

REPORT ON OIL ENGINE MACHINERY.

No. 77865.

Received at London Office

Date of writing Report 12th Nov 1951 When handed in at Local Office 2. 11. 1951 Port of Glasgow 21 NOV 1951

No. in Survey held at Glasgow Date, First Survey 21st Sept: 1950 Last Survey 12th Nov 1951

Reg. Book. 35216 on the ^{Single} ~~Triple~~ ~~Quadruple~~ Screw vessel Ciudad de Barquisemelo Tons Gross 4214 Net 2384

Built at Glasgow By whom built Fairfield S-long 8. 14 Yard No. 753 When built 1951-11

Engines made at do. By whom made do Engine No. 753 When made 1951

Donkey Boilers made at By whom made Boiler No. When made

Brake Horse Power 4500 Owners Flota Mercanti Gran Colombiana Port belonging to La Suavia

M.N. Power as per Rule 902 Is Refrigerating Machinery fitted for cargo purposes yes Is Electric Light fitted yes

Trade for which vessel is intended deep Sea

OIL ENGINES, &c. —Type of Engines Doxford 2 or 4 stroke cycle 2 Single or double acting opposed

Maximum pressure in cylinders 640 lbs. Diameter of cylinders 670 mm Length of stroke 1320 mm No. of cylinders 4 No. of cranks 12

Mean Indicated Pressure 89 lbs. Ahead Firing Order in Cylinders 1, 3, 4, 2 Span of bearings, adjacent to the crank, measured from inner edge to inner edge 1300 mm Is there a bearing between each cranks No Revolutions per minute 115

Flywheel dia. 2499 mm Weight 1.25 tons Moment of inertia of flywheel (lbs. in² or Kg. cm.²) 5.16 x 10⁶ Means of ignition Compression Kind of fuel used oil

Crank Shaft, ^{Solid forged} ~~Semi built~~ ~~ALL built~~ dia. of journals as per Rule appl as fitted 500 mm Crank pin dia. 500 mm Crank webs Mid. length breadth 910 mm Thickness parallel to axis 285 mm Mid. length thickness 215 mm shrunk Thickness around eye-hole 219.5 mm

Flywheel Shaft, diameter as per Rule as fitted Intermediate Shafts, diameter as per Rule as fitted 14 1/4" Thrust Shaft, diameter at collars as per Rule as fitted 500 mm

Tube Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule as fitted 16" Is the ^{tube} ~~screw~~ shaft fitted with a continuous liner yes

Bronze Liners, thickness in way of bushes as per Rule as fitted 7/8" Thickness between bushes as per Rule as fitted 11/16" Is the after end of the liner made watertight in the propeller boss yes If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner

If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive If two liners are fitted, is the shaft lapped or protected between the liners Is an approved Oil Gland or other appliance fitted at the after end of tube shaft No If so, state type Length of bearing in Stern Bush next to and supporting propeller 5'-4"

Propeller, dia. 14'-6" Pitch 15'-2" No. of blades 4 Material Bronze whether moveable No Total developed surface 94 sq. feet

Moment of inertia of propeller (lbs. in² or Kg. cm.²) 21.8 x 10⁶ Kind of damper, if fitted Bibby de-tuner

Method of reversing Engines direct Is a governor or other arrangement fitted to prevent racing of the engine when de-clutched yes Means of lubrication fresh Thickness of cylinder liners 2.5 mm Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled or lagged with non-conducting material yes If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine Cooling Water Pumps, No. 2 Is the sea suction provided with an efficient strainer which can be cleared within the vessel yes

Bilge Pumps worked from the Main Engines, No. No. 2 Diameter Stroke Can one be overhauled while the other is at work

Pumps connected to the Main Bilge Line (No. and size 12 105 l/min, 12 130 l/min, 12 200 l/min) How driven electric electric electric

Is the cooling water led to the bilges No If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements

Ballast Pumps, No. and size 12 130 l/min, 12 200 l/min Power Driven Lubricating Oil Pumps, including spare pump, No. and size 22 198 galls/min each

Are two independent means arranged for circulating water through the Oil Cooler yes Suctions, connected to both main bilge pumps and auxiliary bilge pumps, No. and size:—In machinery spaces 223", 122", 123" tunnel, 123" tunnel well In pump room

In holds, &c. No. 1 Hold 223", No. 2-223", No. 3-223", No. 4-223", No. 5-323"

Independent Power Pump Direct Suctions to the engine room bilges, No. and size 126", 125", 123"

Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes yes Are the bilge suction in the machinery spaces led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges yes

Are all Sea Connections fitted direct on the skin of the Ship yes Are they fitted with valves or cocks yes Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates yes Are the overboard discharges above or below the deep water line above

Are they each fitted with a discharge valve always accessible on the plating of the vessel yes Are the blow off cocks fitted with a spigot and brass covering plate

What pipes pass through the bunkers How are they protected

What pipes pass through the deep tanks Have they been tested as per Rule

Are all pipes, cocks, valves and pumps in connection with the machinery and all boiler mountings accessible at all times yes

Is the arrangement of valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one compartment to another yes Is the shaft tunnel watertight yes Is it fitted with a watertight door yes worked from shells all

If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork

Main Air Compressors, No. No. of stages diameters stroke driven by

Auxiliary Air Compressors, No. 2 No. of stages 2 diameters 4 1/8" x 10 1/2" stroke 8" driven by electric motor

Small Auxiliary Air Compressors, No. 1 No. of stages diameters stroke driven by emergency generator

What provision is made for first charging the air receivers Hand Start - Emergency generator set

Scavenging Air Pumps, No. 1 diameter 1550 mm stroke 1320 mm driven by M.E

Auxiliary Engines crank shafts, diameter as per Rule as fitted 6.623 Position Starboard, fitted aft in hold & outboard, bottom platform

Have the auxiliary engines been constructed under special survey yes Is a report sent herewith Handwritten spec. no. 14586

AIR RECEIVERS:—Have they been made under survey... *yes* State No. of report or certificate *90 C 85186*

Is each receiver, which can be isolated, fitted with a safety valve as per Rule... *yes*

Can the internal surfaces of the receivers be examined and cleaned... *yes* Is a drain fitted at the lowest part of each receiver... *yes*

Injection Air Receivers, No. *—* Cubic capacity of each... Internal diameter... thickness... Working pressure

Seamless, welded or riveted longitudinal joint... Material... Range of tensile strength... Working pressure

Starting Air Receivers, No. *2* Total cubic capacity *300 φ* Internal diameter *4'-0"* thickness *1 1/4"*

Seamless, welded or riveted longitudinal joint *welded* Material *steel* Range of tensile strength *28/32* Working pressure

IS A DONKEY BOILER FITTED *No* If so, is a report now forwarded

Is the donkey boiler intended to be used for domestic purposes only

PLANS: Are approved plans forwarded herewith for shafting... Receivers *yes* Separate fuel tanks

Donkey boilers... General pumping arrangements... Pumping arrangements in machinery space

Oil fuel burning arrangements... *plans attached with Fairfield YAN 752*

Have Torsional Vibration characteristics been approved *yes* Date of approval *13.4.50*

SPARE GEAR.

Has the spare gear required by the Rules been supplied *yes*

State the principal additional spare gear supplied *as per list attached*

The foregoing is a correct description, For The FAIRFIELD S. & E. Co. Limited. Manufacturer.

Dates of Survey while building... During progress of work in shops... During erection on board vessel

Total No. of visits *94*

Dates of examination of principal parts—Cylinders... Pistons... Connecting rods

Crank shaft... Flywheel shaft... Thrust shaft... Intermediate shafts... Tube shaft

Screw shaft... Propeller... Stern tube... Engine seatings... Engine holding down bolts

Completion of fitting sea connections... Completion of pumping arrangements... Engines tried under working conditions

Crank shaft, material *OH Steel* Identification mark *B 20561* Flywheel shaft, material *part of crankshaft* Identification mark

Thrust shaft, material *part of crankshaft* Identification mark... Intermediate shafts, material *OH Steel* Identification marks

Tube shaft, material... Identification mark... Screw shaft, material *OH Steel* Identification mark

Identification marks on Air receivers *B 2986, W.P. 600cc, HW 26.10.24.10.50*

Welded receivers, state Makers' Name *Marshall & Anderson Ltd*

Is the flash point of the oil to be used over 150°F *yes*

Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with *yes*

Description of fire extinguishing apparatus fitted *CO2 gas in E.R.; 1-10 gallon foam, 6-2 gallon foam, 2-2 gallon carbon tetrachloride*

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo *No*

If the notation for ice strengthening is desired, state whether the requirements in this respect have been complied with *No*

Is this machinery duplicate of a previous case *yes* If so, state name of vessel *Ciudad de Medellin (Fairfield 752)*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The machinery has been constructed under Special Survey in accordance with the Rules and approved plans. Materials and workmanship good.*

afterwards the machinery has been efficiently installed in the vessel, examined under working conditions and found satisfactory.

The Machinery is eligible in my opinion to be classed in the Register Book with the record of + L.M.C. 11.51 and the notation T.S (C.L.)

The amount of Entry Fee... £ 256 : 8
Special...
Donkey Boiler Fee...
Travelling Expenses (if any) £

5 NOV 1951

G.H. Macdonald
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute... Assigned... + LMC. 11.51. Oil Engine

