

Report on Refrigerating Machinery and Appliances.

Date of writing Report 19 DEC 1946 When handed in at Local Office 19 DEC 1946 Port of LONDON
 No. in Reg. Book. Survey held at DARTFORD Date: First Survey 20.8.46 Last Survey 4.12.46
 (Number of Visits 16)
 on the Refrigerating Machinery and Appliances of the LA HAGUE Tons { Gross 4027
 Net 2224
 Vessel built at GOVAN By whom built HARLAND & WOLFF Yard No. 1343 G When built 1946
 Owners FRENCH GOVERNMENT Port belonging to Voyage
 Refrigerating Machinery made by J.B. Hall Ltd Dartford Machine Nos. 12786 12787 12788 When made 1946
 Insulation fitted by When fitted System of Refrigeration Ammonia
 Method of cooling Cargo Chambers Brine and Air Insulating Material used
 Number of Cargo Chambers insulated 5 Total refrigerated cargo capacity 67,560 cubic feet

DESCRIPTION OF REFRIGERATING MACHINERY. Where placed Starboard side, lower deck + E.R. Midship

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 51 Are all the units connected to all the refrigerated chambers
 Compressors, driven direct or through VEE BELTS 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 6"
 Diameter of piston rod Crank pistons Length of stroke 6" No. of revolutions per minute 475 max.
 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 NH₃ Compressors Diameter 3 5/8" JOURNALS. 3 1/4" PINS
 Length of stroke Working pressure Diameter of crank shaft journals and pins 3 5/8" JOURNALS. 3 1/4" PINS
 Breadth and thickness of crank webs 3 3/8" x 4 1/8" OVAL No. of sections in crank shaft One Revolutions of engines per minute 475 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: Have they been made under survey State No. of Report or Certificate
 Is each receiver, which can be isolated, fitted with a safety valve as per Rule
 Can the internal surfaces of the receivers be examined and cleaned Is a drain fitted at the lowest part of each receiver

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 Enclosed ventilated No. of 3 Rated 42 BHP Kilowatts Volts
 at 220 at 1100 revolutions per minute. Diameter of motor shafts at bearings

Reduction Gearing EACH COMPRESSOR 5-1 1/2" VEE BELTS 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 each of 2 casings steel Cylindrical or rectangular cylindrical Are safety valves fitted
 to casings No No. of TUBES in each 14 in each casing Material of coils steel Can each coil be readily shut off or disconnected No

Water Circulating Pumps, No. and size of pumps available 2-4 Cent. how worked Electrically Gas Separators, No. of 4-1 inch

Gas Evaporators, No. of 2 Cast iron or steel casings steel Pressure or gravity type pressure If pressure type, are safety
 valves fitted in brine No. of TUBES in each casing 14 Material of coils steel Can each coil be readily shut off or disconnected No

Direct Expansion or Brine Cooled Batteries, No. of 2 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 Material of coils steel Can each coil be readily shut off or
 disconnected Yes Total cooling surface of battery coils 2640 ft² Is a watertight tray fitted under each battery Yes

Air Circulating Fans, Total No. of 2-17 1/2" each of 3-500 cubic feet capacity, at 2770 " 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 2-2" centrifugal 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 3 for No 6 MT DK
 3 for No 6 LT DK

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

Are thermometers fitted to the ^{Common} 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. Yes
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. Yes

HYDRAULIC AND OTHER TESTS.

DESCRIPTION.	Date of Test.	Working Pressure. lbs./sq. in.	Hydraulic Test Pressure. lbs./sq. in.	Air Test Pressure. lbs./sq. in.	Stamped.	REMARKS.
Engine Cylinders (if tested) ...	20.8.46	185	600	350	RD	
Gas Compressors ...	23.8.46	185	500	250	RD	
Separators ...	4.12.46	185	500	250	RD	
CRANKCASES	28.8.46	32	300	175	RM, RD	
Multiple Effect Receivers	30.8.46	185	500	250	RD	
Condensers Coils (S+T)	6.11.46	185	500	250	RD	
Evaporators Coils (S+T)	8.11.46	185	500	250	RD	
Condenser Headers and Connections	11.11.46	185	500	250	RD	
Condenser Casings	13.11.46	12½	100	—	RD	
Evaporator Casings	15.11.46	25	100	—	RD	
NH ₃ Condenser, Evaporator and Air Cooler Coils after erection in place	22.11.46	185	1500	500	RD	
Brine Piping after erection in place...	2.12.46					

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. 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. outflow and return brine. 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. Yes
Has the spare gear required by the Rules been supplied. Yes

Additional Spare Gear Supplied: 1 connecting rod (less bushes): 6 connecting rod bushes: 6 connecting rod big end bushes: 1 main bearing for one machine: 1 compressor cylinder cover: 9 safety discs: 1 NH₃ gauge 1 set of "Vee" belts: 2 springs for brine relief valve: 1 hydrometer: 1 NH₃ stop valve: 4 tubes for NH₃ condensers and one expanding tool for tubes: 4 tubes for NH₃ evaporators and one expanding tool for tubes: 1 plunger for forced lubricating pump.

One impeller, one impeller shaft and one set of bearings for sea water and brine pumps

Electrical spares:

One armature packed for stowage } for machine motors
One set of field coils } and brine and water pump
One set of interpole coils } motors

One spare fan motor for each dry fan fitted

One spare fan motor for each dry fan fitted

The foregoing is a correct description of the Refrigerating Machinery.

J. & E. HALL, LTD.

J. Wells
MANUFACTURER

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.	F									
Frame No.	A									
Frame No. (After Peak)	F									
Sides ...										
Overheading ...										
Floors of Chambers ...										
Trunk Hatchways ...										
Thrust Recess, Sides and Top ...										
Tunnel Sides and Top ...										
Tunnel Recess, Front and Top ...										

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

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. Where

Fireproof Insulation. Is the insulation and woodwork fireproof in way of bunkers or any surfaces exposed to excessive heat.

Cooling Pipes pass through watertight bulkheads or deck plating, are the fittings and packing of the stuffing boxes both watertight and fireproof.

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.

diameter. are they fitted in accordance with Section 3, Clause 8.

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.

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

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 bilges, bilge wells, or gutterways of the respective chambers.

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.....

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.....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 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 has been constructed under special survey and the materials and workmanship are good. In our opinion the refrigerating machinery and appliances of this vessel will be eligible for the notation & Lloyd's RMC (with date) when the installation and testing have been satisfactorily completed.

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.
3	6	Ammonia	J.C. Hall & Co. Glasgow	1946	0 Bone and Air	51	Yes	5	67,560

Lon^g 8.13.47
Fee GLS 17.6.8 26: 0 : 0
Travelling Expenses £ : :
Fee applied for, 10 JUN 1947
Received by me, 19.....

R. Muntan, R. J. Dunn
Surveyor to Lloyd's Register.

Committee's Minute.....GLASGOW 10 JUN 1947

Assigned.....



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Foundation