

Report on Refrigerating Machinery and Appliances.

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Date of writing Report ^{17/9} 19 ⁴⁷ When handed in at Local Office 19 ⁴⁷ Port of Stockholm
 No. in Reg. Book. Survey held at ^{17/9} Finspong and Eskilstuna Date: First Survey 26.1.45 Last Survey 23.8 1947
 89472 (Number of Visits 28)

on the Refrigerating Machinery and Appliances of the m.s. "VATNAJÖKULL" Tons ^{Gross 939}
^{Net 466}

Vessel built at Lidingsö By whom built A/B Lidingsöverken Yard No. 5 When built 1947

Owners H.F. Jöklar Port belonging to Rejkjavik Voyage

Refrigerating Machinery made by Svenska Turbinfabriks AB Machine Nos. 15423-24-When made 1947
 Ljungström 25 Install. No. 11024

Insulation fitted by A/B Lidingsöverken When fitted 1947 System of Refrigeration Freon 12

Method of cooling Cargo Chambers Direct expansion in cooling coils Insulating Material used Granulated cork

Number of Cargo Chambers insulated 1 Total refrigerated cargo capacity 40300 cubic feet

DESCRIPTION OF REFRIGERATING MACHINERY. Where placed In engine room

Refrigerating Units, No. of 2 No. of machines 3 Is each machine independent Yes

Total refrigeration or ice-melting capacity in tons per 24 hours 37.5 Are all the units connected to all the refrigerated chambers Yes

V-belt by el. motors ~~direct or through~~ ^{reduction gearing} Compressors, single or double acting SA If multiple effect compression No

Are relief valves or safety discs fitted Yes No. of cylinders to each ~~unit~~ ^{machine} 3 Diameter of cylinders 148 m/m

Diameter of piston rod Trunk type Length of stroke 148 m/m No. of revolutions per minute 320-400

Motive Power supplied from Two 60 KW electric generators driven by 2 Bolinder 90 BHP semi diesel engines.
(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:—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 Compound, enclosed, No. of 3 Rated 15-19 Kilowatts 220 Volts

at 1320-1650 ventilated. revolutions per minute. Diameter of motor shafts at bearings 55 m/m

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 Cast iron or steel casings Steel Cylindrical or rectangular Cylindrical Are safety valves fitted

to casings Yes No. of coils in each Shell & tube Material of coils Aluminium Can each coil be readily shut off or disconnected

Water Circulating Pumps, No. and size of pumps available 2 x 900 lit/min. how worked Electrically Gas Dryer Separators, No. of 1

Gas Evaporators, No. of None 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 32 Are there two separate systems, so that one may be in use while the other is being

cleared of snow Yes No. of coils in each battery Material of coils steel Can each coil be readily shut off or

disconnected Yes Total cooling surface of battery coils 864 m² Is a watertight tray fitted under each battery

Air Circulating Fans, Total No. of 1 each of 75 cubic meter capacity, at 2200 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 Are the pipes and tanks galvanised on the inside

No. of brine sections in each chamber

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

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

MADE AND PRINTED IN ENGLAND.



direct expansion coil

Are thermometers fitted to each return brine pipe? Yes Where the tanks are closed are they ventilated as per Rule.

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.

Table with columns: DESCRIPTION, Date of Test, Working Pressure, Hydraulic Test Pressure, Air Test Pressure, Stamped, REMARKS. Rows include Engine Cylinders, Gas Compressors, Separators, Multiple Effect Receivers, Gas Condenser Coils, Evaporator Coils, Freon receivers, Condenser Casings, Cooling coils, Evaporator Castings, NH3 Condenser, Evaporator and Air Cooler Coils after erection in place, Direct expansion coils, and Brick Piping after erection in place.

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 30.7.47 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

theries freon -30°C. & atmosphere 21°C. / 70°F cooling water inlet and discharge 18°C. & 27°C. / 64.4°F & 80.6°F gas in condensers + 36.5°C. / 98°F and evaporators.

average temperature of the refrigerated chambers -22.2°C. / -8°F and the rise of temperature in these chambers upon the expiration of 12 hours after the machinery and cooling appliances have been shut off 11.95°C. / 21.5°F

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? Spare gear supplied and checked onboard.

Additional Spare Gear Supplied:

The foregoing is a correct description of the Refrigerating Machinery.

SVENSKA TURBINFABRIKS AKTIEBOLAGET LJUNGSTRÖM

Manufacturer.

Jan Brandin

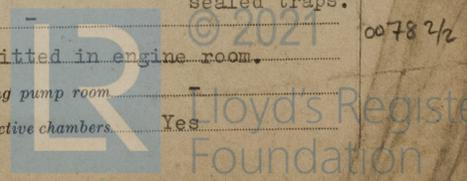
DESCRIPTION OF INSULATION.

IN LOWER HOLD CHAMBERS.

IN 'TWEEN DECK CHAMBERS.

Table with columns: Air Space, Outer Lining, Non-conducting Material, Thickness of ditto, Inner Lining. Rows include Frame No. 91 (Fore Peak), Frame No. 61, Frame No. 27 (Engine Room), 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 1 1/2" grounds as per approved plans. Bulkhead Stiffeners, Top 1 1/2" grounds 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 Plug hatches, 275 m/m Bilge Ditto, 175 m/m gran, Manhole Ditto, 150 m/m gran. Hatchway Coamings, Main Wood covered by 4 m/m Bilge Wood galv. plate. Hold Pillars 40 m/m cork slabs and 35 m/m wood lining. Masts Ventilators Secured plug hatches 200 m/m gr. cork. Inner lining 30 m/m outer 13 m/m. Are insulated plugs fitted to provide easy access to bilge suction roses. Yes tank, air, and sounding pipes. Yes heels of pillars. Yes and manhole doors of tanks. Yes Are insulated plugs fitted to ventilators. Yes cargo ports. Yes and side lights. Is the insulation of the lower hold floor and tunnel top in way of the hatchways protected. Yes if so, how hardwood 47 m/m. 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. Air pipe led to open air. and for draining the tank top. Insulation laid on 2" thwartship battens. 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 3x2", 12" see plan. Portable gratings Tunnel top fixed or portable. fixed Are screens fitted over the bilge grids at chamber sides. Yes hinged or permanently fixed. Perm. fixed. Thermometer Tubes, No. and position in each chamber 8; at frames 3B1, 491, 711, 841 distance thermometer diameter 2 1/2" are they fitted in accordance with Section 3, Clause 8. Yes also fitted. 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. Drains to bilge through N.B. liquid sealed traps. 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. Refr. machinery fitted in engine 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. Yes



Sounding Pipes, No. and position in each chamber, situated below the load water line. 2P and 2S above insulation, 2P and 2S below insulation.
 Diameter 2 1/2" Are all sounding pipes in way of insulation 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 -
 How is the expanded metal secured in place.
 How are the cork slabs secured to the steel structure of the vessel Wire round hold pillars.
 Air Trunkways in Chambers. Are the arrangements satisfactory and in accordance with the approved plans Yes
 Are they permanently fixed or collapsible, or portable. Permanently fixed.
 Are insulated plugs used for doors fitted with watertight doors. Are the door frames efficiently insulated.
 Are insulated plugs used for doors are the doors worked from.
 Cooling Pipes in Chambers, diameter 25.5 m/m Minimum thickness 4 m/m Are they galvanised externally Yes
 How are they arranged in the chambers. On roof and sides.
 Thawing Off, what provision is made for removing the snow from the cooling pipes in the chambers.
 Hot gas can be circulated through any section of coils.
 The foregoing is a correct description of the Insulation and Appliances.

A.-B. LIDINGÖVERKEN
your surveyors Builders.

Plans. Are approved Plans or Specifications forwarded herewith for the Refrigerating Machinery 19.7.46 and Insulation 17.9.46
 (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.)
 This refrigerating machinery and appliances have been built under special survey in accordance with the Rules and the approved plans.
 The material has been tested as required by the Rules and the workmanship is good.
 Makers' certificates in respect of electric motors are attached.
 The machinery and appliances have been fitted on board in accordance with the Rules and approved plans, and a cooling test carried out on the completed installation with satisfactory results.
 In our opinion, this refrigerating installation is eligible to be classed "Lloyd's RMC 8.47 for frozen cargo only" subject to a spare shunt field coil for the air circulating fan being supplied.

It is submitted that this vessel is eligible for THE RECORD.
 + LLOYD'S RMC 8.47 for frozen cargo only.
 Subject - as recommended.
 2/19/47

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	9	Freon 12	STAL, Finspong	1947	1) Dir.exp. in cooling coils 2) Gran.cork	37.5	Yes	1	40300

Fee Kr. 350:-- (Fee applied for, 17/9 1947)
 Late Fee " 25:--
 Travelling Expenses £" :60:--
 Kr. 400:25 previously charged as per Skm. A/c 2698.
 Received by me, 1947
 REPETIN H.-O. Ollerton
 Surveyor to Lloyd's Register.
 OCT 3 1947

Assigned + Lloyd's Rmc 8.47 for frozen cargo only, subject for Temp 0° to 16° F
 CERTIFICATE WRITTEN.
 CERTIFICATE WRITTEN.

