

# REPORT ON REFRIGERATING MACHINERY AND APPLIANCES.

(Received at London Office

24 OCT 1929

Date of writing Report 20 JUL 1929 When handed in at Local Office Port of London  
No. in Reg. Book. Survey held at Date: First Survey 24 Apr 1929 Last Survey 23<sup>rd</sup> MAY 1929  
(No. of Visits 5)

on the Refrigerating Machinery and Appliances of the Tons { Gross..... Net.....  
Vessel built at Rotterdam By whom built Wiltous Engineering & Slipway Co. Yard No. 318 When built 1929  
Owners Holland Amerika Line Port belonging to Voyage  
Refrigerating Machinery made by J. E. Hall Ltd. Machine No. 4920 4921 4922 When made 1929  
Insulation fitted by When fitted System of Refrigeration CO<sub>2</sub> + Brine  
Method of cooling Cargo Chambers Insulating Material used  
Number of Cargo Chambers insulated 15/19 Total refrigerated cargo capacity 155470 cubic feet.

## DESCRIPTION OF REFRIGERATING MACHINERY. Where placed

Refrigerating Units, No. of 3 Single, double, or triple Single Cubic feet of air delivered per hour  
Total refrigeration or ice-melting capacity in tons per 24 hours 99 Are all the units connected to all the refrigerated chambers

Compressors, driven direct ~~through double~~ ~~reduction gearing~~ Compressors, single or double acting double No. of cylinders 1 per mach.  
Diameter of cylinders 4 1/8" Diameter of piston rod 2" Length of stroke 12" No. of strokes per minute 300

Motive Power supplied from Electric motors, direct coupled.

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 5 1/2" + 6" (flywheel end) 5 1/2" pins  
Breadth and thickness of crank webs 8" x 3 1/2" No. of sections in crank shaft one Revolutions of engines per minute 150

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 No. of Rated Kilowatts  
Volts at revolutions per minute. Diameter of motor shafts at bearings.

Reduction Gearing, maximum shaft horse power at 1st pinion Revolutions per minute at full power at 1st pinion  
2nd pinion 1st reduction wheel main shaft Pitch circle diameter, 1st pinion 2nd pinion  
1st reduction wheel Main wheel Width of face, 1st reduction wheel Main wheel

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings, 1st pinion 2nd pinion  
1st reduction wheel Main wheel Flexible pinion shafts, diameter 1st 2nd  
Pinion shafts, diameter at bearings, External, 1st 2nd Internal, 1st 2nd  
Diameter at bottom of teeth of pinion, 1st 2nd Wheel shafts, diameter at bearings, 1st  
Main Diameter at wheel shroud, 1st Main

Gas Condensers, No. of Cast iron or steel casings Cylindrical or rectangular  
No. of coils in each Material of coils Can each coil be readily shut off or disconnected

Water Circulating Pumps, No. and size of how worked Gas Separators, No. of  
Gas Evaporators, No. of Cast iron or steel casings Pressure or gravity type  
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 Are there two separate systems, so that one may be in use while the other is being  
cleared of snow No. of coils in each battery Material of coils Can each coil be readily shut off or  
disconnected Total cooling surface of battery coils Is a watertight tray fitted under each battery

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

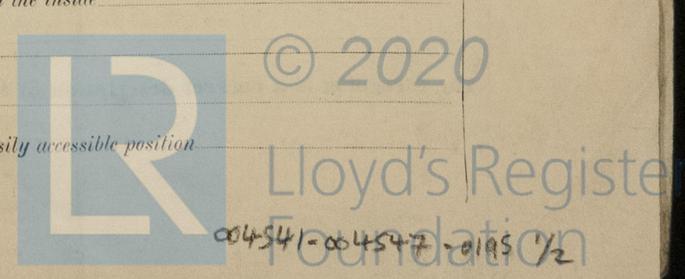
NOTE: THE WORDS WHICH DO NOT APPLY SHOULD BE DELETED.

not made by J. E. Hall Ltd.

REGISTERED CARGO CAPACITY

Capacity. 155470

Register.



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 \_\_\_\_\_

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

**HYDRAULIC AND OTHER TESTS.**

DESCRIPTION.	Date of Test.	Working Pressure.	Hydraulic Test Pressure.	Air Test Pressure.	Stamped.	REMARKS.
ENGINE CYLINDERS (IF TESTED)	29-4-29					
GAS COMPRESSORS	8-5-29	1000lbs	3000lbs	1500lbs	Pl.	
6 SEPARATORS	23-5-29	do.	do.	do.	Pl.	
6 LIQUID RECEIVERS.	24-4-29	do.	do.	do.	Pl.	
6 CONDENSER COILS	3-5-29	do.	do.	do.	Pl.	
EVAPORATOR COILS						
CONDENSER HEADERS AND CONNECTIONS						
CONDENSER CASINGS						
EVAPORATOR CASINGS						
NH, CONDENSER, EVAPORATOR AND AIR COOLER COILS AFTER ERECTION IN PLACE						
BRINE PIPING AFTER ERECTION IN PLACE						

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 air at the snow box and of the return air \_\_\_\_\_ & \_\_\_\_\_

or, 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.**

ARTICLES SUPPLIED AS PER RULE.	ADDITIONAL SPARE GEAR SUPPLIED.
1 set spring rings for each compressor	3 sets of 4 valves, seats & springs for compressor
3 pistons and rods for compressor.	18 addl. valve springs
2 bolts & nuts for big end of connecting rod.	1-1/2" CO <sub>2</sub> valve & 3 spare pipes
2 do. do. crosshead	2 springs for CO <sub>2</sub> safety valve
2 do. do. main bearing	1 hand pump for lubricator
18 lubricator gland leather	12 safety valve discs
18 do. piston do.	1 fitted box for compressor joints.
1 set of 2 leather moulds.	
2 sets of copper joint rings for each compressor	
2 sets of special metal packing rings for each compressor	
1 liner for compressors	

ARTICLES REQUIRED BY RULES AND NOT YET SUPPLIED \_\_\_\_\_

The foregoing is a correct description of the Refrigerating Machinery.

W. & E. HALL LTD  
*Chigbolton* Manufacturer.  
 MANCHESTER

**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. A										
FRAME NO. F (Boiler Room)										
FRAME NO. A										
FRAME NO. F (Engine Room)										
FRAME NO. A										
FRAME NO. F										
FRAME NO. A										
FRAME NO. F										
FRAME NO. A										
FRAME NO. F (After Peak)										
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
BULKHEAD STIFFENERS, TOP		
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 \_\_\_\_\_

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 \_\_\_\_\_

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. Where the chambers are situated below the load water line, 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, inside dimensions, main \_\_\_\_\_ and branch \_\_\_\_\_**

Are they permanently fixed or collapsible, or portable \_\_\_\_\_ State position in chambers \_\_\_\_\_

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 \_\_\_\_\_ 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 machines have been constructed under special survey and the materials and workmanship are good.

**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.
3 Single	J. & E. Hall Ltd.	1929	Carl. Aubrey Hall			99	15	142,000	

London W.C. (5th) 6.0.00 for Rec 7/1/29.

Travelling Expenses £ : 15 : 11 Received by me per Rob. 23/1/30 J.H.W. of 1

Committee's Minute FRI. 25 OCT 1929

Assigned See other rpt. No. Amb. 34716

D. Gemmell.  
Surveyor to Lloyd's Register.



© 2020  
Lloyd's Register  
Foundation