

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 Barquisemeto Tons Gross 4214 Net 2384
Built at Glasgow By whom built Fairfield S. Long & Co. Ltd 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 do. By whom made do Boiler No. When made
Brake Horse Power 4500 Owners Flota Mercanti Gran Colombiana Port belonging to La Guaira
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 670²/₈ Length of stroke 1320²/₈ No. of cylinders 4 No. of cranks 12
Mean Indicated Pressure 89 lbs. Ahead Firing Order in Cylinders 1, 3, 4, 2 Side Rod centres Span of bearings, adjacent to the crank, measured from inner edge to inner edge 1300²/₈ Is there a bearing between each crank No. Revolutions per minute 115
Flywheel dia. 2499²/₈ 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 dia. of journals as per Rule 500²/₈ as fitted 500²/₈ Crank pin dia. 500²/₈ Crank webs Mid. length breadth 910²/₈ Thickness parallel to axis 285²/₈
Semi built dia. of journals as fitted 500²/₈ Mid. length thickness 215²/₈ shrunk Thickness around eye hole 219.5²/₈
ALL built as fitted 500²/₈ part of crankshaft as fitted 500²/₈
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 500²/₈
Tube Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule as fitted 16 Is the tube 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 Bibbey 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 from Thickness of cylinder liners 25²/₈ 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. N2 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 12 2 1/2" 12 2 1/2" PM (additional suction fitted in 4 N2 753)
In holds, &c. N2 1 Hold 223", N2 2-223", N2 3-223", N2 4-223", N2 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 shell to 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 1550²/₈ stroke 1320²/₈ driven by M.E
Auxiliary Engines crank shafts, diameter as per Rule as fitted 6.623 No. Position Starboard, fitted aft in hold & outboard, bottom platform
Have the auxiliary engines been constructed under special survey yes Is a report sent herewith Manchester spec. no. 14586

AIR RECEIVERS:—Have they been made under survey. *yes* State No. of report or certificate *92 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.
Seamless, welded or riveted longitudinal joint. Material. Range of tensile strength. Working pressure by Rules. Actual.
Starting Air Receivers, No. *2* Total cubic capacity. *300 p* 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 by Rules. *6.00cc* Actual. *6.00cc*
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. *yes* Receivers. *yes* Separate fuel tanks.
(If not, state date of approval)
Donkey boilers. General pumping arrangements. Pumping arrangements in machinery space.
Oil fuel burning arrangements. *plans attached 21st. for 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 - 1950. Sept. 21-22. Oct. 13-24. 31. Nov. 2-3. 8-10. 14-21. 1951. Jan. 8-17. 22-24. 26-30. 31. Feb. 2-6. 7-8. 14-19. 21-23. 26-27. 28. Mar. 2-6. 8-13. 19-21. 22-23. 30. Apr. 3-4. 6-10. 16-24. 25-27. 30. May 1-4. 8-11. 14-15. 16-17. 22.
During erection on board vessel - 1951. May. 13-25. 29-30. June 1-4. 6-7. 13-20. 24-25. July 2-4. 5-13. 23. Aug. 3-9. Sept. 11-13. 17-20. 27-28. Oct. 1-3. 4-5. 8-9. 12-13. 15-16. 18-23. 25. Nov. 1.
Total No. of visits. *94*

Dates of examination of principal parts—Cylinders. *24, 26, 30, 31/51* Covers. */* Pistons. *24, 25/16, 17/51* Rods. *24, 25/16, 17/51* Connecting rods. *11, 14, 30/51*
Crank shaft. *13, 22, 28/51* Flywheel shaft. *24/51* Thrust shaft. *part of crankshaft* Intermediate shafts. *23. 5. 51* Tube shaft. *-*
Screw shaft. *7, 8/19, 3/4/51* Propeller. *22. 5. 51* Stern tube. *16. 4. 51* Engine seatings. *22. 5. 51* Engine holding down bolts. *13. 9. 51*
Completion of fitting sea connections. *22. 5. 51* Completion of pumping arrangements. *16. 10. 51* Engines tried under working conditions. *16. 10. 51*
Crank shaft, material. *OH Steel* Identification mark. *B 20561* Flywheel shaft, material. *part of crankshaft* Identification mark. *B 20561*
Thrust shaft, material. *part of crankshaft* Identification mark. *B 20561* Intermediate shafts, material. *OH Steel* Identification marks. *B 20561*
Tube shaft, material. */* Identification mark. */* Screw shaft, material. *OH Steel* Identification mark. *B 20561*
Identification marks on air receivers. *B 20561*
W.P. 600cc
H.W. 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 gal foam, 6-2 gal foam, 2-2 gal carbon tetrachloride.*
Is the vessel (not being an oil tanker) fitted for carrying oil as cargo. *No* If so, have the requirements of the Rules been complied with. *-*
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. 5 (C.L.)

The amount of Entry Fee ... £ *256 : 8*
Special ... £ : : When applied for ... 19
Donkey Boiler Fee... £ : : When received ... 19
Travelling Expenses (if any) £ : :
Committee's Minute *GLASGOW 20 NOV 1951*
Assigned *+ LMC. 11.51. Oil Engine*



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