

# REPORT ON MACHINERY.

609

Port of Barrow in Furness

Received at London Office

THURS. 12 JUL 1894

No. in Survey held at Barrow  
Reg. Book.

Date, first Survey 9<sup>th</sup> Jan

Last Survey 6<sup>th</sup> July 1894

(Number of Visits 69)

on the Steel Screw Steamer Clan Ross

Gross Tons 2602.18  
Net Tons 1664.4

Master Rule

Built at Barrow

By whom built Naval Constr. & Armts Co. Lim

When built 1894

Engines made at Barrow

By whom made Naval Constr. & Armts Co. Lim

when made 1894

Boilers made at Do

By whom made Do

when made 1894

Registered Horse Power 300

Owners Cayzer Irvine & Co.

Port belonging to Glasgow

Nom. Horse Power as per Section 28 267

**ENGINES, &c.** — Description of Engines Triple Expansion (3 Cranks) No. of Cylinders Three

Diameter of Cylinders 23" 38" 63" Length of Stroke 42" Revolutions per minute \_\_\_\_\_ Diameter of Screw shaft as per rule 11.9"  
as fitted 12.5"

Diameter of Tunnel shaft as per rule 11.3" Diameter of Crank shaft journals 12.5" Diameter of Crank pin 13" Size of Crank webs 8" x 25"  
as fitted 12"

Diameter of screw 15-6" Pitch of screw 17-6" No. of blades 4 State whether moveable Yes Total surface 64 ft

No. of Feed pumps two (weirs) Diameter of ditto 7 x 9" Stroke 18" Can one be overhauled while the other is at work Yes

No. of Bilge pumps two Diameter of ditto 4" Stroke 22" Can one be overhauled while the other is at work Yes

No. of Donkey Engines Two Sizes of Pumps 9 x 9 x 10 & 4 x 6 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps \_\_\_\_\_

In Engine Room Two 3 1/2" dia Two 3" dia In Holds, &c. No, one 3 1/2" dia No 2 one 3 1/2" Two 2 1/2" dia  
No 3 one 5" dia two 2 1/2" dia, after hold one 3 1/2" dia tunnel well one 3 1/2" dia

No. of bilge injections one sizes 7" Connected to condenser, or to circulating pump Yes Is 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 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 Is the screw shaft tunnel watertight Yes

Is it fitted with a watertight door Yes worked from bridge deck

**BOILERS, &c.** — (Letter for record S) Total Heating Surface of Boilers 4040.2 ft

No. and Description of Boilers Two Multitubular Working Pressure 200 Tested by hydraulic pressure to 400

Date of test 8-6-94 Can each boiler be worked separately Yes Area of fire grate in each boiler 63 ft No. and Description of safety valves to each boiler Two Spring loaded Area of each valve 7.069 ft Pressure to which they are adjusted 200 Are they fitted with easing gear Yes Smallest distance between boilers or uptakes and bunkers or woodwork 12 Mean diameter of boilers 13-6

Length 11-9" Material of shell plates Steel Thickness 1 3/8" Description of riveting: circum. seams Cap. tubular & double long. seams 10 strap (tubular)

Diameter of rivet holes in long. seams 1 3/32" Pitch of rivets 9 1/4" Lap of plates or width of butt straps 20 3/8"

Per centages of strength of longitudinal joint: rivets 86.5 Working pressure of shell by rules 209 Size of manhole in shell 15 x 19 1/2"  
plate 84.5

Size of compensating ring 2.7 x 3.6 x 1 3/8" No. and Description of Furnaces in each boiler Three Purvis Material Steel Outside diameter 3'-3"

Length of plain part top 9" Thickness of plates bottom 9/16" Description of longitudinal joint welded No. of strengthening rings \_\_\_\_\_

Working pressure of furnace by the rules 208 Combustion chamber plates: Material Steel Thickness: Sides 5/8" Back 5/8" Top 5/8" Bottom 1"

Pitch of stays to ditto: Sides 8 x 7 1/2" Back 8 1/2 x 7 1/8" Top 7 1/2 x 7 1/2" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 210

Material of stays Steel Diameter at smallest part 1.504" Area supported by each stay 58 Working pressure by rules 207 End plates in steam space: \_\_\_\_\_

Material Steel Thickness 1/8" Pitch of stays 15 x 15" How are stays secured 10 Nuts Working pressure by rules 235.4 Material of stays Steel

Diameter at smallest part 2 1/2" Area supported by each stay 206.25" Working pressure by rules 211 Material of Front plates at bottom Steel

Thickness 15/16" Material of Lower back plate Steel Thickness 7/8" Greatest pitch of stays 15" Working pressure of plate by rules 210

Diameter of tubes 2 1/2" Pitch of tubes 3 3/4" 3 5/8" Material of tube plates Steel Thickness: Front 1/16" Back 29/32" Mean pitch of stays 9 1/2"

Pitch across wide water spaces 14" Working pressures by rules 206.5 Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 8 x (13/16 x 2) Length as per rule 28.5 Distance apart 7 1/2" Number and pitch of Stays in each three 7 1/2"

Working pressure by rules 229 Superheater or Steam chest; how connected to boiler Yes Can the superheater be shut off and the boiler worked separately \_\_\_\_\_

holes \_\_\_\_\_ Diameter \_\_\_\_\_ Length \_\_\_\_\_ Thickness of shell plates \_\_\_\_\_ Material \_\_\_\_\_ Description of longitudinal joint \_\_\_\_\_ Diam. of rivet \_\_\_\_\_  
Pitch of rivets \_\_\_\_\_ Working pressure of shell by rules \_\_\_\_\_ Diameter of flue \_\_\_\_\_ Material of flue plates \_\_\_\_\_ Thickness \_\_\_\_\_

If stiffened with rings Yes 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? In a Report also sent on the Hull of the Ship? (112—L.R.P.H.—5,000—Form No. 8—4-2-02—Copyrighted Ink.)





**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 easing gear \_\_\_\_\_ If steam from main boilers \_\_\_\_\_

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. \_\_\_\_\_

Plates \_\_\_\_\_

Dia. of stays. \_\_\_\_\_ Diameter of furnace Top \_\_\_\_\_ Bottom \_\_\_\_\_ Length of furnace \_\_\_\_\_ Thickness of furnace plates \_\_\_\_\_ Description \_\_\_\_\_

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,  
 For **NAVAL CONSTRUCTION & ARMAMENTS Co., Ltd.**  
 Manufacturer.

*A. Alderson*

General Remarks (State <sup>MANAGING DIRECTOR</sup> ~~MANAGER~~ <sup>of the</sup> ~~Company~~ <sup>relationship</sup>, 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

13 JUL 1894

Assigned



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 Foundation