

# REPORT ON REFRIGERATING MACHINERY AND APPLIANCES.

(Received at London Office 25 JUL 1940)

25 JUL 1940

Date of writing Report 19 When handed in at Local Office 25 JUL 1940 Port of London.

No. in Reg. Book. Survey held at London Date: First Survey 5<sup>th</sup> January Last Survey 10<sup>th</sup> July 1940 (No. of Visits 7)

on the Refrigerating Machinery and Appliances of the Swinsc 9/2 ARONDA Tons { Gross 9031 Net 4463

Vessel built at Newcastle By whom built Swan Hunter & Wigham Yard No. 1640 When built 1940

Owners British India Steam Nav. Co. Ltd. Port belonging to LONDON Voyage 10561

Refrigerating Machinery made by J. E. Hall Ltd. Machine Nos. 10562 When made 1940

Insulation fitted by \_\_\_\_\_ When fitted \_\_\_\_\_ System of Refrigeration CO<sub>2</sub> + brine

Method of cooling Cargo Chambers Brine grids Insulating Material used \_\_\_\_\_

Number of Cargo Chambers insulated 4 Total refrigerated cargo capacity 4490 cubic feet.

## DESCRIPTION OF REFRIGERATING MACHINERY. Where placed on two deck aft main eng. room.

Refrigerating Units, No. of 2 No. of machines 2 Is each machine independent yes

Total refrigeration or ice-melting capacity in tons per 24 hours 15 Are all the units connected to all the refrigerated chambers yes

Compressors, 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 safety discs No. of cylinders to each unit 2 Diameter of cylinders 2 1/2"

Diameter of piston rod 1" Length of stroke 6" No. of revolutions per minute 400 max.

Motive Power supplied from 2 (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 3" jls, 3 1/2" pins.

Breadth and thickness of crank webs 60" x 1 3/4" No. of sections in crank shaft one Revolutions of CO<sub>2</sub> machines per minute 400 max.

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:—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, lap welded or riveled longitudinal joint \_\_\_\_\_ Material \_\_\_\_\_ Range of tensile strength \_\_\_\_\_ Working pressure by Rules \_\_\_\_\_

Electric Motors, type Enclosed ventilated No. of 2 Rated 25 H.P. Kilowatts \_\_\_\_\_

Volts 220 at 300/400 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 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 10d. Can each coil be readily shut off or disconnected yes

Water Circulating Pumps, No. and size of one 2" horizontal centrifugal how worked electrically Gas Separators, No. of 4

Gas Evaporators, No. of 2 Cast iron or steel casings steel Pressure or gravity type gravity If pressure type, are safety valves fitted \_\_\_\_\_

No. of coils in each evap. 3 casing Material of coils S.D. Steel 1 1/2" x 1 5/8" o.d. Can each coil be readily shut off or disconnected yes

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 two 2" horiz. centrifugal how worked electrically

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

No. of brine sections in each chamber 1 to each chamber.

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

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

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**Sounding Pipes, No. and position in each chamber situated below the load water line**

Diameter *5-6-40 1000 000 600 20* 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 *2 1/2 3 0* Minimum thickness *20 20 20* 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 was 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.*

*These 2 Sets of CO<sub>2</sub> Refrig machines have been satisfactorily fitted on board the Tm Se S/S ARONDA, SHWR Yards 1640  
For further particulars see Nwc RMC Rpt*

*Adwatt  
Newcastle on Tyne  
11/3/41*

**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.
2	4	Carb. Anhy	J.E. Hall Ltd.	1940	(1) Prime	15		3/4	4850

Fee *None* London..... £ *2* :- :- (Fee applied for, 19  
Travelling Expenses £ *charges* :- :- (Received by me, 19  
*charges in Newcastle report*)

*D. Gemmell  
Surveyor to Lloyd's Register.*

Committee's Minute

**TUE 1 APR 1941**

Assigned

*See Nwc 99306*

Certificate to be sent to



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