Rpt. 4.

REPORT ON MACHINERY.

No. 67392.

Port of London

Received at London Office 1 Jun 1905

No. in Reg. Book. Survey held at London. Date, first Survey Dec 13/1902 Last Survey May 25 1905 (Number of Visits 232.)

Engines on the Engines No. 770 for the S.S. Vanbrugh

Boilers No. 771

Master Built at London By whom built Thames Iron Works Co. When built Tons Gross Net

Engines made at London By whom made The Thames Iron Works Shipbuilding & Engineering Co. Ltd 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 about 53 Dia. of ~~Screw~~ shaft as per rule paddle approved as fitted 6¾" paddle Material of ~~screw~~ shaft steel

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 — Length of stern bush —

Dia. of Tunnel shaft as per rule as fitted Dia. of Crank shaft journals as per rule approved as fitted 6¾" Dia. of Crank pin 6¾" Size of Crank webs 4"5/8 x 7¾" Dia. of thrust shaft under collars Dia. of ~~screw~~ wheel 8'-9" (axis) Pitch of screw No. of ~~blades~~ 8 State whether movable 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" x 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" forwd. and 2" aft.

No. of bilge injections one sizes 3" Connected ~~to condenser,~~ 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 sq: ft Is forced draft fitted yes

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

Date of test 20.2.05 Can each boiler be worked separately — Area of fire grate in each boiler 25 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 lb 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 steel

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

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

Size of compensating ring M.c 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" x 7¾" Back 8 3/8" x 7 5/8" Top 9¼" x 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" x 12½" How are stays secured Rd. washer d. 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" x ⅝" — 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

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

[2000—7-02—Copyable Ink.]

WS13-0268

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 :—

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

The foregoing is a correct description,

Manufacturer. Manager.

Dates of Survey while building — During progress of work in shops: 1904 Dec 13. 16. 30. Jan 10 11 18 25. 26 31 Feb 6. 8 13 14 17 18 20 22. 23
During erection on board vessel: March 15. 23. April 7 8 9 08 May 3 4 6 9 17 22 25.
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 engines and boiler have been built under special survey. The material has been tested in accordance with the rule requirements. The main steam pipes have been tested by water to 390 lbs, and the boiler to 230 lbs, and they were found tight and sound at these pressures.

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

The workmanship throughout is good

This vessel's machinery is eligible in my opinion for record of + LMC 5. 05.

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

Boiler stamped: No: 771 603 LLOYD'S TEST 230 LBS 20.2.05 C.M

Ems 2.6.05

A.S. 2.6.05

The amount of Entry Fee.. £ 1 : 0 : 0 When applied for, ...19....
Special .. .. .. £ 8 : 0 : 0
Donkey Boiler Fee .. .. £ : :
Travelling Expenses (if any) £ : : When received, 3.6.1905

C. Markell

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.)