

REPORT ON MACHINERY.

Port of *Leith*Received at London Office **WED 17 JUL 1895**No. in Survey held at *Kinghorn*
Reg. Book.Date, first Survey *21st May 1894* Last Survey *10th July 1895*(Number of Visits *25*)on the *S. S. "Benhead" (yard No-90)*Tons { Gross *1724.89*
Net *1080.66*Master *Off* Built at *Kinghorn* By whom built *John Scott & Co*When built *1895*Engines made at *Kinghorn* By whom made *John Scott & Co*when made *1895*Boilers made at *do* By whom made *do*when made *1895*Registered Horse Power *130* Owners *Joseph Hault*Port belonging to *Liverpool*Nom. Horse Power as per Section 28 *180*

ENGINES, &c.— Description of Engines *Triple expansion on three cranks* No. of Cylinders *3*
 Diameter of Cylinders *18"-30"-50"* Length of Stroke *36"* Revolutions per minute *80* Diameter of Screw shaft *as per rule 9 5/8"*
as fitted 10"
 Diameter of Tunnel shaft *as fitted 9 3/4"* Diameter of Crank shaft journals *9 3/4"* Diameter of Crank pin *10"* Size of Crank webs *14 1/2" x 6 3/4"*
 Diameter of screw *13' 6"* Pitch of screw *15' 0"* No. of blades *4* State whether moveable *no* Total surface *60 sq*
 No. of Feed pumps *2* Diameter of ditto *3"* Stroke *18"* Can one be overhauled while the other is at work *yes*
 No. of Bilge pumps *2* Diameter of ditto *3"* Stroke *18"* Can one be overhauled while the other is at work *yes*
 No. of Donkey Engines *Two* Sizes of Pumps *8 1/2" x 6" x 10" & 5 1/2" x 3 1/2" x 5"* No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room *Four 3" dia* In Holds, &c. *Two to fore hold, one to after hold, one to after well & one to tunnel well, all 3" dia*
 No. of bilge injections *1* sizes *4"* Connected to condenser, or to circulating pump *yes* Is a separate donkey suction fitted in Engine room & size *yes 3"*
 Are all the bilge suction pipes fitted with roses *yes* Are the roses in Engine room always accessible *yes* Are the sluices on Engine room bulkheads always accessible *yes*
 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*
 What pipes are carried through the bunkers *none* How are they protected *✓*
 Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times *yes*
 Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilge *yes*
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock *new vessel* Is the screw shaft tunnel watertight *yes*
 Is it fitted with a watertight door *yes* worked from *upper deck*

BOILERS, &c.— (Letter for record *S*) Total Heating Surface of Boilers *3132 sq*
 No. and Description of Boilers *Two, cylindrical single ended* Working Pressure *200 lbs* Tested by hydraulic pressure to *400 lbs*
 Date of test *22-1-95* Can each boiler be worked separately *yes* Area of fire grate in each boiler *49.5 sq* No. and Description of safety valves to
 each boiler *Two, spring loaded* Area of each valve *4.9 sq* Pressure to which they are adjusted *205 lbs* Are they fitted
 with easing gear *yes* Smallest distance between boilers or uptakes and bunkers or roadwork *9"* Mean diameter of boilers *13' 0"*
 Length *10' 6"* Material of shell plates *steel* Thickness *1 3/32"* Description of riveting: circum. seams *Lap. S. Rivet* long. seams *S.B.S. V. Rivet*
 Diameter of rivet holes in long. seams *1 5/16"* Pitch of rivets *8 1/2"* Lap of plates or width of butt straps *18 1/2"*
 Per centages of strength of longitudinal joint *ribs 93.0* Working pressure of shell by rules *200 lbs* Size of manhole in shell *16 x 12*
plate 84.6
 Size of compensating ring *6" x 1 7/8"* No. and Description of Furnaces in each boiler *3, plain* Material *steel* Outside diameter *37 1/2"*
 Length of plain part *top 3' 0"* Thickness of plates *crown 2 3/32"* Description of longitudinal joint *welded* No. of strengthening rings *one*
 Working pressure of furnace by the rules *200 lbs* Combustion chamber plates: Material *steel* Thickness: Sides *1 9/32"* Back *1 9/32"* Top *1 9/32"* Bottom *7/8"*
 Pitch of stays to ditto: Sides *7 3/4"* Back *7 3/4"* Top *7 3/4"* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *200 lbs*
 Material of stays *steel* Diameter at smallest part *1 1/8"* Area supported by each stay *60 sq* Working pressure by rules *224 lbs* End plates in steam space:
 Material *steel* Thickness *1 7/8"* Pitch of stays *16" x 15"* How are stays secured *S. N. & W.* Working pressure by rules *209 lbs* Material of stays *steel*
 Diameter at smallest part *5-7 0"* Area supported by each stay *240 sq* Working pressure by rules *210 lbs* Material of Front plates at bottom *steel*
 Thickness *3/4"* Material of Lower back plate *steel* Thickness *1 5/32"* Greatest pitch of stays *12"* *2 7/8"* Working pressure of plate by rules *270 lbs*
 Diameter of tubes *3 1/2"* Pitch of tubes *4 5/8" x 4 3/4"* Material of tube plates *steel* Thickness: Front *3/4"* Back *3/4"* Mean pitch of stays *9 3/4"*
 Pitch across wide water spaces *14" x 3/4"* Working pressures by rules *247 lbs* Girders to Chamber tops: Material *steel* Depth and
 thickness of girder at centre *9 x 1 1/2"* Length as per rule *28 1/2"* Distance apart *7 3/4"* Number and pitch of Stays in each *2-7 3/4"*
 Working pressure by rules *260 lbs* Superheater or Steam chest; how connected to boiler *none* Can the superheater be shut off and the boiler worked
 separately *✓* Diameter *✓* Length *✓* Thickness of shell plates *✓* Material *✓* Description of longitudinal joint *✓* Diam. of rivet
 holes *✓* Pitch of rivets *✓* Working pressure of shell by rules *✓* Diameter of flue *✓* Material of flue plates *✓* Thickness *✓*
 If stiffened with rings *✓* Distance between rings *✓* Working pressure by rules *✓* End plates: Thickness *✓* How stayed *✓*
 Working pressure of end plates *✓* Area of safety valves to superheater *✓* Are they fitted with easing gear *✓*

DONKEY BOILER— Description *Multitubular cylindrical single ended.*
 Made at *Kinghorn* By whom made *John Scott & Co* When made *1895* Where fixed *on deck*
 Working pressure *80 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate *343* Fire grate area *14½* Description of safety valves *Spring loaded*
 No. of safety valves *2* Area of each *3.14* Pressure to which they are adjusted *80 lbs* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Diameter of donkey boiler *7'3"* Length *8'0"* Material of shell plates *steel* Thickness *½"*
 Description of riveting long. seams *Lap, triple riveted* Diameter of rivet holes *¾"* Whether punched or drilled *drilled* Pitch of rivets *3"*
 Lap of plating *5½"* Per centage of strength of joint *75.0* Rivets *75.25* Thickness of shell plates *½"* Radius of do. *flat* No. of Stays to do. *4*
 Dia. of stays. *1.99* Diameter of furnace *Top 33 ½" Bottom* Length of furnace *6'3"* Thickness of furnace plates *15/32* Description of joint *welded* Thickness of furnace crown plates *✓* Stayed by *✓* Working pressure of shell by rules *95 lbs*
 Working pressure of furnace by rules *80 lbs* Diameter of tubes *2½"* Thickness of tube plates *5/8"* Thickness of water tubes *✓*

SPARE GEAR. State the articles supplied:— *As per Rule & in addition, a set of piston rings & springs, two safety valve springs, two escape valve springs, a propeller.*

The foregoing is a correct description,

Manufacturer.

John Scott & Co

General Remarks (State quality of workmanship, opinions as to class, &c.) *The machinery of this vessel has been constructed under special survey, the materials & workmanship are good. The engines have been tried & the safety valves of main & donkey boilers adjusted under steam at their working pressures. The machinery is now in good & safe working condition & eligible in my opinion to have the notation of + LMC 7,95. The approved boiler tracings are forwarded herewith.*

It is submitted that this is correct for

THE RECORD. + LMC 7.95

APR 17.7.95

Cole

Certificate (if required) to be sent to

The amount of Entry Fee.. £ 2 :- :- When applied for,
 Special £ 27 :- :-
 Donkey Boiler Fee £ ✓ :- :-
 Travelling Expenses (if any) £ 3 :- :-

MACHINERY CERTIFICATE
WRITTEN.

16/7/95

Thomas Field
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

Assigned

FRI 19 JUL 1895

+ LMC 7.95



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 Foundation