

REPORT ON MACHINERY.

copy

Port of Glasgow

Received at London Office _____

No. in Survey held at _____
Reg. Book. _____

Glasgow

Date, first Survey 26th May 1892 Last Survey 2. 9. 1903

on the S.S. Colong

(Number of Visits 41)

Master _____ Built at Glasgow By whom built London & Glasgow E. & S. I. B. Co. Ltd When built 1893

Engines made at Glasgow By whom made London & Glasgow E. & S. I. B. Co. Ltd when made 1893

Boilers made at Glasgow By whom made London & Glasgow E. & S. I. B. Co. Ltd when made 1893

Registered Horse Power 550 Owners China Mutual Steam Navigation Co. Ltd Port belonging to London

Nom. Horse Power as per Section 28 297 Is Refrigerating Machinery fitted for cargo purposes _____ Is Electric Light fitted _____

ENGINES, &c.—Description of Engines Triple Expansion Direct Acting No. of Cylinders Three No. of Cranks _____

Dia. of Cylinders 24 1/2 29 64 Length of Stroke 48 Revs. per minute 75 Dia. of Screw shaft 12 1/2 Material of screw shaft _____

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 12 1/2 as per rule 11 3/4 as fitted _____ Dia. of Crank shaft journals 12 1/2 as per rule _____ as fitted _____ Dia. of Crank pin 12 3/4 Size of Crank webs 22 1/2 x 9 Dia. of thrust shaft under collars _____

Dia. of screw 17 1/2 Pitch of screw 16 1/2 No. of blades Four State whether moceable Yes Total surface 78 sq. ft.

No. of Feed pumps Two Diameter of ditto 4 Stroke 24 Can one be overhauled while the other is at work Yes

No. of Bilge pumps Two Diameter of ditto 4 1/2 Stroke 24 Can one be overhauled while the other is at work Yes

No. of Donkey Engines One Ballast pumps Two Sizes of Pumps 4 1/2 diam. x 12 D. Actg. No. and size of Suctions connected to both Bilge and Donkey pumps _____

In Engine Room Three 3 1/2 diam. In Holds, &c. Two 3 1/2 from No. 1 hold Two 3 1/2 from No. 2 hold One 3 1/2 from No. 3 hold One 3 1/2 from No. 4 hold

No. of bilge injections Two sizes 5 1/2 x 4 Connected to condenser, or to circulating pump Yes Is a separate donkey suction fitted in Engine room & size Yes 4

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 Yes

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 Before launching Is the screw shaft tunnel watertight Yes

Is it fitted with a watertight door Yes worked from Upper Deck

BOILERS, &c.—No. of Certificate _____ (Letter for record S) Total Heating Surface of Boilers 4657 sq. ft. Is forced draft fitted Yes

No. and Description of Boilers Two Cylindrical Multitubular Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs

Date of test 20. 10. 92 Can each boiler be worked separately Yes Area of fire grate in each boiler 523 sq. ft. No. and Description of safety valves to each boiler Two Spring loaded Area of each valve 11.04 sq. ft. Pressure to which they are adjusted 160 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 12 Mean dia. of boilers 14'-3" Length 11'-7" Material of shell plates steel

Thickness 1 1/8 Range of tensile strength _____ Are they welded or flanged _____ Descrip. of riveting: cir. seams Lap Double Riv long. seams Butt Double Riv

Diameter of rivet holes in long. seams 1 1/8 Pitch of rivets 8 1/2 x 3 1/4 Lap of plates or width of butt straps 2 1/2

Per centages of strength of longitudinal joint rivets 86.6 plate 83 Working pressure of shell by rules 184 lbs Size of manhole in shell 16' x 12'

Size of compensating ring No. Keils No. and Description of Furnaces in each boiler Three Purcell's Material Steel Outside diameter 43"

Length of plain part 8'-0" Thickness of plates 3 1/2 Description of longitudinal joint Welded No. of strengthening rings on bottom

Working pressure of furnace by the rules 161 lbs Combustion chamber plates: Material steel Thickness: Sides 1 1/2 Back 1 1/2 Top 1 1/2 Bottom 1 1/4

Pitch of stays to ditto: Sides 7 x 7 Back 7 1/2 x 6 1/2 Top 7 1/2 x 7 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 161 lbs

Material of stays steel Diameter at smallest part 1 1/2 x 1 1/4 Area supported by each stay 54.47 sq. ft. Working pressure by rules 182 lbs End plates in steam space: Material steel Thickness 3/8 Pitch of stays 14 1/4 x 14 1/4 How are stays secured Welded Working pressure by rules 191 lbs Material of stays steel

Diameter at smallest part 2 1/8 Area supported by each stay 206.6 sq. ft. Working pressure by rules 178 lbs Material of Front plates at bottom steel

Thickness 1 1/8 Material of Lower back plate steel Thickness 1 1/8 Greatest pitch of stays 11 1/2 x 7 1/2 Working pressure of plate by rules 164 lbs

Diameter of tubes 2 1/2 Pitch of tubes 2 1/2 x 2 1/4 Material of tube plates steel Thickness: Front 7/8 Back 3/2 Mean pitch of stays 7 1/2 x 7 1/2

Pitch across wide water spaces 13 x 11 1/2 Working pressures by rules 179 + 164 lbs Girders to Chamber tops: Material steel Depth and thickness of girder at centre 7 3/4 x 1 1/2 Length as per rule 30 Distance apart 7 1/2 Number and pitch of Stays in each Three 7"

Working pressure by rules 169 lbs 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 _____

If not, state whether, and when, one will be sent

To a Report also sent on the Hull of the Ship

2m. 35.—11.

Lloyd's Register Foundation

DONKEY BOILER— No. _____ Description *Cylindrical Multitubular Single ended*
 Made at *Glasgow* By whom made *London & Glasgow E. & J. B. Co.* Date of test *1893* Where fixed *on deck*
 Working pressure *80 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate *2117* Fire grate area *27 1/2 sq ft* Description of safety valves *Direct spring*
 No. of safety valves *Two* Area of each *5.9 sq ft* Pressure to which they are adjusted *80 lbs* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No*
 Dia. of donkey boiler *8' 6"* Length *8' 3"* Material of shell plates *Steel* Thickness *1/16"* Range of tensile strength _____
 Descrip. of riveting long seams *Lap Double riv.* Dia. of rivet holes *1 1/16"* Whether punched or drilled *Drilled* Pitch of rivets *2 1/16"*
 Lap of plating *4 1/4"* Per centage of strength of joint _____ Rivets _____ Thickness of shell ~~end~~ plates *1/16"* Radius of do. _____ No. of Stays to do. _____
 Dia. of stays _____ Rivets *16 1/4 x 13* Plates *22* Thickness of furnace ~~end~~ plates _____ Length of furnace *5' 6"* Thickness of furnace plates *1/2"* Description of joint *Welded* *Design Rev. Coral Chamber* Thickness of furnace ~~end~~ plates *1/2"* Stayed by *1 1/8" screwed stay bolts* Working pressure of shell by rules *86 lbs*
 Working pressure of furnace by rules *117 lbs* Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____

SPARE GEAR. State the articles supplied:— *As required by the Rules tail shaft & propeller blades one crank, one valve spindle, one pump rod, one pair of bottom end brasses*

The foregoing is a correct description, *London & Glasgow E. & J. B. Co.*
 Manufacturer. *(Sgd) Jas. W. Shepherd.*

Dates of Survey while building { During progress of work in shops - - }
 { During erection on board vessel - - }
 Total No. of visits _____ Is the approved plan of main boiler forwarded herewith _____
 " " " donkey " " "

General Remarks (State quality of workmanship, opinions as to class, &c. *The vessel's boilers & machinery have been built under the condition of special survey and has been securely fitted on board and satisfactorily tried under steam. The material & workmanship are good. Bowden's system of forced draught has been fitted to these boilers. It is submitted that the vessel is eligible for the record.*
L. M. C. 9-93

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|--------------------------------|------------|-------------------|
| The amount of Entry Fee.. | £ 2 : | When applied for, |
| Special | £ 34 . 8 : | <i>4/9/1893</i> |
| Donkey Boiler Fee | £ : | When received, |
| Travelling Expenses (if any) £ | : | <i>6/9/1893</i> |

(Sgd) E. C. Stronacher & J. Pennington
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *8th September 1893*
 Assigned *L. M. C. 9-93*



Certificate (if required) to be sent to the Surveyors are requested not to write on or below the space for Committee's Minute.