

REPORT ON REFRIGERATING MACHINERY AND APPLIANCES.

(Received at London Office)

23 JUN 1950

Date of writing Report 10 When handed in at Local Office Port of CALCUTTA
 No. in Reg. Book. 24948 Survey held at CALCUTTA Date: First Survey June '49 Last Survey 9 - 5 - 1950
 (No. of Visits 7)

the Refrigerating Machinery and Appliances of the "SANGOLA" Tons { Gross. 8646 Net. 5053
 Built at Whiteinch By whom built Barclay Curle & Co, Ltd. Yard No. / When built 1947 - 6
 Owners British India Steam Nav. Co, Port belonging to London Voyage /
 Refrigerating Machinery made by J & E Hall, Ltd. Machine Nos. / When made 1947
 Insulation fitted by Garden Reach Workshops When fitted 1950 System of Refrigeration Carb. Anhy
 Method of cooling Cargo Chambers Brine & Air Insulating Material used Slab cork - cement faced
 Number of Cargo Chambers insulated now, four (4) Total refrigerated cargo capacity to be verified cubic feet.

DESCRIPTION OF REFRIGERATING MACHINERY. Where placed

Refrigerating Units, No. of No. of machines Is each machine independent
 Total refrigeration or ice-melting capacity in tons per 24 hours Are all the units connected to all the refrigerated chambers
 Compressors, driven direct or through single } reduction gearing. Compressors, single or double acting If multiple effect compression
double }
 Relief valves or safety discs fitted No. of cylinders to each unit Diameter of cylinders
 Diameter of piston rod Length of stroke No. of revolutions per minute
 Motive Power supplied from (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 Revolutions of engines per minute
 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 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

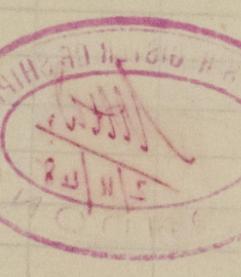
Gas Condensers, No. of Cast iron or steel casings Cylindrical or rectangular Are safety valves fitted
 to casings No. of coils in each Material of coils Can each coil be readily shut off or disconnected
Water Circulating Pumps, No. and size of pumps available how worked **Gas Separators, No. of**
Gas Evaporators, No. of Cast iron or steel casings Pressure or gravity type If pressure type, are safety
 valves fitted No. of coils in each casing Material of coils Can each coil be readily shut off or disconnected

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

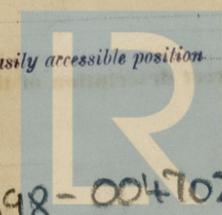
Air Circulating Fans, Total No. of Two - extra each of 2500c.f.m. cubic feet capacity, at revolutions per minute
 Steam or electrically driven Electrically Where spare fans are supplied are these fitted in position ready for coupling up
Brine Circulating Pumps, No. and size of, including the additional pump how worked
Brine Cooling System, closed or open closed Are the pipes and tanks galvanised on the inside externally
 No. of brine sections in each chamber Two (roof & side)

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

W.S.S.
6-7-50



Small, T. MADE IN ENGLA



© 2021

Lloyd's Register Foundation

004698-004702-0308

Are thermometers fitted to the outflow 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 /

HYDRAULIC AND OTHER TESTS.

DESCRIPTION	Date of Test	Working Pressure	Hydraulic Test Pressure	Air Test Pressure	Stamped	REMARKS
ENGINE CYLINDERS (IF TESTED)						
GAS COMPRESSORS						
SEPARATORS						
MULTIPLE EFFECT RECEIVERS						
CONDENSER COILS						
EVAPORATOR COILS						
CONDENSER HEADERS AND CONNECTIONS						
CONDENSER CASINGS						
EVAPORATOR CASINGS						
NH ₃ CONDENSER, EVAPORATOR AND AIR COOLER COILS AFTER ERECTION IN PLACE	3-3-50 & 4-5-50	30lbs. per sq. inch	60lbs. per sq. inch			Tight and Sound.
BRINE PIPING AFTER ERECTION IN PLACE						

Have important steel castings and forgings been tested in accordance with the Rules /
Cooling Test. Has the refrigerating machinery been examined under full working conditions, and found satisfactory **No, see General Remarks.**
 Dates of test / **Density of Brine** / by / hydrometer /
Temperatures (when the cargo chambers are cooled down to the required test temperatures) of delivery and return air at direct expansion or brine cooled batteries /
 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.

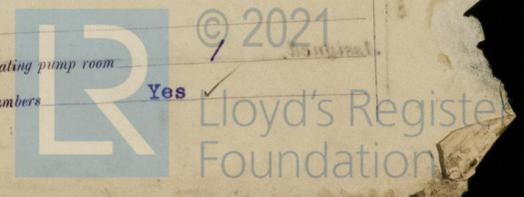
Are the working parts of the machines, pumps and motors respectively, interchangeable /
 Has the spare gear required by the Rules been supplied /
Additional Spare Gear Supplied /

The foregoing is a correct description of the Refrigerating Machinery.
 Manufacturer.

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. (After Peak)	F									
SIDES				as fitted				Bitumastic-11" cork 1" cement 1" air space-1" T & G.		
OVERHEADING				" "				-do- - 12" " -do- - NIL		
FLOORS OF CHAMBERS				" "				-do- - 8" " 1" Granolithic - NIL		
TRUNK HATCHWAYS										
THRUST RECESS, SIDES AND TOP										
TUNNEL SIDES AND TOP										
TUNNEL RECESS, FRONT AND TOP										

FRAMES OR REVERSE FRAMES, FACE **8" x 2" grounds** ✓
 BULKHEAD STIFFENERS, TOP **flanged plate-8 1/2" lugs** BOTTOM **welded to flanges and fitted with 4"x2" grounds** ✓
 RIBBAND ON TOP OF DECKS **Bitumastic 1/2"** ✓
 SIDE STRINGERS, TOP / BOTTOM / AND FACE /
 WEB FRAMES, SIDES / AND FACE /
 BRACKETS, TOP **6"x2" grounds-2" cork and cement** BOTTOM **cement faced** ✓ AND FACE /
 INSULATED HATCHES, MAIN / BILGE / MANHOLE /
 HATCHWAY COAMINGS, MAIN / BILGE /
 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 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 Battsens, Dimensions and spacing, sides / floors / tunnel top /
 fixed or 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 **Two - (one at forward end (inboard) one at aft end (outboard))** ✓
 diameter **2 1/2" bore x 3" O.D.** ✓ 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 /
Draining Arrangements. What provision is made for draining the inside of the chambers **scupper pipes** ✓
 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 /
 brine return room / fan room / water circulating pump room /
 Are all air spaces behind insulation arranged to drain to the bilge or to the gutterways of the respective chambers **Yes** ✓



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 **Yes** / Are cement facings reinforced with expanded steel lattice **Yes** /

How is the expanded metal secured in place **galvanised steel wire fastenings** /
 How are the cork slabs secured to the steel structure of the vessel **bedded in Bitumen and skewered together.** /

Air Trunkways in Chambers. Are the arrangements satisfactory and in accordance with the approved plans **Yes** /
 Are they permanently fixed or collapsible, or portable **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 / **Minimum thickness** / Are they galvanised externally **Yes** /
 How are they arranged in the chambers **Grids.** /

Thawing Off, what provision is made for removing the snow from the cooling pipes in the chambers **steam heated brine.** /

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

W. D. Boyd
 GENERAL MANAGER,
 GARDEN REACH WORKSHOPS, LTD. Builders.

Plans. Are approved Plans or Specifications forwarded herewith for the Refrigerating Machinery / and Insulation **retained for Calcutta records.**
 (If not, state date of approval)
 Is the Refrigerating Machinery and Appliances duplicate of a previous case **Yes** / If so, state name of vessel **"Sirdhana"** /

If the survey is not complete, state what arrangements have been made for its completion and what remains to be done
 To complete the survey of the two additional refrigerated chambers and the refrigerating appliances attached thereto, the Cooling Test remains to be carried out in accordance with Rule Requirements and the capacity of all chambers to be verified. It is stated that this will be dealt with at Singapore. (Surveyor advised) /

General Remarks (State quality of workmanship, opinions as to class, &c.) **Enclosed herewith London Rpts. 7B, Nos. G. 1198/9.**

The additional two refrigerated chambers now fitted in this vessel have been under erection progressively from June 1949 to May 1950 during this vessel's stay in Calcutta at the termination of each round voyage.

The chambers and appliances have been erected in accordance with the Requirements of the Rules for Refrigerating Machinery and Appliances of Ships and in accordance with approved plans.

The workmanship has been found to be and maintained at a high standard.

This installation is eligible in my opinion to be retained as now classed in the Register Book subject to the satisfactory completion of the Cooling Test. Please refer to Secretary's letters 'E' 18-10-48 to Calcutta, 'E' 10-10-47 to J&E Hall, 'E' 18-10-48 to Owners.

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.				No.	Capacity.
2	4	Carb. Anhy.	J&E Hall Ld.	1947	Brine & Air Slab Cork.	Tons. 9.	No.	4	To be verified.

Fee *two installat. 960/- Rs.* (Fee applied for, 17. 5. 19 50.
 Travelling Expenses £ *50/- Rs.* (Received by me, 19

X. E. ...
 Surveyor to Lloyd's Register.

Committee's Minute **TUES. 11 JUL 1950**

Assigned **Deferred.**

King



© 2021
 Lloyd's Register
 Foundation

Certificate to be sent to