

REPORT ON MACHINERY.

No. 29406

Received at London Office

Date of writing Report 5-10-1910 When handed in at Local Office 14 OCT 1910 Port of Glasgow
No. in Survey held at Glasgow Date, First Survey 10th March 1910 Last Survey 6-10-1910
Reg. Book. on the 3/5 "CLYDEMHOR" (Number of Visits 26)

Master John Macdonald Built at Paisley By whom built John Fullerton & Co (N^o 216) When built 1910
Engines made at Glasgow By whom made Ross & Duncan (N^o 839) when made 1910
Boilers made at Glasgow By whom made Ross & Duncan (N^{os} 1296-7) when made 1910

Registered Horse Power _____ Owners Clydeside & S. Co. J. B. Couper Port belonging to Glasgow
Nom. Horse Power as per Section 28 150 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 17", 27 1/2", 45" Length of Stroke 33" Revs. per minute 98 Dia. of Screw shaft 9 1/2" Material of screw shaft Iron
Is the screw shaft fitted with a continuous liner the whole length of the stern tube yes Is the after end of the liner made water tight in the propeller boss yes

If the liner is in more than one length are the joints burned no 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 yes If two liners are fitted, is the shaft lapped or protected between the liners no Length of stern bush 3'-2"

Dia. of Tunnel shaft 8.47" Dia. of Crank shaft journals 8.88" Dia. of Crank pin 9" Size of Crank webs 16 1/2" x 5 1/2" Dia. of thrust shaft under collars 9" Dia. of screw 11'-6" Pitch of Screw 14'-0" No. of Blades 4 State whether moveable no Total surface 49 1/2 sq ft

No. of Feed pumps 2 Diameter of ditto 3" Stroke 16 1/2" Can one be overhauled while the other is at work yes
No. of Bilge pumps 2 Diameter of ditto 3 1/4" Stroke 16 1/2" Can one be overhauled while the other is at work yes

No. of Donkey Engines Two Sizes of Pumps 6" 4 1/4" + 6" 4 1/4" + 6" 4 1/4" + 6" 4 1/4" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room one 2 1/4", one 2 1/2" & one 2 1/4" special In Holds, &c. Two 2"

No. of Bilge Injections 1 sizes 4" Connected to condenser, or to circulating pump C.P. Is a separate Donkey Suction fitted in Engine room & size yes, 2 1/4"

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 none

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 forward pipes How are they protected wood casing
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
Dates of examination of completion of fitting of Sea Connections 31-8-10 of Stern Tube 31-8-10 Screw shaft and Propeller 31-8-10

Is the Screw Shaft Tunnel watertight none Is it fitted with a watertight door no worked from _____
BOILERS, &c.—(Letter for record S) Manufacturers of Steel Steel Co of Scotland & Sanam's hire

Total Heating Surface of Boilers 2696 sq ft Is Forced Draft fitted no No. and Description of Boilers 2 single ended marine
Working Pressure 140 lbs Tested by hydraulic pressure to 340 lbs Date of test 2-8-10 No. of Certificate 10518

Can each boiler be worked separately yes Area of fire grate in each boiler 39 sq ft No. and Description of Safety Valves to each boiler Two, spring loaded Area of each valve 3.976 sq in Pressure to which they are adjusted 145 lbs Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 4'-6" Mean dia. of boilers 12'-0" Length 10'-0" Material of shell plates steel
Thickness 3/32" Range of tensile strength 28-32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams B.R.

long. seams T.R.; D.B.S. Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 6 7/8" Lap of plates or width of butt straps 1'-5 1/2"
Per centages of strength of longitudinal joint rivets 88.5 Working pressure of shell by rules 172 lbs Size of manhole in shell 16 1/2"

Size of compensating ring 7" x 3 1/32" No. and Description of Furnaces in each boiler 2 plain Material steel Outside diameter 3'-8"
Length of plain part top 36 1/4" Thickness of plates crown 3/4" Description of longitudinal joint welded No. of strengthening rings one

Working pressure of furnace by the rules 173 Combustion chamber plates: Material steel Thickness: Sides 5/8" Back 19/32" Top 5/8" Bottom 5/8"
Pitch of stays to ditto: Sides 9" x 8 1/2" Back 8 1/2" x 8 1/2" Top 9" x 8 1/4" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 171

Material of stays steel Diameter at smallest part 1.76" Area supported by each stay 78.75 sq in Working pressure by rules 179 End plates in steam space: Material steel Thickness 1" Pitch of stays 1'-5" x 1'-4" How are stays secured by wash Working pressure by rules 174 Material of stays steel

Diameter at smallest part 4.67" Area supported by each stay 272.5 sq in Working pressure by rules 178 Material of Front plates at bottom steel
Thickness 13/16" Material of Lower back plate steel Thickness 13/16" Greatest pitch of stays 14" x 8 3/8" Working pressure of plate by rules 171.5

Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 3/8" Material of tube plates steel Thickness: Front 13/16" Back 3/4" Mean pitch of stays 8 1/8"
Pitch across wide water spaces 1'-2" Working pressures by rules 182 Girders to Chamber tops: Material Iron Depth and thickness of girder at centre 7" x 2 1/4" Length as per rule 2'-4 2/32" Distance apart 9" Number and pitch of stays in each 2 @ 8 3/4"

Working pressure by rules 193 Superheater or Steam chest; how connected to boiler none 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 _____

WASS-0032

VERTICAL DONKEY BOILER— Manufacturers of Steel

No. None Description _____

Made at _____ By whom made _____ When made _____ Where fixed _____

Working pressure tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____ Fire grate area _____ Description of Safety _____

Valves _____ No. of Safety Valves _____ Area of each _____ Pressure to which they are adjusted _____ Date of adjustment _____

If fitted with easing gear _____ If steam from main boilers can enter the donkey boiler _____ Dia. of donkey boiler _____ Length _____

Material of shell plates _____ Thickness _____ Range of tensile strength _____ Descrip. of riveting long. seams _____

Dia. of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____ Lap of plating _____ Per centage of strength of joint _____ Rivets _____ Plates _____

Working pressure of shell by rules _____ Thickness of shell crown plates _____ Radius of do. _____ No. of stays to do. _____ Dia. of stays _____

Diameter of furnace Top _____ Bottom _____ Length of furnace _____ Thickness of furnace plates _____ Description of joint _____

Working pressure of furnace by rules _____ Thickness of furnace crown plates _____ Radius of do. _____ Stayed by _____

Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

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, a quantity of assorted bolts and nuts, iron of various sizes, Two main & donkey check valves, and six boiler and condenser tubes.

The foregoing is a correct description,
Ross & Duncan Manufacturer.

Dates of Survey while building	During progress of work in shops—	1910. Mar 10. 30. April 6. 12. 26. 29. May 3. 10. 18. 23. 27. June 4. 20. 23. 27.
	During erection on board vessel—	July 6. 11. 13. 26. 27. Aug 2. 5. 15. 24. 30. 31. Sep 6. 22. 23. 27. 30. Oct 3. 4. 5. 6.
	Total No. of visits	36.

Is the approved plan of main boiler forwarded herewith yes
 " " " donkey " " " yes

Dates of Examination of principal parts—Cylinders 23-5-10 Slides 10-5-10 Covers 27-7-10 Pistons 6-7-10 Rods 10-5-10

Connecting rods 6-7-10 Crank shaft 23-5-10 Thrust shaft 19-8-10 Tunnel shafts none Screw shaft 19-8-10 Propeller 27-7-10

Stern tube 27-7-10 Steam pipes tested 23-9-10 Engine and boiler seatings 22-9-10 Engines holding down bolts 27-9-10

Completion of pumping arrangements 30-9-10 Boilers fixed 27-9-10 Engines tried under steam 4-10-10

Main boiler safety valves adjusted 30-9-10 Thickness of adjusting washers 5-5/16 in. P 5/16 full; P 5/16, P 5/16.

Material of Crank shaft iron Identification Mark on Do. 839 Material of Thrust shaft iron Identification Mark on Do. 839

Material of Tunnel shafts none Identification Marks on Do. ✓ Material of Screw shaft iron Identification Marks on Do. 839

Material of Steam Pipes solid drawn copper Test pressure 340 lbs per sq in

General Remarks (State quality of workmanship, opinions as to class, &c.)
The material and workmanship is good.
The machinery of this vessel has been built under Special Survey and is eligible in my opinion for Classification, and the record:— + L.M.C. -10,10.

It is submitted that
 this vessel is eligible for
THE RECORD, + L.M.C. 10, 10.
 J.W.D. J.P.R.
 21/10/10

The amount of Entry Fee .. £	2 : -	When applied for,	13/10/10
Special	£ 22 : 10	When received,	15/10/10
Donkey Boiler Fee	£		
Travelling Expenses (if any) £	:		

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

Committee's Minute **GLASGOW 18 OCT. 1910**
 Assigned + L.M.C 10, 10

MACHINERY CERTIFICATE
 WRITTEN.



Glasgow

Certificate (if required) to be sent to

The Surveyors are requested not to write on or below the space for Committee's Minute.