

REPORT ON MACHINERY.

Port of Greenock.

THUR 10 DEC 1896

Received at London Office 18

No. in Survey held at Greenock & Port Glasgow Date, first Survey 4th June Last Survey 14th Dec 1896
Reg. Book. Supplement (Number of Vols. 12)

46 on the Screw Steamer "Ceres" Gross 3576 Net 2316

Master J. Allan Built at Port Glasgow By whom built Russell & Co. When built 1896

Engines made at Greenock By whom made John & Kincaid & Co. when made 1896

Boilers made at Glasgow By whom made Anderson & Lyall when made 1896

Registered Horse Power 211 Owners Ceres S. S. Coy. (Lim^d) Port belonging to Newcastle on Tyne

Nom. Horse Power as per Section 28 288

ENGINES, &c.— Description of Engines Inverted Direct acting, Triple expansion No. of Cylinders Three

Diameter of Cylinders 25" 41" 66" Length of Stroke 42" Revolutions per minute 70 Diameter of Screw shaft as per rule 11.625"
as fitted 11.039"

Diameter of Tunnel shaft as fitted 11 1/4" Diameter of Crank shaft journals 12" Diameter of Crank pin 12" Size of Crank webs 15 3/4" x 8 1/2"

Diameter of screw 16" 0" Pitch of screw 17" 0" No. of blades Four State whether moveable no Total surface 84 sq

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" Stroke 24" Can one be overhauled while the other is at work yes

No. of Donkey Engines Two Sizes of Pumps 9" x 9" & Duplex 4" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Three 3 1/2" In Holds, &c. Eight 3 1/2" in holds & one 2 1/2" in tunnel well

No. of bilge injections one sizes 6" Connected to condenser, or to circulating pump as pumps a separate donkey suction fitted in Engine room & size yes 3 1/2"

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 —

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 Bilge pipes & sounding 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

When were stern tube, propeller, screw shaft, and all connections examined in dry dock as slip before launching Is the screw shaft tunnel watertight yes

Is it fitted with a watertight door yes worked from Engine room top platform

BOILERS, &c.— (Letter for record) Total Heating Surface of Boilers

No. and Description of Boilers see Glasgow report attached Working Pressure _____ Tested by hydraulic pressure to _____

Date of test _____ Can each boiler be worked separately _____ Area of fire grate in each boiler _____ No. and Description of safety valves to

each boiler Direct spring. Two Area of each valve 8.3 sq Pressure to which they are adjusted 165 lbs Are they fitted

with easing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork 9 1/2" Mean diameter of boilers _____

Length _____ Material of shell plates _____ Thickness _____ Description of riveting: circum. seams _____ long. seams _____

Diameter of rivet holes in long. seams _____ Pitch of rivets _____ Lap of plates or width of butt straps _____

Per centages of strength of longitudinal joint _____ Working pressure of shell by rules _____ Size of manhole in shell _____

Size of compensating ring _____ No. and Description of Furnaces in each boiler _____ Material _____ Outside diameter _____

Length of plain part _____ Thickness of plates _____ Description of longitudinal joint _____ No. of strengthening rings _____

Working pressure of furnace by the rules _____ Combustion chamber plates: Material _____ Thickness: Sides _____ Back _____ Top _____ Bottom _____

Pitch of stays to ditto: Sides _____ Back _____ Top _____ If stays are fitted with nuts or riveted heads _____ Working pressure by rules _____

Material of stays _____ Diameter at smallest part _____ Area supported by each stay _____ Working pressure by rules _____ End plates in steam space: _____

Material _____ Thickness _____ Pitch of stays _____ How are stays secured _____ Working pressure by rules _____ Material of stays _____

Diameter at smallest part _____ Area supported by each stay _____ Working pressure by rules _____ Material of Front plates at bottom _____

Thickness _____ Material of Lower back plate _____ Thickness _____ Greatest pitch of stays _____ Working pressure of plate by rules _____

Diameter of tubes _____ Pitch of tubes _____ Material of tube plates _____ Thickness: Front _____ Back _____ Mean pitch of stays _____

Pitch across wide water spaces _____ Working pressures by rules _____ Girders to Chamber tops: Material _____ Depth and

thickness of girder at centre _____ Length as per rule _____ Distance apart _____ Number and pitch of Stays in each _____

Working pressure by rules _____ 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 _____



DONKEY BOILER— Description *See Middlesbrough Surveyor's Report.*
 Made at _____ By whom made _____ When made _____ Where fixed _____
 Working pressure _____ tested by hydraulic pressure to _____ No. of Certificate _____ Fire grate area _____ Description of safety valves _____
 No. of safety valves _____ Area of each _____ Pressure to which they are adjusted _____ If fitted with easing gear _____ If steam from main boilers can enter the donkey boiler _____ Diameter of donkey boiler _____ Length _____ Material of shell plates _____ Thickness _____
 Description of riveting long. seams _____ Diameter of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____
 Lap of plating _____ Per centage of strength of joint _____ Rivets _____ 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 _____ Thickness of furnace crown plates _____ Stayed by _____ Working pressure of shell by rules _____
 Working pressure of furnace by rules _____ Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____

SPARE GEAR. State the articles supplied:— *1 propeller. 1 screw shaft. 1 length crank shaft. 12 coupling bolts & nuts. 2 top & 2 bottom end bolts & nuts. 2 main bearing bolts & nuts. 6 holding down bolts. 6 junk ring bolts. 6 cylinder cover bolts. 6 valve chest cover bolts. 2 feed & 2 large pump valves. 1/2 set air pump valves. 1/2 set C.B. pump valves.*

The foregoing is a correct description,
John G. Niccaid & Co. Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c.)
These Engines have been specially surveyed during construction quality of workmanship good. Main steam pipes satisfactorily tested by hydraulic pressure to 320 lbs per square inch. The Engines and Boilers are satisfactorily fitted in vessel, and have been tested under full steam, they are now in good order and safe working condition, and in my opinion eligible to be noted in Register Book. L.M.C. 12.96

Spare gear continued.
1/2 set ballast pump valves. 3 Cylinder escape valves. 1 feed escape valve & spring. 1 main feed check valve. Safety valve springs. 12 tubes for Main Boilers 12 tubes for Condenser. 120 ferrules for same. fire bars for Main & Donkey Boilers a quantity of bolts nuts and iron assorted.

It is submitted that this vessel is eligible for
THE RECORD. + L.M.C. 12.96
R.S.
10/12/96
10.12.96

Certificate (if required) to be sent to *Greenock*
 The amount of Entry Fee... £ *2* : *0* : *0* When applied for, *5.12.1896*
 Special *Due to Surveyor* £ *2* : *0* : *0* When received, *11.12.96*
 Donkey Boiler Fee... £ *1* : *0* : *0*
 Travelling Expenses (if any) £ *0* : *0* : *0*

C.S. Heron.
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.
 Greenock District.

Committee's Minute **FRI 11 DEC 1896**
 Assigned *+ L.M.C. 12.96*



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

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