

# REPORT ON MACHINERY.

Port of Barrow in Furness

MON. 17 JUL 1893

Received at London Office

18

No. in Survey held at Barrow

Date, first Survey 21<sup>st</sup> July 1892 Last Survey 12<sup>th</sup> July 1893

Reg. Book.

(Number of Visits 142)

Gross 2511.08

Tons } Net 1630.22

on the Twin Screw Dredger Brancher

Master J. E. G. G. G.

Built at Barrow

By whom built Naval Construction & Armaments Co. Ltd. When built 1893

Engines made at Barrow

By whom made Naval Construction & Armaments Co. Ltd. when made 1893

Boilers made at Do

By whom made " " " when made 1893

Registered Horse Power 225

Owners Mersey Dock & Harbour Board Port belonging to Liverpool

Nom. Horse Power as per Section 28 262

**ENGINES, &c.**— Description of Engines Triple Expansion Twin Screw (3 cranks) No. of Cylinders Six  
Diameter of Cylinders 18" 29" 47" Length of Stroke 30" Revolutions per minute 90 Diameter of Screw shaft 8.6"  
Diameter of Tunnel shaft 8.6" Diameter of Crank shaft journals 8 3/4" Diameter of Crank pin 9 1/4" Size of Crank webs 8 x 6"  
Diameter of screw 12' 0" Pitch of screw 14-6" No. of blades 4 State whether moveable No Total surface 41.44  
No. of Feed pumps 2 Weirs Diameter of ditto 7" Stroke 15" Can one be overhauled while the other is at work Yes  
No. of Bilge pumps Two Diameter of ditto 4 1/2" Stroke 12" Can one be overhauled while the other is at work Yes  
No. of Donkey Engines one Sizes of Pumps 8 1/2" x 1 1/2" No. and size of Suctions connected to both Bilge and Donkey pumps.  
In Engine Room Two 3 1/2" four 3" In Holds, &c. No 1 comp't one 3", No 2 one 3", Pump  
Room Three 3", No 7 one 3 1/2" Two 3" No 10 one 3 1/2", Tunnel wells Two 3 1/2"  
No. of bilge injections 1 sizes 7 1/2" Connected to condenser, or to circulating pump 68 Pump Is a separate donkey suction fitted in Engine room & size Yes 3"  
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 Caunch Is the screw shaft tunnel watertight Yes  
Is it fitted with a watertight door Yes worked from upper platform  
**OILERS, &c.**— (Letter for record S) Total Heating Surface of Boilers 4232 1/4  
No. and Description of Boilers Two Multitubular Working Pressure 160 Tested by hydraulic pressure to 360  
Date of test 16.3.93 Can each boiler be worked separately Yes Area of fire grate in each boiler 67.14 No. and Description of safety valves to  
each boiler Two Spring loaded Area of each valve 7.6" 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 diameter of boilers 14.9"  
Length 10.6" Material of shell plates Steel Thickness 1 1/2" Description of riveting: circum. seams Cap but + double long. seams 10 B.S double pitch  
Diameter of rivet holes in long. seams 7/16" Pitch of rivets 9 1/4" & 4 3/4" Lap of plates or width of butt straps 20 7/8"  
Per centages of strength of longitudinal joint 89.6 Working pressure of shell by rules 195.6 Size of manhole in shell 16 x 12  
Size of compensating ring 42 x 31 x 1 1/2" No. and Description of Furnaces in each boiler 3 7/8 corrugated Material Steel Outside diameter 3' 10 3/4"  
Length of plain part 6" Thickness of plates 19/32 Description of longitudinal joint Welded No. of strengthening rings ✓  
Working pressure of furnace by the rules 201 Combustion chamber plates: Material Steel Thickness: Sides 9/32 Back 9/32 Top 9/32 Bottom 3/4"  
Pitch of stays to ditto: Sides 8 x 8" Back 8 x 8" Top 8 x 6 3/4" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 190  
Material of stays Steel Diameter at smallest part 1 3/8" Area supported by each stay 5 1/4" Working pressure by rules 184.4 End plates in steam space:  
Material Steel Thickness 1 1/8" Pitch of stays 15 x 15" How are stays secured Nuts Working pressure by rules 252 Material of stays Steel  
Diameter at smallest part 3 9/16" Area supported by each stay 183.75 Working pressure by rules 193.6 Material of Front plates at bottom Steel  
Thickness 3/4" Material of Lower back plate Steel Thickness 7/8" Greatest pitch of stays 11 Working pressure of plate by rules 206  
Diameter of tubes 3 1/2" Pitch of tubes 4 3/4" 4 5/8" Material of tube plates Steel Thickness: Front 15/16" Back 3/4" Mean pitch of stays 9 1/2 x 9 1/2"  
Pitch across wide water spaces 13 1/2" Working pressures by rules 185 Girders to Chamber tops: Material Steel Depth and  
thickness of girder at centre 7 1/2 x 9 1/8 x 2 Length as per rule 26 3/4" Distance apart 6 3/4" Number and pitch of Stays in each Two 8"  
Working pressure by rules 185 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

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. \_\_\_\_\_  
Diameter 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:—

The foregoing is a correct description,  
Manufacturer.

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

Certificate (if required) to be sent to

The amount of Entry Fee. . . . .	£	:	:	When applied for,
Special . . . . .	£	:	:	.....18.....
Donkey Boiler Fee . . . . .	£	:	:	When received,
Travelling Expenses (if any) £	:	:	:	.....18.....

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

Committee's Minute TUES. 18 JUL 1893

Assigned



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Foundation