REPORT ON MACHINERY.

3885

No. 3885 — No. in Reg. Book. Port of Glasgow

Survey held at Glasgow. Date, first Survey Oct. 4th 1887 Last Survey 14th March 1888 (Number of Visits 26)

Received THURS 22 MARCH 1888

on the S.S. "Tropic" Tons 1463 / 1132

Master Barber Built at Whitehaven. By whom built Whitehaven Shipbuilding Co. When built 1888

Engines made at Glasgow. By whom made Dunsmuir & Jackson when made 1888

Boilers made at Do. By whom made Do. when made 1888

Registered Horse Power 160 Owners E. C. Thin Port belonging to Liverpool.

ENGINES, &c.—

Description of Engines Inverted Direct Acting. Surface Condensing. Triple Expansion.

Diameter of Cylinders 20. 33. 54 Length of Stroke 36" No. of Rev. per minute 68 Point of Cut off, High Pressure ·74 each Low Pressure –

Diameter of Screw shaft 10¼" Diam. of Tunnel shaft 10" Diam. of Crank shaft journals 10¼" Diam. of Crank pin 10¼ size of Crank webs 13¼ × 7 3/16"

Diameter of screw 14-0 Pitch of screw 16-6 No. of blades 4 state whether moveable Solid total surface 57 sq ft

No. of Feed pumps Two diameter of ditto 3" Stroke 18" Can one be overhauled while the other is at work Yes

No. of Bilge pumps Two diameter of ditto 3" Stroke 18" Can one be overhauled while the other is at work Yes

Where do they pump from Engine Room bilges.

No. of Donkey Engines Two Size of Pumps Feed 7½ cyl. 4" pump × 9" stroke; Ballast 7½ . 8 . × 10 . Where do they pump from Ballast from Tanks, sea & bilges; Donkey from sea, bilges, hotwell & tanks.

Are all the bilge suction pipes fitted with roses Mud boxes. Are the roses always accessible Yes

No. of bilge injections One and sizes 3½" Are the sluices on Engine room bulkheads always accessible Yes.

Are they connected to condenser, or to circulating pump Circulating pump.

How are the pumps worked By levers from crosshead of Intermediate engines.

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 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 Before launched

Is the screw shaft tunnel watertight Yes and fitted with a sluice door Yes worked from Engine room at deck.

BOILERS, &c.—

Number of Boilers Two. Description Cylindrical – Multitubular Whether Steel or Iron Steel

Working Pressure 160 Tested by hydraulic pressure to 320 lbs. Date of test February 6th 1888.

Description of superheating apparatus or steam chest None.

Can each boiler be worked separately Yes Can the superheater be shut off and the boiler worked separately –

Area of square feet of fire grate surface in each boiler 41¼ sq ft Description of safety valves Direct springs No. to each boiler Two

Area of each valve 5·9 sq ins Are they fitted with easing gear Yes No. of safety valves to superheater – Are they fitted with easing gear – area of each valve –

Smallest distance between boilers and bunkers or woodwork 10"

Length of boilers 10-3" description of riveting of shell long. seams Butt. circum. seams Lap. double Diameter of boilers 12-6"

Diameter of rivet holes 1 3/32 whether punched or drilled Drilled pitch of rivets 7¼ × 3⅝ Thickness of shell plates 1 3/32

Percentage of strength of longitudinal joint 84.5 working pressure of shell by rules 160 lbs. Lap of plating Butt 15⅜

... of compensating rings McNeil's patent door – double riveted ring. size of manholes in shell 16 × 12"

... diameter 46 3/16 length, top 6-10 bottom – thickness of plates 19/32 No. of Furnaces in each boiler Two

... description of joint Weld

Greatest length between rings 9" working pressure of furnace by the rules 162 lbs. if rings are fitted Ribbed

Pitch of stays to ditto, sides 7¾ back 7¾ top 7¾ combustion chamber plating, thickness, sides 9/16" back 9/16 top 9/16

... 162 lbs. Diameter of stays at smallest part 1⅜ screw If stays are fitted with nuts or riveted heads Nuts inside working pressure of plating by rules

Pitch of stays to ditto 18 × 18 working pressure of ditto by rules 164 lbs. end plates in steam space, thickness 13/16 with 13/16 doubling

... smallest part 3" screw how stays are secured Nuts working pressure by rules 167 lbs. diameter of stays at

... working pressure by rules 165 lbs. Front plates at bottom, thickness ¾" ½" doubling strip Back plates, thickness ⅝

Greatest pitch of stays 12" working pressure by rules 160 lbs. Diameter of tubes 3¼" pitch of tubes 4½ × 4⅜" thickness of tube

... plates, front 13/16 back ¾" how stayed Stay tubes pitch of stays 15 × 8¾ 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 –

DONKEY BOILER— Description Vertical - Four cross tubes.

Made at Gateshead by whom made Clark, Chapman Parsons & Co when made 1888 where fixed In Stokehold

Working pressure 80 lbs tested by hydraulic pressure to 160 lbs No. of Certificate 2409 fire grate area 23 sq ft description of safety valves Direct acting spring No. of safety valves One area of each 9.6 sq in if fitted with easing gear if steam from main boilers can enter the donkey boiler No diameter of donkey boiler 6-6 length 12-1" (13-0 overall) description of riveting Lap double

Thickness of shell plates 7/16 diameter of rivet holes 7/8" whether punched or drilled Drilled pitch of rivets 3 5/16 lap of plating 4 1/4"

per centage of strength of joint 70% thickness of crown plates 9/16" stayed by Six steel stays 1 7/8 effective dia

Diameter of furnace, top 5-2" bottom 5-6 3/4" length of furnace 5-6" thickness of plates 9/16" description of joint Lap - single.

Thickness of furnace crown plates 9/16 stayed by As above

Three rows of stays in furnace working pressure of shell by rules 84 lbs.

Working pressure of furnace by rules 80 lbs diameter of uptake 15" iron thickness of plates 7/16" thickness of water tubes 3/8 iron.

SPARE GEAR. State the articles supplied :— Two connecting rod top & bottom end bolts & nuts - Two main bearing bolts. One set of coupling bolts - One set of Feed & Bilge pump valves. One set of Piston springs for High & Intermediate pistons Assorted bolts & nuts, iron &c. Also one propeller - one valve spindle - one eccentric strap - connecting rod bottom end brass. Two main & donkey feed check valves. 10 boiler & 20 condenser tubes. One safety valve spring - Wood ferrules for Condenser.

The foregoing is a correct description,

Manufacturer. Dunsmuir & Jackson

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

These Engines & Boilers have been constructed under special survey - they are of good material & workmanship - they have been well fitted on board - satisfactorily tested under steam, and I am of opinion they are eligible to be classed +L.M.C. 3-88 in the Register Book.

Appended hereto is the approved tracing of main boiler also one Report on Forgings and five Reports on Steel Tests.

It is submitted that this vessel's machinery is eligible to have +LMC 3.88 recorded.

[illegible]

The amount of Entry Fee .. £ 2 : - : - received by me,

Special .. £ 24 : - : -

Donkey Boiler Fee .. £ - : - : -

Certificate (if required) .. £ - : - : -

To be sent as per margin.

Travelling Expenses, if any, £ - 12/- Barrow a/c

21/3/1888

Walter E. Robson

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

Committee's Minute THURS 29 MARCH 1888

+ LMC 3/88