

REPORT ON MACHINERY.

Port of Greenock

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No. 10961
 No. in Survey held at Greenock & Campbeltown Date, first Survey 11th Nov. 1890 Last Survey 24th May 1891
 Reg. Book. S.S. "Brio" (Number of Visits 75) 1107-20
 on the S.S. "Brio" Tons 699.97
 Master W. Davie Built at Campbeltown By whom built Campbeltown S.B. Co. When built 1891
 Engines made at Greenock By whom made Kinnaird & Co. (Lim^d) when made 1891
 Boilers made at Glasgow By whom made H. Wallace & Co. when made 1891
 Registered Horse Power 98 Owners Fenwick & Peay Port belonging to Newcastle
 Tonnage 102

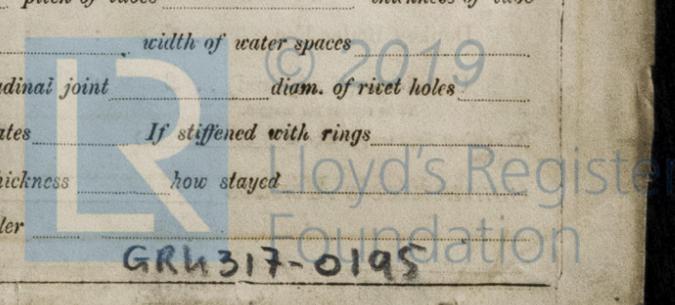
ENGINES, &c.—

Description of Engines Inverted Direct Acting. Triple Expansion.
 Diameter of Cylinders 14 2 1/4 & 4 1/4 Length of Stroke 33" No. of Rev. per minute 84 Point of Cut off, High Pressure 21" ^{1 P 16.5} Low Pressure 18"
 Diameter of Screw shaft 8 1/2 Diam. of Tunnel shaft 8 1/8 Diam. of Crank shaft journals 8 1/2 Diam. of Crank pin 8 1/2 size of Crank webs 15 1/2 x 6"
 Diameter of screw 12.3 Pitch of screw 13.3 No. of blades 4 state whether moveable no total surface 412 square feet
 No. of Feed pumps 2 diameter of ditto 2 1/2 Stroke 18" Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 diameter of ditto 2 1/2 Stroke 18" Can one be overhauled while the other is at work yes
 Where do they pump from Engine room stokehold. Cargo holds & tunnel well.
 No. of Donkey Engines Two Size of Pumps 7 1/2 x 6 & 3 1/2 x 5. Duplex Where do they pump from Large from Sea ballast tanks & bilges. Small from Sea. Hot well & Engine room bilges.
 Are all the bilge suction pipes fitted with roses yes Are the roses always accessible yes Are the sluices on Engine room bulkheads always accessible yes
 No. of bilge injections one and sizes 3 1/2 Are they connected to condenser, or to circulating pump Circulating pump
 How are the pumps worked By Levers.
 Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks Both.
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates yes Are the discharge pipes 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 yes
 How are the pipes carried through the bunkers None How are they protected —
 Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times yes
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges yes
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock on slip before vessel was launched
 Is the screw shaft tunnel watertight yes and fitted with a sluice door yes worked from Engine room top platform.

BOILERS, &c.—

Number of Boilers one Description See Glasgow Report attached Whether Steel or Iron —
 Working Pressure — Tested by hydraulic pressure to — Date of test —
 Description of superheating apparatus or steam chest —
 Can each boiler be worked separately — Can the superheater be shut off and the boiler worked separately —
 No. of square feet of fire grate surface in each boiler — Description of safety valves — No. to each boiler —
 Area of each valve — Are they fitted with easing gear — No. of safety valves to superheater — area of each valve —
 Are they fitted with easing gear — Smallest distance between boilers and bunkers or woodwork — Diameter of boilers —
 Length of boilers — description of riveting of shell long. seams — circum. seams — Thickness of shell plates —
 Diameter of rivet holes — whether punched or drilled — pitch of rivets — Lap of plating —
 Percentage of strength of longitudinal joint — working pressure of shell by rules — size of manholes in shell —
 No. of compensating rings — No. of Furnaces in each boiler —
 Outside diameter — length, top — bottom — thickness of plates — description of joint — if rings are fitted —
 Greatest length between rings — working pressure of furnace by the rules — combustion chamber plating, thickness, sides — back — top —
 Pitch of stays to ditto, sides — back — top — If stays are fitted with nuts or riveted heads — working pressure of plating by rules —
 Diameter of stays at smallest part — working pressure of ditto by rules — end plates in steam space, thickness —
 Pitch of stays to ditto — how stays are secured — working pressure by rules — diameter of stays at smallest part —
 working pressure by rules — Front plates at bottom, thickness — Back plates, thickness —
 Greatest pitch of stays — working pressure by rules — Diameter of tubes — pitch of tubes — thickness of tube —
 Plates, front — back — how stayed — pitch of stays — width of water spaces —
 Diameter of Superheater or Steam chest — length — thickness of plates — description of longitudinal joint — diam. of rivet holes —
 Pitch of rivets — working pressure of shell by rules — diameter of flue — thickness of plates — If stiffened with rings —
 Distance between rings — working pressure by rules — end plates of superheater, or steam chest; thickness — how stayed —
 Superheater or steam chest; how connected to boiler —

Description of furnaces



REPORT ON MACHINERY.

DONKEY BOILER— Description *See Newcastle Survey Report attached.*
 Made at _____ by whom made _____ when made _____ where fixed _____
 Working pressure _____ tested by hydraulic pressure to _____ No. of Certificate _____ fire grate area _____ description of safety valves _____
 No. of safety valves _____ area of each _____ if fitted with easing gear _____ if steam from main boilers can enter the donkey boiler _____
 diameter of donkey boiler _____ length _____ description of riveting _____
 Thickness of shell plates _____ diameter of rivet holes _____ whether punched or drilled _____ pitch of rivets _____ lap of plating _____
 per centage of strength of joint _____ thickness of crown plates _____ stayed by _____
 Diameter of furnace, top _____ bottom _____ length of furnace _____ thickness of plates _____ description of joint _____
 Thickness of furnace crown plates _____ stayed by _____ working pressure of shell by rules _____
 Working pressure of furnace by rules _____ diameter of uptake _____ thickness of plates _____ thickness of water tubes _____

SPARE GEAR. State the articles supplied:— *2 Connecting rod top end & 2 bottom end bolts & nuts. 2 Main bearing bolts. A set of coupling bolts. 1 set of feed & bridge pump valves. A quantity of bolts nuts and iron assorted.*

The foregoing is a correct description,
Amcaid & Co. Ltd Manufacturer. *per C. S. Wincaid*

General Remarks (State quality of workmanship, opinions as to class, &c.)
These Engines have been specially surveyed during construction workmanship good. Shafts examined when being turned & found apparently free from defects. Main steam pipe tested by hydraulic pressure to 320 lbs per square inch. The Engines and Boilers are satisfactorily fitted in vessel and tested under full steam. They are now in good order and safe working condition and are in my opinion eligible to be noted in the Register Book. LMC 5.91.

Not submitted that this vessel is eligible for the record LMC 5.91

C. S. Wincaid
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

The amount of Entry Fee £ 2 : - : - received by me,
 Special £ 15 : 6 : -
 Donkey Boiler Fee £ : - : -
 Certificate (if required) £ *gratis* 27th May 1891
 To be sent as per margin.
 (Travelling Expenses, if any, £ 1 : - : -)
 Committee's Minute
 + LMC 5.91

FRI, 29 MAY 1891

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