

REPORT ON REFRIGERATING MACHINERY AND APPLIANCES.

(Received at London Office

21 JAN 1937)

Date of writing Report 21 JAN 1937 When handed in at Local Office 21 JAN 1937 Port of London
 No. in Reg. Book. Survey held at _____ Date: First Survey 25th SEPT 1936 Last Survey 1st JANUARY 1937
 (No. of Visits ELEVEN)

on the Refrigerating Machinery and Appliances of the M.V. Salacia Tons { Gross 5495
 Net 3286

Vessel built at Govan By whom built Harland & Wolff Ltd Yard No. 982 G When built 1936

Owners Donaldson Line Port belonging to _____ Voyage _____

Refrigerating Machinery made by J. E. Hall Ltd. Machine No. 9584 When made 1936

Insulation fitted by _____ When fitted _____ System of Refrigeration CO₂ + Brine

Method of cooling Cargo Chambers Brine + Air Insulating Material used _____

Number of Cargo Chambers insulated 6 Total refrigerated cargo capacity 164,000 cubic feet.

DESCRIPTION OF REFRIGERATING MACHINERY. Where placed Main deck port side

Refrigerating Units, No. of two N° of machines one - double Cubic feet of air delivered per hour _____

Total refrigeration or ice-melting capacity in tons per 24 hours 82½ Are all the units connected to all the refrigerated chambers yes

Compressors, driven direct or through single reduction gearing. Compressors, single or double acting double No. of cylinders 2

Diameter of cylinders 6" Diameter of piston rod 2¾" Length of stroke 21" No. of strokes per minute 150 each

Motive Power supplied from Brass compound direct acting Steam engine.

Steam Engines, high pressure, compound, or triple expansion, surface condensing. No. of cylinders 2 Diameter 16" + 29"

Length of stroke 21 Working pressure _____ Diameter of crank shaft journals and pins 4½"

Breadth and thickness of crank webs 10½" x 4½" - 4¾" No. of sections in crank shaft two Revolutions of engines per minute 45

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 _____

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 2 Cast iron or steel casings cast iron Cylindrical or rectangular cylindrical

No. of coils in each 12 Material of coils S.D. Copper ¾" x 1" o.d. Can each coil be readily ~~shut off~~ or disconnected yes

Water Circulating Pumps, No. and size of one 10" x 12" x 12" V.D. how worked Steam direct Gas Separators, No. of 4

Gas Evaporators, No. of 2 Cast iron or steel casings steel Pressure or gravity type pressure

No. of coils in each casing 12 Material of coils S.D. Steel 1½" x 1½" o.d. Can each coil be readily ~~shut off~~ or disconnected yes

Direct Expansion or Brine Cooled Batteries, No. of 2 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 4 in each unit Material of coils S.D. Steel 1½" x 1½" Can each coil be readily ~~shut off~~ or

disconnected yes Total cooling surface of battery coils 9000 sq. ft. Is a watertight tray fitted under each battery yes

Air Circulating Fans, Total No. of 2 each of 22500 cubic feet capacity, at 1400 revolutions per minute maximum

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 3- 8" x 9" x 8" V.D. how worked Steam-direct

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

No. of brine sections in each chamber 1- 3" main, delivery + returns to each turn deck space

1- 3½" do. do. do. do. hold

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

Common
Are thermometers fitted to the outflow and to each return brine pipe yes 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
Machine exhausts to its own surface condenser contained in base of machine.

HYDRAULIC AND OTHER TESTS.

DESCRIPTION.	Date of Test.	Working Pressure.	Hydraulic Test Pressure.	Air Test Pressure.	Stamped.	REMARKS.
ENGINE CYLINDERS (IF TESTED)	<u>H.P. 25-9-36</u> <u>L.P. 24-9-36</u>			<u>350 lbs. sq. in.</u> <u>250 lbs. sq. in.</u>	<u>St.</u> <u>St.</u>	
GAS COMPRESSORS	<u>15-12-36</u>	<u>1000 lbs. sq. in.</u>	<u>3000 lbs. sq. in.</u>	<u>1500 lbs. sq. in.</u>	<u>St.</u>	
SEPARATORS	<u>1-1-34</u>	<u>1000 lbs. sq. in.</u>	<u>3000 lbs. sq. in.</u>	<u>1500 lbs. sq. in.</u>	<u>St.</u>	
CONDENSER COILS	<u>13-10-36</u> <u>20-10-36</u>	<u>do.</u>	<u>do.</u>	<u>do.</u>	<u>St.</u>	
EVAPORATOR COILS	<u>2-10-36</u> <u>20-10-36</u>	<u>do.</u>	<u>do.</u>	<u>do.</u>	<u>St.</u>	
CONDENSER HEADERS AND CONNECTIONS	<u>11-11-36</u> <u>23-11-36</u> <u>4-12-36</u>	<u>do.</u>	<u>do.</u>	<u>do.</u>	<u>St.</u>	
CONDENSER CASINGS	<u>30-10-36</u>	<u>1000 lbs. sq. in.</u>	<u>3000 lbs. sq. in.</u>	<u>1500 lbs. sq. in.</u>	<u>St.</u>	
EVAPORATOR CASINGS	<u>24-10-36</u>	<u>do.</u>	<u>do.</u>	<u>do.</u>	<u>St.</u>	
NH ₃ 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.

Are the machines in accordance with Section 4, Clause 2 of the Rules

Are the working parts of the machines, pumps and motors respectively, interchangeable

ARTICLES SUPPLIED AS PER RULE.

2 pistons + rods for compressors
1 set steam piston rings for H.P. & L.P. cyls.
1 set valves for air & feed pumps.
1 G.M. plunger + rings + rod for E.V. pump.
1 set valves + springs for do.
1 set steam piston rings do.
1 set valves + springs for brine pump
1 set steam piston rings for do.
1 set valves + springs for do.
12 lubricator piston leathers
12 do.
1 set 2 leather mauls
2 bolts + nuts for main bearings
2 do.
2 do.
2 do.
2 pairs CO₂ pipe flanges
Sundry lengths of brine piping + fittings
1 set scrouching disc for each size above piping
Sundry brine cocks
assorted bolts + nuts
1 regulator valve spindle
2 sets copper joint rings for comp. joints.
1 set do.
2 sets special metal rings for each comp. gland.

ADDITIONAL SPARE GEAR SUPPLIED.

2 sets 4 balls + springs for comp.
12 add. springs for do.
2 springs for water relief valve
2 springs for brine do.
2 springs for CO₂ safety valve
1 pump for pressure lubricator
1 CO₂ gauge
1 hydrometer
2 brass case thermometers
12 safety valve discs.
1-1/2" CO₂ valve.
3 spare pipes for same
1 set crankshaft coupling bolts
1 fitted box for comp. parts.

ELECTRICAL SPARES.

For each size fan motor.

1- armature
1- main field coil
1- interpole coil
1- set bearings
1- line brush holders
1- set controller spares

1 set brushes for each motor fitted

ARTICLES REQUIRED BY RULES AND NOT YET SUPPLIED

The foregoing is a correct description of the Refrigerating Machinery.

J. & E. HALL, LTD

Manufacturer.

Chisholm

DIRECTOR

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. (Boiler Room)	F									
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

BRACKETS, TOP BOTTOM AND FACE

INSULATED HATCHES, MAIN

HATCHWAY COAMINGS, MAIN BILGE MANHOLE

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 tights

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

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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, 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 machinery has been constructed under special survey and the materials and workmanship are good and it will be eligible for the notation + Lloyds R.M.C. (with date) when the installation and testing have been satisfactorily completed.

PARTICULARS TO BE ENTERED IN REGISTER BOOK.

REFRIGERATING MACHINES.					System of (1) Refrigerating (2) Insulating the Chambers.	POWER.		INSULATED CARGO CHAMBERS.	
No. of Units.	No. of Compressors.	System.	Makers.	Date of Construction.		Cubic feet of air delivered per hour.	Ice melting capacity per 24 hours. Tons.	No.	Capacity. Cubic ft.
2	2	Cash. Only	F. E. Hall Ltd.	1936	(1) Brine & Air.			6	164,000

Fee London £ 5 : 0 : 0
Travelling Expenses £ : :
Fee applied for, See Gls. Rpt. No. 58710-a
Received by me, See Gls. Rpt. No. 58710-a

D. Gemmell
Surveyor to Lloyd's Register.

Committee's Minute GLASGOW 24 AUG 1937

Assigned See Gls. Rpt. No. 58710-a



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