Rpt. 4.

REPORT ON MACHINERY. No. 67390.

Port of London

Received at London Office 1 Jun 1905

No. in Reg. Book. 63 Survey held at London Date, first Survey Dec 13/1904 Last Survey May 25 1905 (Number of Visits 38)

upon the Engines No. 775 Boiler 776 for the S.S. "Boydell" Tons Gross / Net

Master Built at London By whom built Thames Iron Works Shg. Co. Ld When built

Engines made at London By whom made Thames Iron Works Shg. Co. Ld when made 1905

Boilers made at London By whom made do: when made 1905

Registered Horse Power Owners London County Council Port belonging to London

Nom. Horse Power as per Section 28 53 ✓ Is Refrigerating Machinery fitted no. Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Diagonal compound No. of Cylinders 2 No. of Cranks 2

Dia. of Cylinders 16 & 31 Length of Stroke 36 Revs. per minute paddle Dia. of ~~Screw~~ shaft as per rule appd. as fitted 6¾ Material of ~~screw~~ paddle shaft S

Is the screw shaft fitted with a continuous liner the whole length of the stern tube — Is the after end of the liner made water tight in the propeller boss — If the liner is in more than one length are the joints burned — If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive — If two liners are fitted, is the shaft lapped or protected between the liners appd. Length of stern bush —

Dia. of Tunnel shaft as per rule — as fitted — Dia. of Crank shaft journals as per rule appd. as fitted 6¾ Dia. of Crank pin 6¾ Size of Crank webs 4⅝ × 7¾ Dia. of thrust shaft under collars — Dia. of screw — Pitch of ~~screw~~ wheel (aside) 8–9 No. of ~~blades~~ float 8 State whether moveable feathering Total surface —

No. of Feed pumps one ✓ Diameter of ditto 3½ Stroke 10 Can one be overhauled while the other is at work —

No. of Bilge pumps one ✓ Diameter of ditto 3½ Stroke 10 Can one be overhauled while the other is at work —

No. of Donkey Engines one Sizes of Pumps 4¼" 3¼ m. × 8" stroke No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room one 2" engine ✓ suction ✓ one 2" donkey ✓ In Holds, &c. one 2" forward ✓ 2" aft ✓

No. of bilge injections one sizes 3" ✓ Connected ~~to condenser, etc.~~ to circulating pump — Is a separate donkey suction fitted in Engine room & size yes–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 —

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 — Is the screw shaft tunnel watertight —

Is it fitted with a watertight door — worked from —

BOILERS, &c.— (Letter for record S) Total Heating Surface of Boilers 700 □′ Is forced draft fitted yes

No. and Description of Boilers one S. E. return tube Working Pressure 115 lbs Tested by hydraulic pressure to 230 lbs

Date of test 13.3.05 Can each boiler be worked separately — Area of fire grate in each boiler 26 sq. ft. No. and Description of safety valves to each boiler 2 – direct spring Area of each valve 7.07□″ Pressure to which they are adjusted 115 Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 12" Mean dia. of boilers 9–0 Length 8–9 Material of shell plates S

Thickness 9/16" Range of tensile strength 29–32 Are they welded or flanged no Descrip. of riveting: cir. seams single long. seams treble ~~butt~~ lap.

Diameter of rivet holes in long. seams ¾ Pitch of rivets 4 5/32 ~~Lap of plates~~ width of butt straps 12"

Per centages of strength of longitudinal joint rivets 83.7 plate 82.0 Working pressure of shell by rules 119 Size of manhole in shell 16 × 12

Size of compensating ring M.S. Neil's ring No. and Description of Furnaces in each boiler 2 plain Material S Outside diameter 34 5/8

Length of plain part top 70 bottom 62½ Thickness of plates crown 9/16 bottom 9/16 Description of longitudinal joint welded No. of strengthening rings none

Working pressure of furnace by the rules 142 Combustion chamber plates: Material S Thickness: Sides ½ Back ½ Top 9/16 Bottom ½

Pitch of stays to ditto: Sides 8¼ × 7¾ Back 8⅝ × 7⅞ Top 9¼ × 8¼ If stays are fitted with nuts or riveted heads nuts Working pressure by rules 120

Material of stays S ~~Diameter~~ area at smallest part .93 Area supported by each stay 64□″ Working pressure by rules 116 End plates in steam space:

Material S Thickness 11/16" Pitch of stays 17½ × 12½ How are stays secured Rr. washer & nuts Working pressure by rules 115 Material of stays S

~~Diameter~~ area at smallest part 2.87 Area supported by each stay 218□″ Working pressure by rules 133 Material of Front plates at bottom S

Thickness 11/16" Material of Lower back plate S Thickness 11/16" Greatest pitch of stays 11¾ Working pressure of plate by rules 115

Diameter of tubes 2½ Pitch of tubes 3½ Material of tube plates S Thickness: Front 11/16" Back 11/16" Mean pitch of stays 11.4

Pitch across wide water spaces 12½ Working pressures by rules 116 Girders to Chamber tops: Material S Depth and thickness of girder at centre 6½ × 5/8 – 2 Length as per rule 25" Distance apart 9¼ Number and pitch of Stays in each 2 – 8¼

Working pressure by rules 135 Superheater or Steam chest; how connected to boiler — 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?

DONKEY BOILER— No. ..... Description .....

Made at ..... By whom made ..... When made ..... Where fixed .....

Working pressure ..... tested by hydraulic pressure to ..... No. of Certificate ..... Fire grate area ..... Description of safety valves .....

No. of safety valves ..... Area of each ..... Pressure to which they are adjusted ..... If fitted with easing gear ..... If steam from main boilers can enter the donkey boiler ..... Dia. of donkey boiler ..... Length ..... Material of shell plates ..... Thickness ..... Range of tensile strength ..... Descrip. of riveting long. seams ..... Dia. of rivet holes ..... Whether punched or drilled ..... Pitch of rivets .....

Lap of plating ..... Per centage of strength of joint { Rivets ..... / Plates ..... } Thickness of shell crown plates ..... Radius of do. ..... No. of Stays to do. .....

Dia. of stays. ..... Diameter of furnace Top ..... Bottom ..... Length of furnace ..... Thickness of furnace plates ..... Description of joint ..... Thickness of furnace crown plates ..... Stayed by ..... Working pressure of shell by rules .....

Working pressure of furnace by rules ..... Diameter of uptake ..... Thickness of uptake plates ..... Thickness of water tubes .....

SPARE GEAR. State the articles supplied :— .....

The foregoing is a correct description,

For THE THAMES IRONWORKS, SHIP-BUILDING AND ENGINEERING COMPANY, LIMITED.

A Warriner Manager

Manufacturer.

Dates of Survey while building — During progress of work in shops: 1904 Dec 13 16 30 1905 ~~Jan 10 11 18 25 26 31~~ Feb 6 8 13 14 17 18 20

During erection on board vessel: Feb 22 23 Mar 2 7 8 15 16 17 23 Apl 1 7 9 18 20 27 May 3 4 6 9 17 30 Jne 5

Total No. of s .....

Is the approved plan of main boiler forwarded herewith Yes

" " " donkey " " " —

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

The engnes and boiler have been built under special survey. The material has been tested in accordance with the rule requirements and the main steam pipes tested to 290 lbs and found sound and tight.

The boiler has been tested by water to twice the working pressure with satisfactory results.

The safety valves adjusted under steam and the engnes have been seen working.

The workmanship is good.

This vessels machinery is eligible in my opinion for record of + LMC 5.05.

Boiler stamped: No. 776 611 LLOYD'S TEST 230 LBS 13.3.05 C.M.

It is submitted that this vessel is eligible for THE RECORD + L.M.C 5.05 F.D. ELEC: LIGHT.

W.S. 2.6.05

H.S. 2.6.05

The amount of Entry Fee..	£	1	0	0
Special	£	8	0	0
Donkey Boiler Fee	£			
Travelling Expenses (if any)	£			

When applied for, 31/5/1905

When received, 3.6.1905

C. Martell.

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

Committee's Minute FRI. 2 JUN 1905

Assigned + LMC 5.05

MACHINERY CERTIFICATE WRITTEN.

Certificate (if required) to be sent to .....

(The Surveyors are requested not to write on or below the space for Committee's Minute.)