

REPORT ON MACHINERY.

BOX CASE 23875

Port of Liverpool Received at London Office 4 MARCH 1890
 No. 23875 No. in Survey held at Liverpool Date, first Survey 14 August Last Survey 26 Feb 1890
 Reg. Book. on the S.S. "Naparima" Tons 1043.49
 Master J. H. G. Brown Built at Liverpool By whom built H. S. Edwards & Co When built 18
 Engines made at Liverpool By whom made North Eastern Marine Eng Co when made 1890
 Boilers made at do By whom made do when made 1890
 Registered Horse Power 160 Owners Bartholomew Clapperton Port belonging to Glasgow

ENGINES, &c.—
 Description of Engines Triple Expansion Surface Condensing
 Diameter of Cylinders 21.5 x 25.5 Length of Stroke 36 No. of Rev. per minute 78 Point of Cut off, High Pressure .62 Low Pressure .6
 Diameter of Screw shaft 10 1/4 Diam. of Tunnel shaft 9 1/4 Diam. of Crank shaft journals 10 1/4 Diam. of Crank pin 10 1/4 size of Crank webs 11 1/2 x 6 1/2
 Diameter of screw 13.6 Pitch of screw 14.6 No. of blades 4 state whether moveable no total surface 58 8
 No. of Feed pumps 2 diameter of ditto 3 1/2 Stroke 18 Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 diameter of ditto 3 1/2 Stroke 18 Can one be overhauled while the other is at work yes
 Where do they pump from Sea from hot well. Bilge from engine space. Fresh water from Sea
 No. of Donkey Engines 2 Size of Pumps 4 x 6 & 9 x 12 Where do they pump from Sea donkey from Sea
 Pumps Hot well. Ballast donkey from all parts except hot well
 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 Circulating pump
 How are the pumps worked Sever over condenser on Centre pump
 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 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
 How are the pipes 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 never never
 Is the screw shaft tunnel watertight — and fitted with a sluice door yes worked from Upper platform

BOILERS, &c.—
 Number of Boilers 2 Description Cylindrical Single End Whether Steel or Iron Steel
 Working Pressure 160 Tested by hydraulic pressure to 320 Date of test 25.10.89 Cu 3000
 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 42 8 Description of safety valves Spring No. to each boiler 2
 Area of each valve 7.0 9 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 14" Diameter of boilers 17.6"
 Length of boilers 10:0" description of riveting of shell long. seams Lap 4 rows circum. seams Lap double Thickness of shell plates 1 3/4"
 Diameter of rivet holes 1 1/2" whether punched or drilled Drilled pitch of rivets 9" Lap of plating 13 3/4"
 Percentage of strength of longitudinal joint 82.16 working pressure of shell by rules 162 size of manholes in shell 16 x 1 1/2"
 Size of compensating rings — No. of Furnaces in each boiler 3
 Outside diameter 3:0" length, top 6:2" bottom 8.6" thickness of plates 3/32" description of joint Welded if rings are fitted —
 Greatest length between rings 6:2" working pressure of furnace by the rules 160 combustion chamber plating, thickness, sides 5/8" back 5/8" top 5/8"
 Pitch of stays to ditto, sides 8 1/2" back 8 1/2" top 8 1/2" If stays are fitted with nuts or riveted heads Nuts working pressure of plating by rules 160
 Diameter of stays at smallest part 1 1/2" working pressure of ditto by rules 160 end plates in steam space, thickness 1 1/2"
 Pitch of stays to ditto 18" how stays are secured By Washers working pressure by rules 160 diameter of stays at smallest part 2 1/4" working pressure by rules 164 Front plates at bottom, thickness 3/4" Back plates, thickness 3/4"
 Greatest pitch of stays 11" working pressure by rules 160 Diameter of tubes 3 1/4" pitch of tubes 4 1/2" thickness of tube plates, front 3/4" back 3/4" how stayed Welded pitch of stays as plan width of water spaces 5"
 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 —

Report sent to London 13/3/90
Description of furnaces
W382-0180

DONKEY BOILER— Description *vertical three crop tubes*
 Made at *Waltham* by whom made *Benke Chapman & Co* when made *1888* where fixed *St. Helena*
 Working pressure *80 lbs* tested by hydraulic pressure to *160* No. of Certificate *3051* fire grate area *26 sq* description of safety
 valves *Spring* No. of safety valves *1* area of each *14.19* if fitted with easing gear *yes* if steam from main boilers can
 enter the donkey boiler *no* diameter of donkey boiler *6.6* length *13.0* description of riveting *Cap donkey*
 Thickness of shell plates *3/16* diameter of rivet holes *3/8* whether punched or drilled *drilled* pitch of rivets *5 1/16* lap of plating *4 1/2*
 per centage of strength of joint *72* thickness of crown plates *3/16* stayed by *6 steel stay 1 1/8" off grain*
 Diameter of furnace, top *5 1/2"* bottom *5.6* length of furnace *5.6* thickness of plates *3/16* description of joint *Cap Single*
 Thickness of furnace crown plates *3/16* stayed by *Same as crown* working pressure of shell by rules *86*
 Working pressure of furnace by rules *80 lbs* diameter of uptake *1.5"* thickness of plates *3/16* thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *Spare gear as per Rule*

The foregoing is a correct description,
 for North Eastern Marine Engineering Co. Ltd
 W. H. Irving Esq. Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c.) *The machinery of this boiler has been specially surveyed the material and workmanship and renders the vessel eligible in my opinion to have the Record + L.M.C. 2.90 in the Register Book of the Society.*

Heating Surface in (2) boilers = 2680 sq
 H.P. as per rule 173 H.P.

Large handwritten signature in blue ink, possibly 'Richard H. ...'

It is submitted that this vessel is eligible to have + L.M.C. 2.90 recorded.

W.A. 4.3.90

The amount of Entry Fee .. £ 2 : - : - *received by me*
 Special £ 25 : 19 : -
 Donkey Boiler Fee £ .. : .. :
 Certificate (if required) .. £ *2/3* 18
 To be sent as per margin.
 (Travelling Expenses, if any, £ ..)

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

Committee's Minute TUES 11 MARCH 1890
 Machinery Certificate
 + L.M.C. 2.90

