

REPORT ON MACHINERY.

No. 5244 (Received in London Office [Rec'd 21/1/81])
 No. in Survey held at Glasgow Date, first Survey 31st March 1880 Last Survey 31st January 1881
 Reg. Book. 2985-35
 on the S. S. Glenfruin Tons 1935-65
 Master J. Hogg Built at Glasgow When built 1880
 Engines made at Glasgow By whom made London & Glasgow Co. when made 1880
 Boilers made at " By whom made " when made 1880
 Registered Horse Power 530 Owners McGregor, Currie & Co. Port belonging to Glasgow

ENGINES, &c.—

Description of Engines Compound Inverted Direct Acting
 Diameter of Cylinders 48 & 88 Length of Stroke 4.6 No. of Rev. per minute 56 Point of Cut off, High Pressure 4.3 Low Pressure 4.0
 Diameter of Screw shaft 16 1/4 Diameter of Tunnel shaft 14 1/8 Diameter of Crank shaft journals 16 1/4 Diameter of Crank pin 16 1/4 size of Crank icebs 18 1/4 x 12
 Diameter of screw 18.0 Pitch of screw 25.6 No. of blades Four state whether moveable yes total surface 88 sq feet
 No. of Feed pumps Two diameter of ditto 5 1/2 Stroke 3 1/2 Can one be overhauled while the other is at work yes
 No. of Bilge pumps Two diameter of ditto 5 1/2 Stroke 3 1/2 Can one be overhauled while the other is at work yes
 Where do they pump from Engine Room Attached to large Hold
 No. of Donkey Engines Two Size of Pumps 5 x 10 Stroke Where do they pump from Sea. Hot well & Bilges
A Centrifugal Pump draws from Ballast Tanks and bilges
 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 one and sizes 6 Are they connected to condenser, or to circulating pump to circulating pump
 How are the pumps worked by Levers Connected to Crosshead
 Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks Valves & Cocks
 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 a little below
 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 bilge & ballast tank How are they protected by wood Casement
 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 on Ship before Ship was launched
 Is the screw shaft tunnel watertight yes and fitted with a sluice door yes worked from mid platform

BOILERS, &c.—

Number of Boilers Three Description Round Horizontal Multitubular
 Working Pressure 80 lbs Tested by hydraulic pressure to 160 lbs per sq inch Date of test 6th October 1880
 Description of superheating apparatus or steam chest Horizontal Receiver
 Can each boiler be worked separately yes Can the superheater be shut off and the boiler worked separately no
 No. of square feet of fire grate surface in each boiler 24.6 Description of safety valves Direct Spring
 No. to each boiler Two area of each valve 23.76 sq in 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 Boilers 3 feet from Deck. Tops 5" from Deck beam through
 Diameter of boilers 12.0 Length of boilers 18.0 description of riveting of shell long. seams unrolled circum. seams double
 Thickness of shell plates 3/2 diameter of rivet holes 1 1/4 in size whether punched or drilled punched pitch of rivets 4 1/4
 Lap of plating 5 per centage of strength of longitudinal joint 70 working pressure of shell by rules 89 lbs
 Size of manholes in shell 16 x 12 size of compensating rings 4 x 3 x 1/2
 No. of Furnaces in each boiler 6 outside diameter 2.11 1/2 length, top 6.9 bottom through
 Thickness of plates 1 1/32 description of joint double butt strap rings are fitted hauling greatest length between rings 4.9 between hauling
 Working pressure of furnace by the rules 105 lbs
 Combustion chamber plating, thickness, sides 7/16 in back — top 1/2
 Pitch of stays to ditto sides 7 1/4 x 8 1/2 & 8 1/4 back — top 9 x 9
 If stays are fitted with nuts or riveted heads Nuts working pressure of plating by rules 81 lbs for sides & 94 lbs for top
 Diameter of stays at smallest part 1 1/4 working pressure of ditto by rules 112 lbs
 and plates in steam space, thickness 3/4 pitch of stays to ditto 16 x 13 1/2 how stays are secured double nuts &
 Working pressure by rules 78.7 lbs diameter of stays at smallest part 2 1/8 working pressure by rules 98 lbs
 Front plates at bottom, thickness 5/8 Steel Back plates, thickness no back greatest pitch of stays — working pressure by rules —

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Diameter of tubes $3\frac{1}{2}$ pitch of tubes $1\frac{1}{2}$ thickness of tube plates, front $\frac{1}{16}$ back $\frac{1}{8}$
 How stayed Stay tubes pitch of stays $9\frac{1}{2} \times 11\frac{1}{2}$ width of water spaces 6
 Diameter of Superheater or Steam chest $3\frac{1}{2}$ length 18
 Thickness of plates $\frac{1}{16}$ description of longitudinal joint Lap, double diameter of rivet holes $1\frac{1}{16}$ pitch of rivets $3\frac{1}{2}$
 Working pressure of shell by rules 188 lbs 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 $\frac{5}{16}$ How stayed By a $2\frac{1}{4}$ round bar stay
 Superheater or steam chest; how connected to boiler By short piece $\frac{1}{16}$ thick
DONKEY BOILER— Description Multitubular flat sided
 Made at Glasgow By whom made London & Glasgow Eng. when made 1880
 Where fixed Main Deck working pressure 50 lbs Tested by hydraulic pressure to 100 lbs per sq. in. No. of Certificate 387
 Fire grate area 20 sq. ft. Description of safety valves Direct Spring No. of safety valves Two area of each 7.5 in. dia.
 If fitted with casing gear Yes If steam from main boilers can enter the donkey boiler No
 Diameter of donkey boiler $14\frac{1}{2}$ length 9.6 height 9.5 description of riveting Double & single
 thickness of shell plates $\frac{7}{16}$ diameter of rivet holes $1\frac{3}{16}$ whether punched or drilled punched
 pitch of rivets $2\frac{1}{2} \times 2$ lap of plating $4\frac{1}{2} \times 3$ per centage of strength of joint 69
 thickness of crown plates stayed by
 Diameter of furnace, top $3\frac{1}{2}$ bottom length of furnace 6.9
 thickness of plates $\frac{7}{16}$ description of joint double butt strap
 thickness of furnace crown plates stayed by
 Working pressure of shell by rules 84 lbs working pressure of furnace by rules 60 lbs
 diameter of uptake thickness of plates thickness of water tubes

The foregoing is a correct description,

J. Kelly Secy pro Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c.) The Engines & Boilers have been carefully inspected & examined by me during construction. The quality of workmanship is good. The Machinery & Boilers are now in good order & safe working condition, & are in my opinion eligible to be noted in the Register Book, **LLD'S MC. 1.81**

It is submitted that this vessel is eligible to have the notation & Lloyds MC recorded in the Register Book
 Jm 24/1/81

The amount of Entry Fee £3 : : : received by me,

Special £46 : 10 : :

Certificate (if required) £4 : 10 : : 27 Jan 1881

To be sent as per margin.

(Travelling Expenses, if any, £ 10 : 0 : 0)

Committee's Minute

Tuesday Jan 24, 1881

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

Glyde District.