

REPORT ON REFRIGERATING MACHINERY AND APPLIANCES.

(Received at London Office 24 MAR 1943)

Date of writing Report 24 MAR 1943 When handed in at Local Office 24 MAR 1943 Port of London

No. in Reg. Book. Survey held at London Date: First Survey 23rd Dec 42 Last Survey 19th March 1943
 AT NWC. 23 APRIL 43 9 SEPT. 1943 (No. of Visits 10 (10 VISITS))

on the Refrigerating Machinery and Appliances of the **M/S. RIPPINGHAM GRANGE** TONS } Gross
 Net

Vessel built at **Newcastle** By whom built **Hawthorn Leslie & Co. Ltd.** Yard No. **653** When built **1942-3**

Owners **Houlder Bros & Co. Ltd.** Port belonging to Voyage

Refrigerating Machinery made by **J. & E. Hall Ltd.** Machine Nos. **1158, 1159, 1160** When made **1942-3**

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

Method of cooling Cargo Chambers **Air circulation + Brine grids** Insulating Material used

Number of Cargo Chambers insulated **55** ~~32~~ Total refrigerated cargo capacity **585,000** cubic feet.

DESCRIPTION OF REFRIGERATING MACHINERY. Where placed **Upper deck port + Star hullship**

Refrigerating Units, No. of **3** No. of machines **3** Is each machine independent **yes**

Total refrigeration or ice-melting capacity in tons per 24 hours **195** Are all the units connected to all the refrigerated chambers **yes**

Compressors, driven direct ~~or through~~ ^{single} ~~double~~ 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 **2** Diameter of cylinders **5 3/8"**

Diameter of piston rod **2 1/4"** Length of stroke **10"** No. of revolutions per minute **300 max.**

Motive Power supplied from **Four electric generators**
 (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 **6 1/2" jls, 4" pins**

Breadth and thickness of crank webs **9" x 4 1/2"** No. of sections in crank shaft **one** Revolutions of engine per minute **300/200**

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 **open with canopy** No. of **3** Rated **185 B.H.P.** Kilowatts

Volts **220 at 300/200** 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 **3 of 14 units each** Cast iron or steel casings **Copper** Cylindrical or rectangular **cylindrical** Are safety valves fitted **yes**

to casings **on water headers** No. of coils in each unit = **one** Material of coils **copper** Can each coil be readily shut off or disconnected **yes**

Water Circulating Pumps, No. and size of **2 - 8" west. centr.** how worked **elec. direct** Gas Separators, No. of **6**

Gas Evaporators, No. of **3** Cast iron or steel casings **steel** Pressure or gravity type **pressure** If pressure type, are safety valves fitted **sent pipes fitted**

No. of coils in each casing **15** Material of coils **steel** Can each coil be readily shut off or disconnected **yes**

Direct Expansion or Brine Cooled Batteries, No. of **52** 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 **see sheet attached** Material of coils **Steel** Can each coil be readily shut off or disconnected **yes**

Total cooling surface of battery coils **35,500 sq. ft.** Is a watertight tray fitted under each battery **yes**

Air Circulating Fans, Total No. of **55** each of **see sheet attached** cubic feet capacity, at **see sheet attached** 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 **5 - 6" west. centr.** how worked **elec. direct**

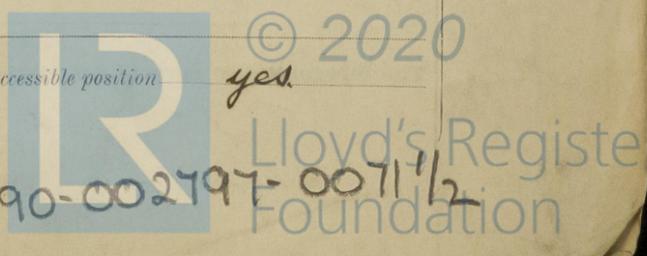
3 - 3" " **1 - 2" "**

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

No. of brine sections in each chamber **see list attached**

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.



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. 183 (Fore Peak)	-	-	-	-	-	✓	12 G. GAL. SHEET IRON.	GRANULATED CORK.	10"	-
FRAME No. 157	F	✓	14 G. GALV. S. I.	GRAN. CORK	10 1/2"	-	14 G. G.S.I.	DO.	6 1/2"	-
	A	-	-	-	-	✓	14 G. G.S.I.	DO.	4"	-
FRAME No. 137	F	-	12 G. G.S.I.	DO.	DO.	-	12 G. G.S.I.	DO.	6 1/2"	-
	A	-	DO.	DO.	4"	-	DO.	DO.	4"	-
FRAME No. 111	F	-	14 G. G.S.I.	DO.	10 1/2"	-	14 G. G.S.I.	DO.	6 1/2"	-
	A	-	DO.	DO.	4"	-	DO.	DO.	4"	-
FRAME No. 88 (Boiler Room)	F	-	12 G. G.S.I.	DO.	10 1/2"	-	12 G. G.S.I.	DO.	10"	-
	A	✓	14 G. G.S.I.	DO.	3"	-	14 G. G.S.I.	DO.	3"	-
FRAME No. 58-60 (Engine Room)	A	✓	12 G. G.S.I.	"IDAGLASS"	12"	-	12 G. G.S.I.	"IDAGLASS"	12"	-
FRAME No. 33	F	-	12 G. G.S.I.	GRAN. CORK.	10"	-	14 G. G.S.I.	GRAN. CORK.	4"	-
	A	-	12 G. G.S.I.	SLAB CORK	1 1/2"	-	14 G. G.S.I.	DO.	9 1/2"	-
FRAME No.	F	-	-	-	-	-	-	-	-	-
FRAME No.	A	-	-	-	-	-	-	-	-	-
FRAME No.	F	-	-	-	-	-	-	-	-	-
FRAME No.	A	-	-	-	-	-	-	-	-	-
FRAME No. 8-9 (After Peak)	F	-	14 G. G.S.I.	GRAN. CORK.	11 1/2"	-	12 G. G.S.I.	DO.	10"	-
IS ...	-	-	14 G. G.S.I.	DO.	10"	-	14 G. G.S.I.	DO.	11 1/2"	-
BULKHEADING ...	-	-	12 G. G.S.I.	DO.	10"	-	12 G. G.S.I.	DO.	10"	-
DOORS OF CHAMBERS ...	-	-	1" x 1 1/4" T&G.	DO.	7"	-	-	-	-	BITUMEN
BUNK HATCHWAYS ...	-	-	-	-	-	✓	12 G. G.S.I.	DO.	11" to 4"	-
JUST RECESS, SIDES AND TOP ...	-	-	-	-	-	-	12 G. G.S.I.	SLAB CORK	1 1/2"	-
TUNNEL SIDES AND TOP ...	-	-	-	-	-	-	12 G. G.S.I.	SILICATE COTTON	12"	-
TUNNEL RECESS, FRONT AND TOP ...	-	-	-	-	-	-	DO.	DO.	DO.	-

BULKHEADS.
 FRAMES OR REVERSE FRAMES, FACE 2" SLAB CORK.
 BULKHEAD STIFFENERS, TOP GRAN. CORK. BOTTOM GRAN. CORK. AND FACE GRAN. CORK. 1/2" MINIMUM
 BAND ON TOP OF DECKS none
 DECK STRINGERS, TOP none BOTTOM ✓ AND FACE ✓
 DECK FRAMES, SIDES none AND FACE ✓
 HATCH COVERS, TOP none BOTTOM ✓ AND FACE ✓
 INSULATED HATCHES, MAIN 10" PLUG HATCHES 11 1/4" T&G. TOP & BTM. BILGE 9" PLUG HATCHES 11 1/4" T&G. TOP & BTM. MANHOLE 9" PLUG HATCHES 11 1/4" T&G. TOP & BTM.
 HATCHWAY COAMINGS, MAIN 11" O.P. BILGE 9" O.P.
 BULKHEAD PILLARS 2" SISAL ROPE
 STIFFENERS 4" CORK 3/16" GALV. PLATING. VENTILATORS ✓
 Are insulated plugs fitted to provide easy access to bilge suction roses YES tank, air, and sounding pipes YES heels of pillars NO.
 Are manhole doors of tanks YES. Are insulated plugs fitted to ventilators NO. cargo ports YES. and side lights NO.

Is the insulation of the lower hold floor and tunnel top in way of the hatchways protected YES. if so, how 1 1/2" ELM.
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 ✓ steel Cofferdam fitted
 and for draining the tank top SCUPPERS TO DRAIN HAT N&S CR. POCKET ONLY.
Fireproof Insulation. Is the insulation and woodwork fireproof in way of bunkers or any surfaces exposed to excessive heat No wood
 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 ✓ 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 Generally 4 each side (TOTAL 221)
 diameter 2 1/2" GALV. W.I. 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 YES.
Draining Arrangements. What provision is made for draining the inside of the chambers 4 1/2" G.I. PIPE TO BILGE WITH U BEND & CLACK TRAP AT END
 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 (FLAT IN BR.) SCUPPERS TO BILGE
 brine return room SCUPPERS TO BILGE 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 *none. Usual S.P. and bilge sounding pipes incorporated with shell - Blue Ins.*
 Diameter *2 1/2"* Are all sounding pipes in way of insulated chambers fitted in accordance with Section 3, Clause 11. *YES*

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 *NONE*

How are the cork slabs secured to the steel structure of the vessel *3/8" Stud bolts and hot bitumen.*

Air Trunkways in Chambers. Are the arrangements satisfactory and in accordance with the approved plans *YES*

Are they permanently fixed or collapsible, or portable *permanent*

Where air trunkways pass through watertight bulkheads, are they fitted with watertight doors *YES* Are the door frames efficiently insulated *YES*

Are insulated plugs supplied for the doorways *YES* Where are the doors worked from *BOTH SIDES*

Cooling Pipes in Chambers, diameter *1 1/2" GALV.* Minimum thickness *1/4"* Are they galvanised externally *YES*

How are they arranged in the chambers *BATTERIES IN AIR-COOLED CHAMBERS AND GRIDS IN BRINE COOLED CHAMBERS*

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

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

J. Lowry for the Messrs. Lloyds Register Builders.

Plans. Are approved Plans or Specifications forwarded herewith for the Refrigerating Machinery *YES* and Insulation *YES*
(If not, state date of approval)

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 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.*

The refrigerating machinery has been satisfactorily installed on board the vessel & tested under working conditions & is eligible in our opinion, for the notation + Lloyds R.M.C. 9.43.

D. Gemmell

+ Lloyds R.M.C. 9.43

24/10/43

PARTICULARS TO BE ENTERED IN REGISTER BOOK.

REFRIGERATING MACHINES.					System of (1) Refrigerating (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.				Tons.	No.
<i>3</i>	<i>6</i>	<i>Cashinby</i>	<i>J. & C. Hall Ltd</i>	<i>1943</i>	<i>air + brine</i> <i>109 Comps</i> <i>S-cotton</i>	<i>195</i>	<i>Yes</i>	<i>32</i>	<i>585,000</i>

Fee *London* £ *16* :- :- } Fee applied for, *23 SEP 1943*
NWC 42 £ *32* :- :- }
 Travelling Expenses £ :- :- } Received by me, *19*

D. Gemmell
 Surveyor to Lloyd's Register.

Committee's Minute *TUES. 5 OCT 1943*

Assigned *+ Lloyds R.M.C. 9.43*



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NOTE - THE WORDS WHICH DO NOT APPEAR SHOULD BE DELETED
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