

REPORT ON MACHINERY.

Port of WEST HARTLEPOOL

1HUR, 16 MAR 1899

Received at London Office

No. in Survey held at HartlepoolDate, first Survey 26th May 1898Last Survey March 11th 1899

Reg. Book.

(Number of Visits 76)Gross 3507Net 2245When built 1899No. in Survey held at Hartlepool
Reg. Book. Sup. 28 on the Steel S.S. 'Degama'Master Sheldrake Built at West Hartlepool By whom built Furness, Withy & Co. Ltd.Engines made at Hartlepool By whom made J. Richardson & Sons Ltd. when made 1899Boilers made at Hartlepool By whom made J. Richardson & Sons Ltd. when made 1899Registered Horse Power 240 Owners Elder Dempster & Co. Port belonging to LiverpoolNom. Horse Power as per Section 28 241Is Electric Light fitted no

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders three No. of Cranks three

Diameter of Cylinders 23½ - 38 - 64 Length of Stroke 42 Revolutions per minute 60 Diameter of Screw shaft as per rule 11.9"
as fitted 12"

Diameter of Tunnel shaft as per rule 10.8" Diameter of Crank shaft journals 11¾" Diameter of Crank pin 12½" Size of Crank webs 8 x 19½"
as fitted 11"

Diameter of screw 16 - 6" Pitch of screw 16 - 0" No. of blades 4 State whether moveable no Total surface 45 sq. ft.

No. of Feed pumps two Diameter of ditto 2¾" Stroke 27" Can one be overhauled while the other is at work Yes

No. of Bilge pumps two Diameter of ditto 3¾" Stroke 27" Can one be overhauled while the other is at work Yes

No. of Donkey Engines two Sizes of Pumps Feed 4x6 duplex, 10x9" No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room Four 3½" dia In Holds, &c. ten. — One 2½" dia to fore peak, two 3½" dia.
to No. 1 hold, two 3½" dia to No. 2 hold, two 3½" dia to No. 3 hold, two 3½" dia to No. 4 hold, & one 2½" to after peak & hold.

No. of bilge injections one sizes 5 Connected to condenser, or to circulating pump per pump Is a separate donkey suction fitted in Engine room & size Yes 3½"

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 none

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 bilges Yes.

When were stern tube, propeller, screw shaft, and all connections examined in dry dock Nov vessel Is the screw shaft tunnel watertight Yes

Is it fitted with a watertight door Yes worked from upper platform

BOILERS, &c.— (Letter for record S) Total Heating Surface of Boilers 4047 sq. ft. Is forced draft fitted no

No. and Description of Boilers Two single ended. byl. Mult. Working Pressure 170 lbs. Tested by hydraulic pressure to 340 lbs.

Date of test 8.10.98 Can each boiler be worked separately Yes Area of fire grate in each boiler 46 sq. ft. No. and Description of safety valves to each boiler two. Spring direct. Area of each valve 7.07 sq. in. Pressure to which they are adjusted 175 lbs. Are they fitted with easing gear Yes Smallest distance between boilers or uptakes and bunkers or woodwork 16" Mean diameter of boilers 15 - 3"

Length 10 - 6" Material of shell plates steel Thickness 1½" Description of riveting: circum. seams double long. seams treble

Diameter of rivet holes in long. seams 1¾" Pitch of rivets 8½" Lap of plates or width of butt straps 19½"

Per centages of strength of longitudinal joint rivets 85.9 plate 85.6 Working pressure of shell by rules 173 lbs. Size of manhole in shell 13" x 16½"

Size of compensating ring 30 x 30 x 1½" No. and Description of Furnaces in each boiler 3 Morison Material steel Outside diameter 47½"

Length of furnace top 6 - 10" Thickness of plates crown 9" Description of longitudinal joint weld No. of strengthening rings ✓
bottom 9"

Working pressure of furnace by the rules 184.5 lbs. Combustion chamber plates: Material steel Thickness: Sides 19/32" Back 19/32" Top 19/32" Bottom 15/16"

Pitch of stays to ditto: Sides 9 x 7½" Back 8 x 8½" Top 8½" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 176 lbs.

Material of stays steel Diameter at smallest part 1½" Area supported by each stay 69 sq. in. Working pressure by rules 172 lbs. End plates in steam space: Material steel Thickness 1" Pitch of stays 16 x 16½" How are stays secured double nuts Working pressure by rules 182 lbs. Material of stays steel

Diameter at smallest part 2½" Area supported by each stay 264 sq. in. Working pressure by rules 170.5 lbs. Material of Front plates at bottom steel

Thickness 7/8" Material of Lower back plate steel Thickness 3/4" Greatest pitch of stays 12½" Working pressure of plate by rules 176 lbs.

Diameter of tubes 3½" Pitch of tubes 4¾" Material of tube plates steel Thickness: Front 31/32" Back 3/4" Mean pitch of stays 11½"

Pitch across wide water spaces 14½" Working pressures by rules F. 171. 12.200 lbs. Girders to Chamber tops: Material steel Depth and thickness of girder at centre 7½" x 1¾" Length as per rule 30 ft. Distance apart 8½" Number and pitch of Stays in each two. 8½"

Working pressure by rules 171.5 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 ✓

HPL 384-0109

DONKEY BOILER— Description *Single ended. Cyl. Mult. two plain furnaces*
 Made at *Stockton* By whom made *Siddons & Co Ltd* When made *9.1.99* Where fixed *Stokehold*
 Working pressure *90 lbs* tested by hydraulic pressure to *180 lbs* No. of Certificate *1866* Fire grate area *28 sq ft* Description of safety valves *Spring direct.*
 No. of safety valves *2* Area of each *5.9 sq ft* Pressure to which they are adjusted *93 lbs*. If fitted with easing gear *Yes*. If steam from main boilers can enter the donkey boiler *No* Diameter of donkey boiler *9'-3"* Length *9'-0"* Material of shell plates *steel* Thickness *1 1/2"*
 Description of riveting long. seams *treble riv. lap.* Diameter of rivet holes *7/8"* Whether punched or drilled *drilled* Pitch of rivets *4 1/2"*
 Lap of plating *6 1/2"* Per centage of strength of joint *85* Rivets *85* Thickness of shell *end* plates *1 1/2"* Radius of do. *pitch* No. of Stays to do. *12 1/2 x 18"*
 Dia. of stays *2 1/2"* Diameter of furnace *Top 35"* *Bottom 32"* Length of furnace *10'* Thickness of furnace plates *1 1/2"* Description of joint *D. butt strap* Thickness of *furnace crown* plates *9/16"* Stayed by *1 1/2" off stays 9" pitch* Working pressure of shell by rules *91 lbs*
 Working pressure of furnace by rules *96 lbs* Diameter of *uptake* *3"* Thickness of *uptake* plates *1 1/2" x 9/16"* Thickness of *stay* tubes *5/16"*

SPARE GEAR. State the articles supplied:— *Two con. rod top & two con. rod bottom end bolts & nuts; Two main bearing & one set of coupling bolts, one set of feed & bilge pump valves, Assorted bolts & nuts, Iron various sizes, One propeller shaft, Two safety valve springs. Ten Condensers & six boiler tubes, One I. P. & One L. P. valve spindle, One air pump bucket & rod, & One set Brass valves & guards for air pump.*
 The foregoing is a correct description,
J. H. HARRISON & SONS, LIMITED Manufacturer.
J. H. Harrison

Dates of Survey { During progress of work in shops - 1898 May 26, 27, June 6, 7, 8, 9, 10, 13, 15, 16, 21, 22, 23, 24, 27, 28, 29, 30, July 1, 2, 4, 5, 12, 14, 19, 20, 22, 25, 26, 27, 29, 30, Aug 4, 5, 6, 9, 10, 12, 15, 16, 17, 18, 19, 20, 22, 23, 25, 26, 27, 29, 31, 1st Sept 1, 3, 5, 6, 9, 14, 16, 19, 20, 21, 22, 30, Oct 3, 8, 10, 15, 21, 23, 24, Dec 7, 9, 29, 1899 Jan 13, 19, Mar 4, 2, 11.
 while building { During erection on board vessel -
 Total No. of visits *76*

General Remarks (State quality of workmanship, opinions as to class, &c.)
ENGINES—Length of stern bush *4'-0"* Diameter of crank shaft journals *as per rule 11 3/4"* Diameter of thrust shaft under collars *12 1/2"*
BOILERS—Range of tensile strength *28-32* Are they welded or flanged *no* **DONKEY BOILERS**—No. *one* Range of tensile strength *24-32*
 Is the approved plan of main boiler forwarded herewith *Yes* Is the approved plan of donkey boiler forwarded herewith *No*

The main steam pipes have been tested by hydraulic pressure to 340 lbs. per sq. in. and found tight.
 The engines and boilers of this vessel, have been constructed under Special Survey, material and workmanship good, when completed they were tried under steam, safety valves adjusted, and found to work well, are now in safe and efficient working condition, and eligible in my opinion to have *L.M.C. 3.99* recorded in the Register Book.

It is submitted that
 this vessel is eligible for
THE RECORD. L.M.C. 3.99.

A.C.H.
17.3.99.
17.3.99
Wmish
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee. £ *2* :
 Special £ *33* : *11*
 Donkey Boiler Fee £ :
 Travelling Expenses (if any) £ :
 When applied for, *13.3.1899*
 When received, *15.3.99*

Committee's Minute *FRI, 17 MAR 1899*
 Assigned *+ L.M.C. 3.99*