REPORT ON MACHINERY.

No. 14474 — Received at London Office: Rec'd 20th M.A.K. 1884

No. in Reg. Book. 44 — Survey held at Newcastle — Date, first Survey 5th October/83 — Last Survey 21st March 1884 (Number of Visits 12)

on the Screw Steamer Rutland — Tons 688 / 429

Master H. Price — Built at Alfshon — By whom built Slipby & Eng de Maas — When built 1884

Engines made at Newcastle — By whom made Wigham Richardson — when made 1884

Boilers made at Do — By whom made Do — when made 1884

Registered Horse Power 95 — Owners Green Holland & Sons — Port belonging to London

ENGINES, &c.—

Description of Engines: Inverted direct acting compound surface condensing

Diameter of Cylinders 25 & 48 — Length of Stroke 33 — No. of Rev. per minute 72 — Point of Cut off, High Pressure 45% — Low Pressure 43%

Diameter of Screw shaft $8\frac{3}{4}$ — Diam. of Tunnel shaft $8\frac{1}{4}$ — Diam. of Crank shaft journals $8\frac{3}{4}$ — Diam. of Crank pin 9 — size of Crank webs $11 \times 5\frac{1}{2}$

Diameter of screw 11 – 9 — Pitch of screw 16 – 6 — No. of blades 4 — state whether moveable no — total surface 35 ft

No. of Feed pumps 2 — diameter of ditto $2\frac{3}{4}$ — Stroke 19 — Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 — diameter of ditto $2\frac{3}{4}$ — Stroke 19 — Can one be overhauled while the other is at work yes

Where do they pump from: Engine space 3 suctions, Tunnel well 1 suction, All tanks, Sea,

No. of Donkey Engines 2 — Size of Pumps 8 × 10 & 3 × 6 — Where do they pump from: Bilges as above, Engine space tank 3 suction, Aft hold tanks & fore hold tanks 1 suction each, Sea

Are 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

No. of bilge injections 1 — and sizes 4 — Are they connected to condenser, or to circulating pump Cir

How are the pumps worked: Lever on condenser

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 at line

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 — — How are they protected —

Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times yes

Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges yes

When were stern tube, propeller, screw shaft, and all connections examined in dry dock new

Is the screw shaft tunnel watertight yes — and fitted with a sluice door yes — worked from top platform of engine room

BOILERS, &c.—

Number of Boilers One — Description Cyl Singleender — Whether Steel or Iron Steel.

Working Pressure 90 — Tested by hydraulic pressure to 180 — Date of test 26th October 1883

Description of superheating apparatus or steam chest none

Can each boiler be worked separately — — Can the superheater be shut off and the boiler worked separately —

No. of square feet of fire grate surface in each boiler 52·8 — Description of safety valves Spring — No. to each boiler 2

Area of each valve 14·19 □" — Are they fitted with easing gear yes — No. of safety valves to superheater — — area of each valve —

Are they fitted with easing gear — — Smallest distance between boilers and bunkers or woodwork 12" — Diameter of boilers 13 – 3

Length of boilers 10 – 6 — description of riveting of shell long. seams Treble Laps — circum. seams Double Laps — Thickness of shell plates $\frac{13}{16}$

Diameter of rivet holes $1\frac{3}{16}$ — whether punched or drilled Drilled — pitch of rivets $4\frac{11}{16}$ — Lap of plating 8

Per centage of strength of longitudinal joint 76% — working pressure of shell by rules 93 — size of manholes in shell 15 × 11

Size of compensating rings $6\frac{1}{2}" \times \frac{7}{8}$ — No. of Furnaces in each boiler 3

Outside diameter 39" — length, top 7 – 0 — bottom 7 – 0 — thickness of plates $\frac{17}{32}$ — description of joint D Strap & Butt — if rings are fitted half

Greatest length between rings 7 – 0 — working pressure of furnace by the rules 92 — combustion chamber plating, thickness, sides $\frac{1}{2}$ — back $\frac{1}{2}$ — top $\frac{1}{2}$

Pitch of stays to ditto, sides $8\frac{3}{8}$ — back $8\frac{3}{8}$ — top Bd 2 – 0 — If stays are fitted with nuts or riveted heads Nuts & rivets — working pressure of plating by rules 91.5 — Diameter of stays at smallest part $1\frac{1}{4}$ — working pressure of ditto by rules 110 — end plates in steam space, thickness $\frac{13}{16}$

Pitch of stays to ditto $16\frac{1}{2} \times 15"$ — how stays are secured D nuts — working pressure by rules 98 — diameter of stays at smallest part $2\frac{1}{16}$ — working pressure by rules 140 — Front plates at bottom, thickness $\frac{9}{16}$ — Back plates, thickness $\frac{5}{8}$

Greatest pitch of stays 9 — working pressure by rules 120 — Diameter of tubes $3\frac{1}{2}"$ — pitch of tubes $4\frac{1}{2}"$ — thickness of tube plates, front $\frac{11}{16}$ — back $\frac{11}{16}$ — how stayed Tubes — pitch of stays $9\frac{1}{2}$ — width of water spaces 6

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~~

(Right margin, vertical:) Report rec'd 28/3/84 and ... 25

(Right margin, vertical:) Tracings of Main & Donkey Boilers were forwarded also results of Steel test

DONKEY BOILER— Description Vertical 2 cross tubes in furnace.

Made at Delfshaven by whom made Company de Maas when made 26-11-83 where fixed Stokehold

Working pressure 80 tested by hydraulic pressure to 160 No. of Certificate 19 fire grate area 13 ft description of safety valves Spring No. of safety valves 1 area of each 7 4" if fitted with easing gear yes if steam from main boilers can enter the donkey boiler no diameter of donkey boiler 5-0 length 10-0 description of riveting Double Lap

Thickness of shell plates 7/16 diameter of rivet holes 3/4 whether punched or drilled P pitch of rivets 2 3/4 lap of plating 3 7/8"

per centage of strength of joint 70% thickness of crown plates 7/16 stayed by Direct & 4 Stays

Diameter of furnace, top 3-10½ bottom 4-4 length of furnace 4-9 thickness of plates 1/2 description of joint Single Lap

Thickness of furnace crown plates 7/16 stayed by Same as drawn working pressure of shell by rules 80lbs

Working pressure of furnace by rules 80 lbs diameter of uptake 15" thickness of plates 3/8 thickness of water tubes 5/8

SPARE GEAR. State the articles supplied :— Spare gear as per list of Society's requirements,

The foregoing is a correct description,

Ingham Richardson & Co Manufacturer. Manufacturers & Boilers

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 workmanships are Good & Satisfactory and eligible in my Opinion to have the notation ✠ Lloyds. M. C 3-84 in the Society's Register Book

It is understood that this vessel is intended to have the notification & M.C

recorded HM 29/3/84

The amount of Entry Fee £ 1 : — :— received by me,
Special .. .. £14 : 5 : —
Donkey Boiler Fee .. .. £ — : — : —
Certificate (if required) £ — : — : —
To be sent as per margin.
(Travelling Expenses, if any, £ — —)

10/4/8

25th Mar 1884

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

Committee's Minute TUESDAY 1 APRIL 1884

Newcastle

Robert Edmund Taylor & Son Printers, 15, Old Street, Goswell Road, London, E.C.