

REPORT

No. 4445

No. in Survey held at Renfrew
Reg. Book.

on the Machinery of

Master A. Nicholas Built at Renfrew

Engines made at Renfrew By whom made

Boilers made at Glasgow By whom made

Registered Horse Power 210 Owners Bruce

ENGINES, &c.—

Option of Engines Triple Expansion (Three)
Diameter of Cylinders 14" 24" 13" Length of Stroke 30" No. of Rev. 1
Diameter of Screw shaft 4 1/8" Diam. of Tunnel shaft 1 1/4" Diam. of Crank shaft 1 1/4"
Diameter of screws 8" 6" 8" 2" Pitch of screws 1 1/2" 9" No. of 1
No. of Feed pumps One diameter of ditto 3 1/2" Stroke 16" Can one be 1
No. of Bilge pumps One diameter of ditto 3 1/2" Stroke 16" Can one be 1
Where do they pump from Iron All compartments
No. of Donkey Engines Two Size of Pumps 6" x 4" x 6"

Are all the bilge suction pipes fitted with roses yes Are the roses always accessible yes Are the
No. of bilge injections Two and sizes 2 1/4" Are they connected to condenser, or to circulating
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
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
How are they protected By wood
Pipes are carried through the bunkers Bilge pipes
Pipes, cocks, valves, and pumps in connection with the machinery accessible at all times yes
Pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges yes
Were stern tube, propeller, screw shaft, and all connections examined in dry dock On ship previous to
Is the screw shaft tunnel watertight yes and fitted with a sluice door yes worked from Below

BOILERS, &c.—

Number of Boilers Three Description High-Pressure Whether Steel or Iron Steel
Working Pressure 150 lbs. Tested by hydraulic pressure to 300 lbs. Date of test Two boilers 3
Description of superheating apparatus or steam chest Vertical
Can each boiler be worked separately yes Can the superheater be shut off and the boiler worked separately yes
No. of square feet of fire grate surface in each boiler 36.6 ft Description of safety valves Direct Spring No. to 1
Area of each valve 9.6 area Are they fitted with easing gear yes No. of safety valves to superheater 1 area 1
Are they fitted with easing gear yes Smallest distance between boilers and bunkers or woodwork 12" Diameter 12"
Length of boilers 9-6 description of riveting of shell long. seams Butt Three rows circum. seams Lap double
Diameter of rivet holes 1 1/4" whether punched or drilled Drilled pitch of rivets 3 7/8" & 7 3/4" Lap of plat 12"
Percentage of strength of longitudinal joint 84 working pressure of shell by rules 160 lbs size of manholes in 12"
No. of compensating rings 1 description of riveting of shell long. seams Butt Three rows circum. seams Lap double
Outside diameter 43" length, top 6-3" bottom 6-3" thickness of plates 17/32" description of joint Weld
Greatest length between rings 151" working pressure of furnace by the rules 151 lbs combustion chamber plating, thickness, sides 12"
Pitch of stays to ditto, sides 7 x 7" back 7 1/2 x 7" top 7 x 7 1/2" If stays are fitted with nuts or riveted heads Nuts
rules 150 lbs Diameter of stays at smallest part 1 3/16" & 1 1/2" working pressure of ditto by rules 180 lbs end plates in steam 12"
Pitch of stays to ditto 15" how stays are secured Nuts & washers working pressure by rules 12"
smallest part 2 1/2" new working pressure by rules 164 lbs Front plates at bottom, thickness 12"
Greatest pitch of stays 7 1/2 x 7" working pressure by rules 150 lbs Diameter of tubes 3 1/2" dia pitch 15 1/2"
plates, front 12" back 12" how stayed Tubes pitch of stays 15 1/2"
Diameter of Superheater or Steam chest 30" length 27" thickness of plates 9/16" description of longitu 12"
Pitch of rivets 3" working pressure of shell by rules 500 diameter of flue 12" thickness of 12"
Distance between rings 12" working pressure by rules 500 end plates of superheater, or steam chest 12"
Superheater or steam chest; how connected to 12"

fixed
 ate area
 ch easing gear
 description of riveting
 pitch of rivets
 lap of plating

description of joint
 working pressure of shell by rules
 thickness of plates
 thickness of water tubes

earings, 1/2 Connecting rod bolts, 2 Sets of
 cutaway pump rod 2 pairs Connecting rod brasses
 1/2 3 Valve Spindles, Springs for Safety Relief Valves
 ndense tubes
 can supply
 inches incl
 Gumbles, with
 1 bac

which
) together with
 Auxiliary Engines 12" 24"
 of good materials and workmanship
 exercised in carrying out all the details
 of the wheels and other gear is of Cast Steel
 to be most suitable for this kind of work where the
 to severe strains.

station of the work. The Dredging Capabilities of the
 the new Lidal Harbour at Greenock amongst Slip
 Clay, and the whole found to work satisfactorily
 added to a mean draught of 13' 11 1/2", a Trial of Speed
 at the measured mile at Helmslie with the following

am	Sec	Rev	Time	Speed	Run
50	24	98-98	4.34	= 4.9 Knots	Now
50	24	98-98	8.24	= 4.14 "	Stern
50	24	92-96	7.42	= 4.8 "	Stern
4.946 Mean Speed					

and Boilers in good + safe working
 condition to be noted as
 Book **L.M.C.**

received by me,

21/12/1884

L.M.C.

Allison Waller
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