

REPORT ON MACHINERY.

Port of Barrow in Furness

Received at London Office

17 MAR 92

No. in Survey held at Barrow
Reg. Book.

Date, first Survey 4th Sept 1891 Last Survey 11th Mar 1892
(Number of Visits 55)

on the Twin S S Binnie

Tons { Gross 100057
Net 59462

Master Jones Built at Barrow By whom built Naval Constr & Armts Co Ltd When built 1892

Engines made at Barrow By whom made Naval Constr & Armts Co Ltd when made 1892

Boilers made at Barrow By whom made " " " " when made 1892

Registered Horse Power 160 Owners London County Council Port belonging to London

Nom. Horse Power as per Section 28 150

ENGINES, &c.— Description of Engines Twin Screw Triple Expansion (3 cranks) No. of Cylinders Size

Diameter of Cylinders 15", 23", 35" Length of Stroke 24" Revolutions per minute 110 Diameter of Screw shaft as per rule 6.6
 Diameter of Tunnel shaft as per rule 6.27 Diameter of Crank shaft journals 7.5" Diameter of Crank pin 7.2" Size of Crank webs 14.5" x 5"
 Diameter of screw 8.8" Pitch of screw 10.6" No. of blades 4 State whether moveable No Total surface 22.3 sq ft

No. of Feed pumps one Diameter of ditto 3" Stroke 12" Can one be overhauled while the other is at work

No. of Bilge pumps one Diameter of ditto 3" Stroke 12" Can one be overhauled while the other is at work

No. of Donkey Engines 2 Sizes of Pumps 10" x 10", 4.5" x 10" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 2, 2.5" Tunnel 1, 2.5" In Holds, &c. 1, 2.5" under each sludge compartment
and 1, 6" suction in forward and after ballast tanks

No. of bilge injections Two sizes 4" Connected to condenser, or to circulating pump See Pump a separate donkey suction fitted in Engine room & size 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 launch the screw shaft tunnel watertight Yes

Is it fitted with a watertight door Yes worked from Top Platform

OILERS, &c.— (Letter for record (S)) E 11/9/91 Total Heating Surface of Boilers 2803 sq ft

No. and Description of Boilers Two Cylindrical Multitubular Working Pressure 150 Tested by hydraulic pressure to 300

Date of test 27/2/92 Can each boiler be worked separately Yes Area of fire grate in each boiler 54 sq ft No. and Description of safety valves to each boiler Two Spring Area of each valve 7.07" Pressure to which they are adjusted 150 lb Are they fitted with easing gear Yes Smallest distance between boilers or uptakes and bunkers or woodwork 10" Mean diameter of boilers 12.2"

Length 10' 0" Material of shell plates Steel Thickness 1" Description of riveting: circum. seams Lap triple Rivet long. seams D. B. Straps Rivet

Diameter of rivet holes in long. seams 1.32" Pitch of rivets 7" Lap of plates or width of butt straps Butt straps 15.7"

Percentages of strength of longitudinal joint 89.1 Working pressure of shell by rules 151.8 Size of manhole in shell 16 x 12

Size of compensating ring 35 x 26.5 x 1" No. and Description of Furnaces in each boiler Three, 7 hoses Material Steel Outside diameter 3.2"

Length of plain part top 7.6" Thickness of plates bottom 7.6" Description of longitudinal joint Welded No. of strengthening rings —

Working pressure of furnace by the rules 162.3 Combustion chamber plates: Material Steel Thickness: Sides 9/16" Back 9/16" Top 9/16" Bottom 5/8"

Pitch of stays to ditto: Sides 8" Back 8" Top 8, 7" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 170.8

Material of stays Steel Diameter at smallest part 1.75" Area supported by each stay 64" Working pressure by rules 153.7 End plates in steam space: Material Steel Thickness 3/4" Pitch of stays 15 x 14 How are stays secured Nuts Working pressure by rules 200 Material of stays Steel

Diameter at smallest part 2.3/4" Area supported by each stay 210" Working pressure by rules 159.8 Material of Front plates at bottom Steel

Thickness 3/4" Material of Lower back plate Steel Thickness 3/4" Greatest pitch of stays 16" Working pressure of plate by rules 221

Diameter of tubes 3.1/4" Pitch of tubes 4.3/8" Material of tube plates Steel Thickness: Front 3/4" Back 3/4" Mean pitch of stays 8.3/4"

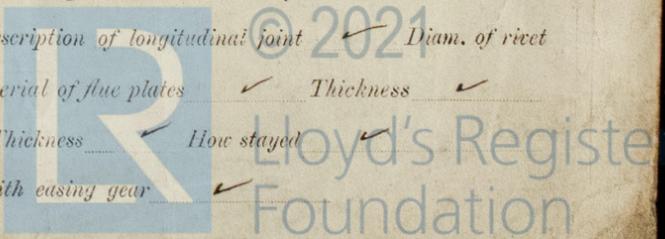
Pitch across wide water spaces 13.5" Working pressures by rules 196.6 Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 7" x 1.75" Length as per rule 25.5" Distance apart 7" Number and pitch of Stays in each Two 8"

Working pressure by rules 194.0 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

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 *None*

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 casing 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:— *Vessel for river service spare gear not supplied.*

FOR NAVAL CONSTRUCTION & ARMAMENTS CO. Ltd.

Alderson

The foregoing is a correct MANUFACTURER'S description.

Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c.)

The Engines and Boilers of this vessel have been constructed under special survey, the material and workmanship employed are of the best description, the main steam pipes were tested by hydraulic pressure to twice the working pressure and found tight and sound.

The Machinery of this vessel is in good order and safe working condition, and in my opinion eligible to be notified in the Register Book **LMC-392**

Certificate (if required) to be sent to

The amount of Entry Fee.. £ 2 : 0 : } When applied for,
 Special £ 22 : 10 : } *18 Mar 92*
 Donkey Boiler Fee £ : : }
 Travelling Expenses (if any) £ } When received,
18 Mar 92

MACHINERY *18 Mar 92*

WRITTEN.

Committee's Minute

Assigned

FR 18 MAR 1892

+ LMC 3, 92

It is submitted that this vessel is eligible for THE RECORD + LMC 392
Cr. 17 392

Jas Easthope
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



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