting capacity in tons per 24 hours 10 tons Are all the units connected to all the refrigerated chambers yes.

Compressors, driven direct through single reduction gearing. Compressors, single or double acting Double Acting No. of cylinders one.

Diameter of cylinders 3" Diameter of piston rod 1 3/8" Length of stroke 9" No. of strokes per minute 240

Motive Power supplied from Electric motor thro' spur gearing

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 1/2" journals + pins

Breadth and thickness of crank webs 2 1/2 x 4 3/4 No. of sections in crank shaft one Revolutions of engine per minute 120

Oil Engines, type 2 or 4 stroke cycle Single or double acting

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

Electric Motors, type Enclosed Air Cooled No. of one Rated 23 B.H.P. Kilowatts 18.9

Volts 110 at 605 revolutions per minute. Diameter of motor shafts at bearings 55 mm

Reduction Gearing, maximum shaft horse power at 1st pinion 23 Revolutions per minute at full power at 1st pinion 605.

2nd pinion ✓ 1st reduction wheel ✓ main shaft 120 Pitch circle diameter, 1st pinion 9.6" 2nd pinion ✓

1st reduction wheel ✓ Main wheel 48.4" Width of face, 1st reduction wheel 5 1/2" Main wheel

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings, 1st pinion 8" 2nd pinion ✓

1st reduction wheel ✓ Main wheel 6 3/8" Flexible pinion shafts, diameter 1st ✓ 2nd ✓

Pinion shafts, diameter at bearings, External, 1st 55 mm 2nd ✓ Internal, 1st ✓ 2nd ✓

Diameter of bottom of teeth of pinion, 1st 8.68" 2nd ✓ Wheel shafts, diameter at bearings, 1st

Main 4" Diameter at wheel shroud, 1st pinion 10.4" Main not shrouded.

Gas Condensers, No. of one Cast iron or steel casings Cast iron Cylindrical or rectangular cylindrical

No. of coils in each 3 Material of coils S.D. Copper 3/4" bore x 10" o.d. Can each coil be readily shut off or disconnected yes.

Water Circulating Pumps, No. and size of 1 - centrifugal how worked Elec. direct Gas Separators, No. of 1 suction 1 delivery

Gas Evaporators, No. of one Cast iron or steel casings Steel D. Shaped Pressure or gravity type gravity.

No. of coils in each casing 2 Material of coils S.D. Steel 1" bore x 1 1/8" o.d. Can each coil be readily shut off or disconnected yes.

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 One only. No. of coils in each battery one Material of coils S.D. steel Can each coil be readily shut off or

disconnected Yes. Total cooling surface of battery coils 58 sq metres Is a watertight tray fitted under each battery Yes.

Air Circulating Fans, Total No. of one each of 85 cubic feet capacity, at 1000 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 2 - Centrifugal how worked Elec. direct coupled.

Brine Cooling System, closed or open open. Are the pipes and tanks galvanised on the inside no

No. of brine sections in each chamber meat chamber - 3

Can each section be readily shut off or disconnected yes Are the control valves situated in an easily accessible position yes.

DUAL CLASS NOTE - THE WORDS WHICH DO NOT APPLY SHOULD BE DELETED.

LLOYD'S REGISTER



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*

Steam Condensing Plant. State what provision is made for condensing steam, in terms of Section 4, Clauses 13 and 14 *Yes*

HYDRAULIC AND OTHER TESTS.

Table with columns: DESCRIPTION, Date of Test, Working Pressure, Hydraulic Test Pressure, Air Test Pressure, Stamped, REMARKS. Rows include ENGINE CYLINDERS, GAS COMPRESSORS, SEPARATORS, CONDENSER COILS, EVAPORATOR COILS, CONDENSER HEADERS AND CONNECTIONS, CONDENSER CASINGS, EVAPORATOR CASINGS, NH3 CONDENSER, EVAPORATOR AND AIR COOLER COILS, and BRINE PIPING.

Cooling Test. Has the refrigerating machinery been examined under full working conditions, and found satisfactory *Yes*. Dates of test *2/6/26* Density of Brine *45°* by *Sivadell* hydrometer

Temperatures (when the cargo chambers are cooled down to the required test temperatures) of air at the snow box and of the return air or, delivery and return air at direct expansion or brine cooled batteries. Includes temperatures for MEAT, FRUIT, and cooling water.

SPARE GEAR.

Table with columns: ARTICLES SUPPLIED AS PER RULE, ADDITIONAL SPARE GEAR SUPPLIED. Lists various mechanical parts like Crankshaft, piston and rod, bearings, valves, pumps, gauges, and electrical spares.

ARTICLES REQUIRED BY RULES AND NOT YET SUPPLIED

The foregoing is a correct description of the Refrigerating Machinery.

FOR J. & E. HALL, LTD. Manufacturer. C. Nichol Director

DESCRIPTION OF INSULATION.

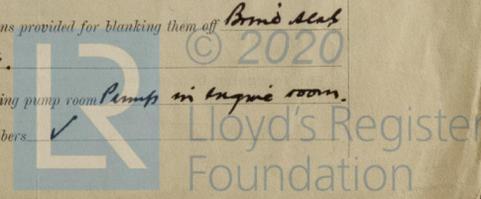
Table with columns: IN LOWER HOLD CHAMBERS, IN 'TWEEN DECK CHAMBERS. Rows include FRAME NO. (Fore Peak, After Peak), BULKHEADS, SIDES, OVERHEADING, FLOORS OF CHAMBERS, TRUNK HATCHWAYS, THRUST RECESS, SIDES AND TOP, TUNNEL SIDES AND TOP, TUNNEL RECESS, FRONT AND TOP.

Table with columns: 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.

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

Coal Bunker Bulkheads, and Brine Outflow and Return Pipes passing through coal bunkers. Is the insulation, so far as practicable, fireproof. Where Cooling Pipes pass through watertight bulkheads or deck plating, are the fittings and packing of the stuffing boxes both watertight and fireproof.

Protection of Pipes. Are all pipes, including air and sounding pipes, which pass through or into insulated chambers, well insulated. Draining Arrangements. Where the chambers are situated below the load water line, what provision is made for draining the inside of the 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. *Yes.* Are cement facings reinforced with expanded steel lattice. *None.*  
 How is the expanded metal secured in place. ✓  
 How are the cork slabs secured to the steel structure of the vessel. *None*  
**Air Trunkways in Chambers**, inside dimensions, main *17" x 17"* and branch *8 x 8 for changing air.*  
 Are they permanently fixed or collapsible, or portable. *permanently fixed* State position in chambers *top corner each side of space*  
 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 7/8"* Are they galvanised externally. *No*  
 How are they arranged in the chambers. *In neat space. 3 coils. on sides bulkheads + overhead.*  
**Thawing Off**, what provision is made for removing the snow from the cooling pipes in the chambers. *Steam heater for home.*

The foregoing is a correct description of the Insulation and Appliances.

**Stabilimento Tecnico Triestino**

Builders.

**Plans.** Are approved Plans or Specifications forwarded herewith for the Refrigerating Machinery and Insulation. *Yes.*

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. ✓

DUAL CLASS  
L.R. & R.I.

**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.

The insulation and refrigerating appliances have been fitted on board under special survey and in accordance with the Rules. The materials and workmanship are good. On completion the installation was examined under working conditions and found in order.

The refrigerating machinery and appliances of this vessel are eligible in my opinion to be classed in the Register Book with notation of + Lloyd's RMC 6.26.

It is submitted that this vessel is eligible for THE RECORD. + Lloyd's RMC 6.26.

**PARTICULARS TO BE ENTERED IN REGISTER BOOK.**

REFRIGERATING MACHINES.					System of (1) Refrigerating (2) Insulating the Chambers.	POWER.		INSULATED CARGO CHAMBERS.	
No. and whether Single or Duplex.	Makers.	Date of Construction.	System.	Type.		Cubic feet of air delivered per hour.	Ice melting capacity per 24 hours. Tons.	No.	Capacity.
1 Single for E. Hall Rd.		1926	Carb. Aubry Hall		1. Brine & Gas air 2. From cork + ice. 1/2 ton.	10	2	2	13500.
Fee <i>Lon 1/2</i> = list 256.- <i>for Lon 20/2/26.</i> Travelling Expenses £ 2 : 0 : 0 } Fee applied for, 16.6. 1926. £ 10 : 3 } Received by me, 19...					<i>Geo. J. Dunlop</i> for Self and V. Lockney. <i>D. Gemmell.</i> Surveyor to Lloyd's Register.				
Fee for a/c list 512.- <i>Exp's list 30.-</i> Committee's Minute					Assigned <i>Corr</i> + Lloyd's RMC 6.26 <i>MJ</i>				

Certificate to be sent to Trieste Office



© 2020 Lloyd's Register Foundation