

REPORT ON REFRIGERATING MACHINERY AND APPLIANCES.

(Received at London Office

28 FEB 1944

Date of writing Report **2 FEB 1944** When handed in at Local Office **2 FEB 1944** Port of **NEWCASTLE ON TYNE.**

No. in Reg. Book. Survey held at **Newcastle** Date: First Survey **11-10-43** Last Survey **24-1-1944** (No. of Visits **8**)

on the Refrigerating Machinery and Appliances of the **SS. "UMTATA"** Tons { Gross **7288** Net **3799**

Vessel built at **Newcastle** By whom built **Swan, Hunter & Wigham Richardson LS** Yard No. **1740** When built **1944**

Owners **Bullard King & Co LS** Port belonging to **London** Voyage

Refrigerating Machinery made by **J & E. Hall LS** Machine Nos. **11231 11232** When made **1943**

Insulation fitted by **Jegson & Co.** When fitted **1944** System of Refrigeration **CO₂ brine**

Method of cooling Cargo Chambers **Air** Insulating Material used **Stellite and Ideglass**

Number of Cargo Chambers insulated **4** Total refrigerated cargo capacity **79200.** cubic feet.

DESCRIPTION OF REFRIGERATING MACHINERY. Where placed **Upper deck amidship.**

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 **45** (Ordinary Compression) See also LONDON RPT. R.M.C. N°1325 of Nov. 1943.

Compressors, driven direct **or through** reduction gearing. Compressors, single or double acting **Single.** If multiple effect compression **Yes**

Are relief valves or safety discs fitted **Yes** No. of cylinders to each unit **2** Diameter of cylinders **3 1/2"**

Diameter of piston rod **1 5/8"** Length of stroke **7"** No. of revolutions per minute **360.**

Motive Power supplied from **Direct connected Steam Engines, Steam from 4 Main Boilers** (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 **2** Diameter **HP 9 1/2"; LP 15"**

Length of stroke **6 1/2"** Working pressure **200/225 lb** Diameter of crank shaft journals and pins **ENGS. 3 1/2" JOURNALS, 3 1/2" PINS.**

Breadth and thickness of crank webs **ENGS. 5" x 2 1/2"** No. of sections in crank shaft **one** Revolutions of engines per minute **360.**

Oil Engines, type **CO₂ MACHS.** No. of cylinders **2** or 4 stroke cycle **2 or 4 stroke cycle** Single or double acting **Single** B.H.P.

No. of cylinders **2** Diameter **3 1/2"** Length of stroke **7"** Span of bearings as per Rule **✓**

Maximum pressure in cylinders **162** 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 riveted longitudinal joint **Material** Range of tensile strength **Working pressure by Rules**

Electric Motors, type **No. of** Rated **Kilowatts**

Volts at **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 of **6** casings **Copper** Cylindrical or rectangular **Cylindrical.** Are safety valves fitted **Yes**

to casings **Yes** No. of coils in each **1** in each **Copper** Can each coil be readily **disconnected** **Yes**

Water Circulating Pumps, No. and size of pumps available **1-10" x 9" x 24"** 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** If pressure type, are safety valves fitted **Yes**

vent pipes **fitted** No. of coils in each casing **7.** Material of coils **Steel** Can each coil be readily **disconnected** **Yes**

Direct Expansion or Brine Cooled Batteries, No. of **4 twin type** 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 **6 in each of 3 twin type** Material of coils **Steel** Can each coil be readily shut off or disconnected **Yes**

disconnected **Yes** Total cooling surface of battery coils **7250 sq. ft** Is a watertight tray fitted under each battery **Yes**

Air Circulating Fans, Total No. of **2-35"** each of **23,000.** cubic feet capacity, at **1950/1300.** 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 **3-3 1/2" Vert. centri.** how worked **electrically**

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

No. of brine sections in each chamber **N°1. M.T. Dk. Coolers = 6, N°2. M.T. Dk. Coolers = 8**

N°3 " " " = 6, N°4 " " " = 6

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.

Im. 11.57.—T. (MADE IN ENGLAND.)



003875-003883-0149/2

Are thermometers fitted to the ^{common} out-to and to each return brine pipe Yes Where the tanks are closed are they ventilated as per Rule Yes.
 Where the tanks are not closed is the compartment in which they are situated efficiently ventilated ✓
 Are the number and capacity of the machines and the number of pumps and sea connections in accordance with Section 2, Clause 1 of the Rules Yes
 Is the exhaust steam led to the main and auxiliary condensers Special Condenser, or Ship's Auxiliary Condenser.

HYDRAULIC AND OTHER TESTS.

DESCRIPTION.	Date of Test.	Working Pressure	Hydraulic Test Pressure.	Air Test Pressure.	Stamped.	REMARKS.
ENGINE CYLINDERS (IF TESTED)						
GAS COMPRESSORS	3-9-43	1000 lb □	3000 lb □	1500 lb □	RM.	
.. SEPARATORS	26-11-43	"	"	"	DG.	
.. MULTIPLE EFFECT RECEIVERS	26-11-43	"	"	"	DG.	
.. CONDENSER COILS	24-9-43 29-9-43 18-5-43	"	"	"	DG.	
.. EVAPORATOR COILS	21-5-43 8-6-43	"	"	"	DG.	
.. CONDENSER HEADERS AND CONNECTIONS	2-11-43, 8-10-43 24-11-43 12-11-43	"	"	"	DA.	
.. CONDENSER CASINGS	16-11-43	10 to 15 lb □	30 lb □		DG.	
.. EVAPORATOR CASINGS	9-7-43	"	"		DG.	
NH ₃ CONDENSER, EVAPORATOR AND AIR COOLER COILS AFTER ERECTION IN PLACE	11/10/43			90 lbs/sq in		
BRINE PIPING AFTER ERECTION IN PLACE...	28/12/43.					

Have important steel castings and forgings been tested in accordance with the Rules Yes
Cooling Test. Has the refrigerating machinery been examined under full working conditions, and found satisfactory Yes
 Dates of test 10th & 11th - 1-44 Density of Brine 48° by Twaddell hydrometer
Temperatures (when the cargo chambers are cooled down to the required test temperatures) of delivery and return air at ~~direct expansion~~ brine cooled batteries
-4° F. & Zero° F., outflow and return brine -11° F. & -
 atmosphere 30° F. cooling water inlet and discharge 45° F. & 49° F., gas in condensers 60° F. and evaporators -18° F.
 the average temperature of the refrigerated chambers Zero° F. and the rise of temperature in these chambers upon the expiration of twelve hours
 time after the machinery and cooling appliances have been shut off 17½° F.
Admittance on June 14/11/44.

SPARE GEAR.

Are the working parts of the machines, pumps and motors respectively, interchangeable Yes
 Has the spare gear required by the Rules been supplied Yes
Additional Spare Gear Supplied: 12 lub. piston leathers, 1 set 2 leather moulds, 1 regulator valve, 2 springs for water relief valve, 12 lub. gland leathers, 8 add. springs for compr. valves, 2 springs for CO₂ safety valves, 2 bolts & nuts for conn. rod ends, 1 pump for press. lub., 2 brass cased thermometers, 2 " " " crosshead, 1 CO₂ gauge, 12 safety valve discs, 1-½" CO₂ gauge valve, 2 " " " main bearings, 1 hydrometer, 2 spare pups for ½" CO₂ gauge valve, 2 pairs of CO₂ tube flanges, 2 liners for compressors, 1 fitted box for Compr. parts, 1 complete set of coupling bolts.

STEAM ENGINES	ELECTRICAL SPARES	Brine Pumps	Fans each size
1 pr. Xhd brasses with bolts & nuts.	1 Armature	1	} 1 complete Spare Motor
1 " crankpin " " " "	Set of field coils	1	
1 set piston rings.	Set of interpole coils	1	
1 pair governor springs.	Set of bearings	1	
1 Valve rod.	Line brush holders	1	1
1 piston, rod & nuts.	Set brushes for each motor fitting	1	1.
2 sets gland packing.	Set Controller spares	1	1
6 condenser tubes.			1 spare 2-bladed rotor for each size fan.
24 ferrules & packing.	<u>For Brine Pumps</u>	<u>For Circ. Water pumps</u>	
1 air pump piston rod.	1 impeller	1 set steam piston rings	
1 set of pump piston rings.	1 sprindle	1 " pump " "	
1 set pump valves.	1 set of brushes	1 set valves & springs	
		1 pump piston & rod.	

The foregoing is a correct description of the Refrigerating Machinery. Signed by J. E. HALL LTD



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.	
BULKHEADS.	FRAME No. 160 (Fore Peak) A					None	GALV. SHEET STEEL	STILLITE	9"	Galv. sheet steel.	
	FRAME No. 140 } F						"	"	6"	"	
		A						"	"	6"	"
	FRAME No. 107 } F							"	10"	"	
		centre A						"	10"	"	
	FRAME No. 100 } F							"	10"	"	
		Sides A									
	FRAME No. (Boiler Room) } F										
		A									
	FRAME No. (Engine Room) A										
	FRAME No. 64 } F							GALV. SHEET STEEL	STILLITE	7"	"
		A						"	"	6"	"
	FRAME No. 40 } F							"	"	6"	"
		A									
	FRAME No. } F										
A											
FRAME No. 7 (After Peak) F							GALV. SHEET STEEL	STILLITE	7"	"	
SIDES ...							"	"	11"	"	
OVERHEADING ...							1/2" T.G. LINING.	"	11"	"	
FLOORS OF CHAMBERS ...							1/2" ASPHALT	SLAB CORK	6"		
TRUNK HATCHWAYS ...											
THRUST RECESS, SIDES AND TOP ...											
TUNNEL SIDES AND TOP ...											
TUNNEL RECESS, FRONT AND TOP ...											

NOT FITTED

In way of After peak tank top and oil fuel bunker at p. wings of no 2 'tween decks.

FRAMES OR REVERSE FRAMES, FACE 3"x2" W.W. grounds on face with galv'd sheet steel lining

BULKHEAD STIFFENERS, TOP Stillite between Bkts. BOTTOM ✓ AND FACE Stillite 1" min.

RIBBAND ON TOP OF DECKS Nil.

SIDE STRINGERS, TOP Nil. BOTTOM Nil. AND FACE Nil.

WEB FRAMES, SIDES Nil. AND FACE Nil.

BRACKETS, TOP 3"x2" W.W. grounds on face with galv'd sheet steel linings filled with Stillite. BOTTOM as at Top. AND FACE ✓

INSULATED HATCHES, MAIN ✓ BILGE ✓ MANHOLE ✓

HATCHWAY COAMINGS, MAIN Trunked between upper + main Bkts. insulated with 9" STILLITE on inside only of Trunk with Galv'd sheet steel lining.

TWIN D.K. PILLARS 6" dia & left - 1" hair felt wrapped with 2" Sisal rope. over 6" dia. - 3" STILLITE with Galv'd sheet steel lining.

MASTS 6" stillite - outer lining Galv'd sheet steel. 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 Yes 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 ✓

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 ✓ 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 3 in No 1/2, 6 in No 2, 4 in No 3, 4 in No 4. Generally at Sides & ends.

diameter 2 1/2" bore 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 2 1/2" dia. trapped Scuppers to bilge.

Where sluices, scupper pipes, and drain pipes are fitted are means provided for blanking them off Screw plugs. Yes.

What provision is made for draining the refrigerating machinery room 2" Scupper discharging overboard & fitted with Storm Valves.

brine return room 2 1/2" scupper fan room 1 1/2" scupper water circulating pump room ✓

Are all air spaces behind insulation arranged to drain to the bilges, bilge wells, or gutterways of the respective chambers. Nil.

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

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 *yes* 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 *Bitumen & grounds*

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

Are they permanently fixed ~~or collapsible, or portable~~ *yes*

Where air trunkways pass through watertight bulkheads, are they fitted with watertight doors *none* Are the door frames efficiently insulated

Are insulated plugs supplied for the doorways Where are the doors worked from

Cooling Pipes in Chambers, diameter *Air Coolers fitted* **Minimum thickness** *-* 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~~ *Air Coolers* in the chambers *hot brine*

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

SWAN HATCHER & WIGHAM RICHARDSON, LTD.
Thos. Morrison Builders.

Plans. Are approved Plans 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

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

The materials and workmanship are good.
The requirements of the Society's Rules have been complied with and the vessel is, in our opinion, eligible to have the notation + Lloyds R.M.C. 1-44 recorded in the Register Book.

It is submitted that this vessel is eligible for THE RECORD, + Lloyds Rule 1-44.

CERTIFICATE WRITTEN

GA
8/2/44
In RB. Glasgow & Greenock

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.
2	4	Carb. Amby.	J & E. Hall. Ls	1944	(2) Stillite & Isdaglan (1) air	45.	no.	4	79200

Fee Lond A/c £ 0-0
Fee NWC A/c £ 2-0-0
Travelling Expenses £ :

Fee applied for, *2/2/43* 19
 Received by me, 19

FRI. 11 FEB 1944

Sheel Steel
E.A. Dean, Aulatt
 Surveyors to Lloyd's Register.

Committee's Minute

Assigned

+ Lloyds Rule 1-44

Rob Price



© 2020

Lloyd's Register
 Foundation

NEWCASTLE-ON-TYNE

Certificate to be sent to