

REPORT ON MACHINERY.

Port of WEST HARTLEPOOL.

THUR, 16 MAR 1899

Received at London Office

No. in Survey held at Hartlepool

Date, first Survey 26th May 1898 Last Survey March 11th 1899

Reg. Book.

(Number of Visits 76)

Tons { Gross 3507
Net 2245
When built 1899

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 1899

Boilers made at Hartlepool By whom made J. Richardson & Sons Ltd. when made 1899

Registered Horse Power 240 Owners Elder Dempster & Co. Port belonging to Liverpool

Nom. Horse Power as per Section 28 241 Is Electric Light fitted no

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

Diameter of Cylinders 23 1/2" - 38" - 64" Length of Stroke 42" Revolutions per minute 60 Diameter of Screw shaft as per rule 11.9"

Diameter of Tunnel shaft as per rule 10.8" Diameter of Crank shaft journals 11 3/4" Diameter of Crank pin 12 1/2" Size of Crank webs 8" x 19 1/8"

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 2 3/4" Stroke 27" Can one be overhauled while the other is at work Yes

No. of Bilge pumps two Diameter of ditto 3 3/4" Stroke 27" Can one be overhauled while the other is at work Yes

No. of Donkey Engines Two Sizes of Pumps Feed 4x6 duplex, Ballast 10x9 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Four 3 1/2" dia In Holds, &c. Ten. - One 2 1/2" dia to fore peak, Two 3 1/2" dia. to No 1 hold, Two 3 1/2" dia to No 2 hold, Two 3 1/2" dia to No 3 hold, Two 3 1/2" dia to No 4 hold, & One 2 1/2" to after peak & hold.

No. of bilge injections one sizes 5 Connected to condenser, or to circulating pump no Is a separate donkey suction fitted in Engine room & size Yes 3 1/2"

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 New 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 by Mull. 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 1 1/16" Description of riveting: circum. seams double long. seams treble

Diameter of rivet holes in long. seams 1 1/32" Pitch of rivets 8 1/2" Lap of plates or width of butt straps 19 1/2"

Percentages of strength of longitudinal joint 85.9 Working pressure of shell by rules 173 lbs. Size of manhole in shell 13" x 16 1/2"

Size of compensating ring 30 x 30 x 1 1/16" No. and Description of Furnaces in each boiler 3 Morrison Material steel Outside diameter 47 3/4"

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

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 7 1/2" Back 8" x 8 1/2" Top 8 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 176 lbs.

Material of stays steel Diameter at smallest part 1 5/8" Area supported by each stay 69 sq. in. Working pressure by rules 142 lbs. End plates in steam space: Material steel Thickness 1" Pitch of stays 16" x 16 1/2" How are stays secured double nuts & washers Working pressure by rules 182 lbs. Material of stays steel

Diameter at smallest part 2 3/8" 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 12 1/2" Working pressure of plate by rules 176 lbs.

Diameter of tubes 3 1/2" Pitch of tubes 4 3/4" Material of tube plates steel Thickness: Front 31/32" Back 3/4" Mean pitch of stays 11 1/8"

Pitch across wide water spaces 14 1/2" Working pressures by rules F. 171. 12.200 lbs. Girders to Chamber tops: Material steel Depth and thickness of girder at centre 7 1/2" x 1 3/4" Length as per rule 30 5/8" Distance apart 8 1/2" Number and pitch of Stays in each Two 8 1/2"

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 ✓

If not, state whether, and when, one will be sent? Is a Report also sent on the Hull of the Ship?



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" x 2 1/2"*
 Lap of plating *6 5/8"* Per centage of strength of joint Rivets *85* Thickness of shell *end* plates *1 1/2"* Radii of do. *pitch* No. of Stays to do. *12 1/2 x 18"*
 Dia. of stays. *2 1/2" off.* Diameter of furnace *Top 35" Bottom 17"* Length of furnace *40"* Thickness of furnace plates *1 5/32"* Description of joint *D. butt strap* Thickness of furnace *end* 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* tube *3"* Thickness of *uptake* plates *1 1/2" x 9/16"* Thickness of *stay* tubes *5/16"*

SPARE GEAR. State the articles supplied:— *Two iron rod top & iron 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 S.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. SIDDONS & SONS, LIMITED, Manufacturer.
 J. H. Siddons

Dates of Survey: During progress of work in shops— *Director 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.*
 During erection on board vessel— *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.*
 while building— *Nov. 18, 21, 23, 24. Dec. 7, 9, 29. 1899. Jan. 13, 19. Mar. 2, 11.*
 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

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, *15.3.1899*

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



WEST HARTLEPOOL

Certificate (if required) to be sent to
 The Surveyors are requested not to write on or delay the space for Committee's Minutes.