

REPORT ON REFRIGERATING MACHINERY AND APPLIANCES.

(Received at London Office)

Date of writing Report 10th Nov 1938 When handed in at Local Office 11th Nov. 38 Port of NEWCASTLE-ON-TYNENo. in Reg. Book. 87009 Survey held at Newcastle Date: First Survey 22 Aug/1937 Last Survey 11/11/1938
(No. of Visits 15)on the Refrigerating Machinery and Appliances of the "AMRA" Tons { Gross 8314
Net 3993Vessel built at Walker-on-Tyne By whom built Swan Hunter & Wigham Richardson Ltd Yard No. 1570 When built 10. 38Owners British India S. N. Co. Ltd. Port belonging to London Voyage Indian Coast.Refrigerating Machinery made by J & S. Hall Ltd. Machine Nos. 9890
9891 When made 1938
10052
10053Insulation fitted by Newalls Insulation Co When fitted 10. 38 System of Refrigeration CO₂ + BrineMethod of cooling Cargo Chambers Brine grids. Insulating Material used Slab cork.Number of Cargo Chambers insulated 3 1 on upper deck 2 on lower Total refrigerated cargo capacity 4500 cubic feet.DESCRIPTION OF REFRIGERATING MACHINERY. Where placed on tank top aft of Main E.R
SEE ALSO LONDON RPT of 18th Oct 1938Refrigerating Units, No. of 4. No. of machines 4. Is each machine independent YesTotal refrigeration or ice-melting capacity in tons per 24 hours 11. Are all the units connected to all the refrigerated chambers YesCompressors, driven direct or through single reduction gearing. Compressors, single or double acting Single If multiple effect compression No.are relief valves or safety discs fitted Yes No. of cylinders to each unit One Diameter of cylinders 1 1/16Diameter of piston rod 7/8" Length of stroke 6" No. of revolutions per minute 500Motive Power supplied from direct coupled motors.
(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 ✓Breadth and thickness of crank webs ✓ No. of sections in crank shaft One Revolutions of engine per minute 500Oil Engines, type 8" R 2 or 4 stroke cycle Single or double acting B.H.P. C.O₂ machinesNo. of cylinders ✓ 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:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule

Can the internal surfaces of the receivers be examined ✓ What means are provided for cleansing their inner surfaces ✓Is there a drain arrangement fitted at the lowest part of each receiver ✓ If made under survey ✓No. of Receivers ✓ Cubic capacity of each ✓ Internal diameter ✓ thickness ✓Seamless, ✓ welded or riveted longitudinal joint ✓ Material ✓ Range of tensile strength ✓ Working pressure by Rules ✓Electric Motors, type Enclosed ventilated No. of 4 Rated 10 BHP Kilowatts ✓Volts at 220 @ 500 rpm. 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 2 each with 2 gas circuits Cast iron or steel casings Cast iron Cylindrical or rectangular Cylindrical Are safety valves fitted ✓to casings Yes No. of coils in each 4 Material of coils S.D. Copper 3/4" x 1" Can each coil be readily shut off or disconnected YesWater Circulating Pumps, No. and size of 2 of 1 1/2" Centrifugal how worked electrically Gas Separators, No. of 8Gas Evaporators, No. of 2 each with 2 gas circuits Cast iron or steel casings Steel Pressure or gravity type gravity If pressure type, are safetyvalves fitted ✓ No. of coils in each casing 2 Material of coils S.D. Steel 1" x 1 1/8" Can each coil be readily shut off or disconnected YesDirect Expansion or Brine Cooled Batteries, No. of ✓ Are there two separate systems, so that one may be in use while the other is beingcleared of snow ✓ No. of coils in each battery ✓ Material of coils ✓ Can each coil be readily shut off ordisconnected ✓ 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 4-1 1/2" Centrifugal how worked electricallyBrine Cooling System, closed or open Open Are the pipes and tanks galvanised on the inside NoNo. of brine sections in each chamber one to each chamberCan each section be readily shut off or disconnected Yes Are the control valves situated in an easily accessible position Yes

HYDRAULIC AND OTHER TESTS.

Have important steel castings and forgings been tested in accordance with the Rules

Temperatures (when the cargo chambers are cooled down to the required test temperatures)

SPARE GEAR

Has the spare gear required by the Rules been supplied Yes

12 lubr. piston leathers, 2 sets of leather moulds, 4 springs for CO₂ safety valves
12 do. gland do. 4 do. water relief valve
4 bolts & nuts for Xhead, 2 prs main bearing braces with bolts & nuts
2 prs. crank pin braces with bolts & nuts, 2 hand pumps for lubr, 2 CO₂ gauges,
2 hydrometers, 4 brass cased thermometers, 24 safety discs, 4 prs CO₂ pipe flanges,
2 sets coupling bolts for machines, 4 sets leather couplings for machines,
2 fitted boxes for compressor parts

For Pumps: 1 impeller, 1 spindle, 1 bearing assembly for Brine & Water Pumps

Electrical Spares

- 2 Armatures
- 2 sets of beamings
- 2 Field Coils
- 2 Interpole Coils
- 2 lines of Brush Holders
- 2 sets of Brushes
- 2 sets of Controller Sp.

For Machine Motors,
and Pump Motors (interchangeable)

The foregoing is a correct description of the Refrigerating Machinery.

frigerating Machinery.

Signed for J & E HALL ^{LTD}
By F. WELLS
FOR DIRECTOR

Manufacturer.

DESCRIPTION OF INSULATION.

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	

Is the insulation of the lower hold floor and tunnel top in way of the hatchways protected ✓ if so, how ✓

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 Yes

Cargo Battens, Dimensions and spacing, sides scams filled on floor gratings filled
flat surfaces floors on beams tunnel top ✓

fixed or portable portable . Are screens fitted over the brine grids at chamber sides yes hinged or permanently fixed portable .

Thermometer Tubes, No. and position in each chamber. Lower Turn On: one fitted central in each chamber

diameter 2" are they fitted in accordance with Section 3, Clause 8 Yes

Protection of Pipes. *Are all pipes, including air and sounding pipes, which pass through or into insulated chambers, well insulated* _____ *4/10*

Draining Arrangements. What provision is made for draining the inside of the chambers scuppers with plugs

Where sluices, scupper pipes, and drain pipes are fitted are means provided for blanking them off yes

What provision is made for draining the refrigerating machinery room Fitted in tunnel

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

Fitted between frames with pitch.

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

1 7/8" outside

Minimum thickness

3/16"

Are they galvanised externally

How are they arranged in the chambers

Sides & roof.

Thawing Off, what provision is made for removing the snow from the cooling pipes in the chambers

hot brine

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

FOR SWAN, HUNTER & CO. LTD. BUILDERS.

Plans. Are approved Plans or Specifications forwarded herewith for the Refrigerating Machinery

Yes

and Insulation

Yes.

Is the Refrigerating Machinery and Appliances duplicate of a previous case

No

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

Complete.

General Remarks (State quality of workmanship, opinions as to class, &c.)

The materials & workmanship are good

The requirements of the Society's rules have been carried out and the insulation has been fitted in accordance with the approved plans & specification

The refrigerating machinery & appliances are eligible in an opinion to be classed + Lloyd's R.M.C. 11.38

Approved plan & Specification attached which kindly return for use in the sister vessel now building to 1596

It is submitted that this vessel is eligible for THE RECORD.

+ Lloyd's R.M.C. 11.38

16/11/38

PARTICULARS TO BE ENTERED IN REGISTER BOOK.

REFRIGERATING MACHINES.					System of (1) Refrigerating Machinery (2) Insulating the Chambers.	Ice melting capacity per 24 hours.	Is Refrigerating Machinery Electrically Driven?	INSULATED CARGO CHAMBERS.	
No. of Units.	No. of Compressors.	System.	Makers.	Date of Construction.				No.	Capacity.
4	4	Carb. Amhy.	J. S. Hall & Co.	1938	(1) Brine glands (2) Slab cork	Tons. 11	✓	4	Cubic ft. 4500

Fee

Lat. atty.

Travelling

Fee applied for, 15 NOV 1938

Received by me, 19/11 1938

Committee's Minute

FRI 18 NOV 1938

Assigned

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CERTIFICATE WRITTEN



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