

REPORT ON MACHINERY.

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Port of Hewcastle
Survey held at Hewcastle Date, first Survey 14th May 89 Last Survey 25th Octy 90
(Number of Visits 37) Tons 2443
on the S.S. "Hornby Grange" Built at Hewcastle By whom built Righam Richardson When built 1889
made at Hewcastle By whom made Righam Richardson & Co when made 1890
made at do By whom made do when made 1890
Horse Power 400 Owners Donder & Co. Port belonging to London

INES, &c.—
tion of Engine Triple expansion Surface Condensing
er of Cylinders 24.37862 Length of Stroke 42 No. of Rev. per minute 70 Point of Cut off, High Pressure .68 Low Pressure .65
ter of Screw shaft 11 1/2 Diam. of Tunnel shaft 11 Diam. of Crank shaft journals 11 1/2 Diam. of Crank pin 11 1/2 size of Crank webs 23 1/2 x 8
ter of screw 14.9 Pitch of screw 15.6 to 19.9 No. of blades 4 state whether moveable no total surface 75 sq
f Feed pumps 2 diameter of ditto 3 1/4 Stroke 24 Can one be overhauled while the other is at work yes
f Bilge pumps 2 diameter of ditto 4 Stroke 24 Can one be overhauled while the other is at work yes
do they pump from Feed from hot well. Bilge from tanks hold. engine space & Sea
f Donkey Engines 2 Size of Pumps 4 1/2 x 9 x 8 x 10 Where do they pump from Feed from hot well
allast from tanks engine space hold. after cool to Sea
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
of bilge injections 1 and sizes 4" Are they connected to condenser, or to circulating pump Circulating Pump
are the pumps worked from the Condenser on after engine
all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks Both
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 At line
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
at pipes are carried through the bunkers none How are they protected -
all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times yes
the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges yes
en were stern tube, propeller, screw shaft, and all connections examined in dry dock yes
the screw shaft tunnel watertight - and fitted with a sluice door yes worked from upper platform

ILERS, &c.—
mber of Boilers 3 Description Cylindrical Single ended Whether Steel or Iron Steel
orking Pressure 150 Tested by hydraulic pressure to 300 lbs Date of test 15.11.89 of Cu. 3044
scription of superheating apparatus or steam chest none
n each boiler be worked separately yes Can the superheater be shut off and the boiler worked separately -
o. of square feet of fire grate surface in each boiler 63 Description of safety valves Spring No. to each boiler 2
rea of each valve 8.3 Are they fitted with easing gear yes No. of safety valves to superheater - area of each valve -
re they fitted with easing gear - Smallest distance between boilers and bunkers or woodwork 12" Diameter of boilers 14.6
length of boilers 10.6 description of riveting of shell long. seams S. B. Straps circum. seams Lap joint Thickness of shell plates 1 1/8
diameter of rivet holes 1 1/8 x 1 1/2 whether punched or drilled Drilled pitch of rivets 8 1/2" Lap of plating 22 1/2 x 14 1/2
ercentage of strength of longitudinal joint 84.78 working pressure of shell by rules 150 size of manholes in shell 16 x 12
of compensating rings 7 1/2 x 1 3/8 No. of Furnaces in each boiler 3
tside diameter 37" length, top 6.6 bottom 7.0 thickness of plates 1 1/8 description of joint Welded if rings are fitted yes
reatest length between rings 9" working pressure of furnace by the rules 150 combustion chamber plating, thickness, sides 5/8 back 5/8 top 5/8
ch of stays to ditto, sides 8 1/2 x 8 1/2 back 8 1/2 top 8 1/2 If stays are fitted with nuts or riveted heads nuts working pressure of plating by
rules 150 Diameter of stays at smallest part 1 1/8" working pressure of ditto by rules 150 end plates in steam space, thickness 1"
Pitch of stays to ditto 15 1/2" how stays are secured by Washers working pressure by rules 150 diameter of stays at
smallest part 2 1/4" working pressure by rules 150 Front plates at bottom, thickness 1/2" Back plates, thickness 1 1/8"
Greatest pitch of stays 11 1/8" working pressure by rules 150 Diameter of tubes 3 1/2 pitch of tubes 4 1/2" thickness of tube
plates, front 1 1/8" back 2 1/4" how stayed by stays pitch of stays no plan width of water spaces 5 1/2"
Diameter of Superheater or Steam chest none 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 -

8/3/90
Report sent to London 3/3/90 sent to
Description of furnaces
Unaltered

DONKEY BOILER—

Description *Cylindrical Single ended*
 Made at *Swansea* by whom made *Wigham Richardson & Co* when made *Jan 5 90* where fixed *In Deck*
 Working pressure *80 lbs* tested by hydraulic pressure to *160* No. of Certificate *3045* fire grate area *23.8* description of safety
 valves *Spring* No. of safety valves *2* area of each *5.9* if fitted with easing gear *Yes* if steam from main boilers *Yes*
 enter the donkey boiler *No* diameter of donkey boiler *8.0* length *8.0* description of riveting *to B. Sharp Dr*
 Thickness of shell plates *7/16* diameter of rivet holes *5/8* whether punched or drilled *Drilled* pitch of rivets *2 1/2 in* lap of plating *1*
 per centage of strength of joint *75* thickness of crown plates *3/4* stayed by *4 Steel Stays 1 1/2 in off*
 Diameter of furnace, top *3' 4"* bottom *2' 4"* length of furnace *5' 4"* thickness of plates *3/8* description of joint *Butt Stays*
 Thickness of furnace crown plates *1/2* stayed by *18 Laminated Stays* working pressure of shell by rules *80 lbs*
 Working pressure of furnace by rules *85* diameter of uptake *10 in* thickness of plates *3/8* thickness of water tubes *Ordinary*

SPARE GEAR. State the articles supplied: *2 Main bearing bolts & nuts. 2 top end bolts & nuts. 2 bottom end bolts & nuts. 1 Set of shaft coupling bolts & nuts. 1 Set of crank shaft. Propeller. 1 Set of feed valves. 1 Set of high valves. Piston, Patent. Nuts & bolts & iron assorted.*
 The foregoing is a correct description,
 Manufacturer. *Wigham Richardson & Co*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The machinery of this vessel has been specially surveyed during construction the materials and workmanship found and render the vessel eligible to have the Record + L.M.C. 2-90 in the Register Book of the Society.*

Heating Surface in (3) boilers = *5910* sq
 H.P. as per rule = *321 H.P.*

It is submitted that this vessel to have + L.M.C. 2-90 recorded.

The amount of Entry Fee .. £ 3 : - : - *received by me,*
 Special .. £ 36 : 1 : -
 Donkey Boiler Fee .. £ - : - : -
 Certificate (if required) .. £ gratis : - : - *13/3/90*
 To be sent as per margin.
 (Travelling Expenses, if any, £)

Committee's Minute **FRIDAY 14 MARCH 1890**

+ Lmb 2/90

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

