

REPORT ON MACHINERY.

No. 5403 Mr. H. H. H.
No. in Survey held at Stockton-on-Tees Date, first Survey 26 June Last Survey 11 Feb 1884
Reg. Book. 1 on the S. S. "Humida" (Number of Visits 12)
Master J. P. Mogen Built at Sunderland By whom built Sunderland Ship Co Tons 1648
Engines made at Stockton By whom made Polair & Co. Ltd When built 1883
Boilers made at do By whom made do when made do
Registered Horse Power 228 Owners Porter & Lewis Port belonging to London

ENGINES, &c.—

Description of Engines Compound. Reversed. Surface Condensing
Diameter of Cylinders 36 1/2 x 68 Length of Stroke 42 No. of Rev. per min 60 Point of Cut off, High Pressure 2/3 Low Pressure 2/3
Diameter of Screw shaft 12 3/4 Diam. of Tunnel shaft 12 3/4 Diam. of Crank shaft journals 13 Diam. of Crank pin 13 size of Crank webs 18 x 9
Diameter of screw 15-6 Pitch of screw about 1 1/2 No. of blades Four state whether moveable Yes total surface not ascertained
No. of Feed pumps Two diameter of ditto 4 1/4 Stroke 30 Can one be overhauled while the other is at work Yes
No. of Bilge pumps Two diameter of ditto 4 1/4 Stroke 30 Can one be overhauled while the other is at work Yes
Where do they pump From fore hold, engine room, after well & tanks. After pump from after well & engine room
No. of Donkey Engines Two Size of Pumps 1 1/2 dia x 9 stroke Where do they pump from Large donkey from tanks, fore hold, engine room & after well. Small donkey from sea, hot well & ballast tanks
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 No
No. of bilge injections One and sizes 6" Are they connected to condenser, or to circulating pump in engine room
How are the pumps worked By hand worked from cross head on low pressure piston rod.
Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Stop valves & cocks
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 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 Nov
Is the screw shaft tunnel watertight Sealed & fitted with a sluice door Yes worked from Platform in engine room

BOILERS, &c.—

Number of Boilers Two Description Cylindrical. Multitubular Whether Steel or Iron Part Steel
Working Pressure 50 lbs Tested by hydraulic pressure to 160 lbs Date of test 1.11.83. Certificate No. 1041
Description of superheating apparatus or steam chest Cylindrical. Multitubular. dome contracted at neck
Can each boiler be worked separately Yes Can the superheater be shut off and the boiler worked separately No Superheater
No. of square feet of fire grate surface in each boiler 61 Description of safety valves Spring No. to each boiler Two
Area of each valve 1 1/4 Are they fitted with easing gear Yes No. of safety valves to superheater ✓ area of each valve ✓
Are they fitted with easing gear ✓ Smallest distance between boilers and bunkers on woodwork About 6' Diameter of boilers 14.9 3/8
Length of boilers 10-0" description of riveting of shell long. seams Double Thickness of shell plates 13/16
Diameter of rivet holes 1 1/4 whether punched or drilled Drilled pitch of rivets 4 1/2 Lap of plating Straps 1 1/2 broad
Per centage of strength of longitudinal joint 1/2 working pressure of shell by rules 96.2 lbs size of manholes in shell 16 x 12
Size of compensating rings Rectangular plate 28 x 26 x 1 1/8 No. of Furnaces in each boiler Four
Outside diameter 3-0 length, top 6-1 bottom 8-9 thickness of plates 1 1/2 x 9/16 Description of joint 1 1/2 straps & 4 rings are fitted No
Greatest length between rings ✓ working pressure of furnace by the rules 100 lbs combustion chamber plating, thickness, sides 1/2 back 1/2 top 1/2
Pitch of stays to ditto, sides 8 x 8 back 5 x 4 top 4 x 4 If stays are fitted with nuts or riveted heads Part nuts & part riveted working pressure of plating by rules 100 lbs
Diameter of stays at smallest part 1 5/16 working pressure of ditto by rules 126 lbs and plates in steam space, thickness 1/8
Pitch of stays to ditto 16 1/2 x 16 how stays are secured Sub & washers working pressure by rules 100.4 lbs diameter of stays at smallest part 2 1/2 working pressure by rules 111.5 lbs Front plates at bottom, thickness 1/8 Back plates, thickness 1/8
Greatest pitch of stays 11 1/2 x 8 3/4 working pressure by rules 148.2 lbs Diameter of tubes 3 1/2 pitch of tubes 4 3/4 x 4 1/8 thickness of tube 1 1/4
Pitch of stays to ditto 11 1/2 x 8 3/4 back 9 1/2 x 8 1/4 how stayed Stay tubes pitch of stays 11 1/4 x 10 width of water spaces 1 1/4
Diameter of Superheater or Steam chest 3-4 length 3-11 thickness of plates 1/16 description of longitudinal joint Capable diam. of rivet holes 13/16
Pitch of rivets 3/8 working pressure of shell by rules 126 lbs diameter of flue ✓ thickness of plates ✓ If stiffened with rings ✓
Distance between rings 2 1/8 dia effective end plates of superheater, or steam chest; thickness 1/4 how stayed Four stays
Superheater or steam chest; how connected to boiler Through back pipe & down 1 1/2 inch

DONKEY BOILER— Description *Behranes Patent*
 Made at *Gatehead* by whom made *Clark, Chapman & Co* when made *1813* where fixed *Stoke hole*
 Working pressure *80 lb* tested by hydraulic pressure to *160 lb* No. of Certificate *1359* fire grate area *21.64 sq ft* description of safety
 valves *Spring* No. of safety valves *one* area of each *11.07 sq in* if fitted with easing gear *yes* if steam from main boilers can
 enter the donkey boiler *No* diameter of donkey boiler *6.0"* length *13.0"* description of riveting *double lap*
 Thickness of shell plates *9/16* diameter of rivet holes *15/16* whether punched or drilled *punched* pitch of rivets *3 3/8* lap of plating *4 7/8*
 percentage of strength of joint *1/2* thickness of crown plates *9/16* stayed by *Five gussets*
 Radius of furnace, top *2 1/2* bottom *5.3"* length of furnace *-* thickness of plates *9/16* description of joint *Single lap*
 Thickness of furnace crown plates *9/16* stayed by *Spherical* working pressure of shell by rules *92 lb*
 Working pressure of furnace by rules *80 lb* diameter of uptake *20 x 16* thickness of plates *9/16* thickness of water tubes *-*
 Above particulars of donkey boiler are copied from report herewith attached received from Society's Surveyor at *Stoke*
 SPARE GEAR. State the articles supplied: *Propeller, two connecting rod top and bottom ends, two*
connecting rod bottom end bolts & nuts, two main bearing bolts, one set of coupling
one set of large & small pump valves, one set of piston springs, a quantity of bolts
& nuts assorted, pieces of iron of various sizes & other spare gear also spare
crank & propeller shafts
 The foregoing is a correct description,
Robt Blair Esq Manufacturers of Engines & Steam Boilers only

General Remarks (State quality of workmanship, opinions as to class, &c.)

Material & workmanship good.
Furnace crown plates, back tube plates, combustion
chamber plating, steam dome ends & all rivets in main
boilers are of steel. The plates manufactured by
A. Chillo, Motherwell & the joint bars by J. W.
Deardmore. Back head.

The Machinery & Boilers have been constructed
under Special Survey & are in good order & safe
working condition & in my opinion eligible for the
*Notification * L. M. C. 1.84 in the Register Book*

It is submitted that this
vessel is eligible to have
the notification & L. M. C.
recorded M 11/2/84

The amount of Entry Fee . £ 2 : : received by me,
 Special . £ 32 : : *Paul Tide*
 Donkey Boiler Fee . £ : : *Letter attached*
 Certificate (if required) . £ : : 18
 To be sent as per margin.
 (Travelling Expenses, if any, £ 1. 10 : :)

Committee's Minute

TUESDAY 12 FEB 1884

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



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Foundation