

REPORT ON MACHINERY.

Port of Barrow in Furness

THURS. 12 JUL 1894

No. in Survey held at Barrow
Reg. Book.

Date, first Survey 9th Jan

Last Survey 6th July 1894

(Number of Visits 69)

on the Steel Screw Steamer Clan Ross

Gross Tons 2602.18
Net 1664.4

Master Rule

Built at Barrow

By whom built Naval Constructors & Armors Co. Lim.

When built 1894

Engines made at Barrow

By whom made Naval Constructors & Armors Co. Lim.

when made 1894

Boilers made at Do.

By whom made Do.

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 as per rule 11.9
Diameter of Tunnel shaft as per rule 11.3 Diameter of Crank shaft journals 12 1/2" Diameter of Crank pin 13" Size of Crank webs 8" x 25"
Diameter of screw 15-6" Pitch of screw 17-6" No. of blades 4 State whether moreable 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 6 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 C pump 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. tub. & double long. seams 10 strap (tub.)
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 86.5 Working pressure of shell by rules 209 Size of manhole in shell 15 x 19 1/2"
Size of compensating ring 27 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 2" Thickness of plates crown 9/16" Description of longitudinal joint welded No. of strengthening rings
bottom 2" 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 1/2" 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 5/16" Area supported by each stay 58 Working pressure by rules 207 End plates in steam space:
Material Steel Thickness 1 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 211
Diameter of tubes 2 1/2" Pitch of tubes 3 3/4 3 5/8 Material of tube plates Steel Thickness: Front 1 1/8" 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 ✓ 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 ✓

If not, state whether, and when, one will be sent?

Is a Report also sent on the Hull of the Ship?

[112.—L.R.P.H.—5,000.—Form No. 8.—4-202.—Copyright Ink.]

DONKEY BOILER— Description For Particulars of Donkey boiler see separate report on Deck

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 boiler
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
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:— In addition to the articles required by Rules
12 Junk ring bolts 2 Propeller blades, 1 set Ramshotton Rings for
2 Cylinders 1 set braces for connecting Rod of circulating Pump engine
2 donkey feed Valves and a number of other articles

The foregoing is a correct description,
For NAVAL CONSTRUCTION & ARMAMENTS CO., LD.
Manufacturer.

Alldamson

General Remarks (MANAGING DIRECTOR)
The Engines and Boilers of this vessel have been constructed under special survey in accordance with the Rules, the material and workmanship employed are of the best description and when fitted into the vessel the machinery was tried at full speed and found to work satisfactorily

Howdens system of forced draught This vessel is fitted with

The machinery of this vessel is now in good order and safe working condition and eligible in my opinion to have the notation **LMC 7-94** inserted in the Register Book.

It is submitted that
this vessel is eligible for
THE RECORD + L.M.C. 7-94

W.A.
12-7-94

Certificate (if required) to be sent to

The amount of Entry Fee... £ 3 : 0 :
Special ... £ 33 : 7 :
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :

When applied for,
11 July 1894

When received,
14/7/94

Committee's Minute

13 JUL 1894

Assigned

+ L.M.C. 7-94

Continuation of REPORT ON MACHINERY.

N. 607.

Port of Barrow in Furness

THURS. 12 JUL 1894

Survey held at Barrow Date, first Survey Last Survey 18
on the Steel Screw Steamer Clan Ross
Built at By whom built when made
By whom made Naval Constr. & Arms Co. (Lim) when made 1894
Owners Port belonging to

Horse Power as per Section 28

Engines, &c.— Description of Engines No. of Cylinders as per rule
Diameter of Cylinders Length of Stroke Revolutions per minute Diameter of Screw shaft as fitted
Diameter of Tunnel shaft as fitted Diameter of Crank shaft journals Diameter of Crank pin Size of Crank webs
Diameter of screw Pitch of screw No. of blades State whether moveable Total surface
of Feed pumps Diameter of ditto Stroke Can one be overhauled while the other is at work
of Bilge pumps Diameter of ditto Stroke Can one be overhauled while the other is at work
of Donkey Engines Sizes of Pumps No. and size of Suctions connected to both Bilge and Donkey pumps
Engine Room In Holds, &c.
of bilge injections sizes Connected to condenser, or to circulating pump Is a separate donkey suction fitted in Engine room & size
all the bilge suction pipes fitted with roses Are the roses in Engine room always accessible Are the sluices on Engine room bulkheads always accessible
all connections with the sea direct on the skin of the ship Are they Valves or Cocks
they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Are the discharge pipes above or below the deep water line
they each fitted with a discharge valve always accessible on the plating of the vessel Are the blow off cocks fitted with a spigot and brass covering plate
that pipes are carried through the bunkers How are they protected
all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times
the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges
then were stern tube, propeller, screw shaft, and all connections examined in dry dock Is the screw shaft tunnel watertight
it fitted with a watertight door worked from

Boilers, &c. (Letter for record 3) Total Heating Surface of Boilers 730.9
No. and Description of Boilers One multitubular Working Pressure 100 Tested by hydraulic pressure to 200
date of test 11-6-94 Can each boiler be worked separately ✓ Area of fire grate in each boiler 31.6 No. and Description of safety valves to
each boiler Two spring loaded Area of each valve 4.90 Pressure to which they are adjusted 100 Are they fitted
with easing gear Yes Smallest distance between boilers or uptakes and bunkers or woodwork 12" Mean diameter of boiler 9-8
length 9-0 Material of shell plates Steel Thickness 5/8 Description of riveting: circum. seams double long. seams lap double
diameter of rivet holes in long. seams 27/32 Pitch of rivets 37/8 x 1 5/16 Lap of plates on width of butt straps 6 7/8
per centages of strength of longitudinal joint rivets 78.3 Working pressure of shell by rules 101.5 Size of manhole in shell 16 x 12
size of compensating ring 2-8 x 2-4 No. and Description of Furnaces in each boiler Two Plain Material Steel Outside diameter 2-11
length of plain part top 8-6 bottom 7-32 Thickness of plates bottom 7/32 Description of longitudinal joint AB Straps No. of strengthening rings ✓
Working pressure of furnace by the rules 111 Combustion chamber plates: Material Steel Thickness: Sides 1/2 Back 1/2 Top 1/2 Bottom 7/32
Pitch of stays to ditto: Sides 8 3/4 Back 8 3/4 Top 8 3/4 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 112
Material of stays Steel Diameter at smallest part 5/32 Area supported by each stay 76.5 Working pressure by rules 105.8 End plates in steam space:
Material Steel Thickness 13/16 Pitch of stays 14 1/2 How are stays secured Nuts Working pressure by rules 149 Material of stays Steel
Diameter at smallest part 7/8 Area supported by each stay 210 Working pressure by rules 117 Material of Front plates at bottom Steel
Thickness 3/4 Material of Lower back plate Steel Thickness 7/8 Greatest pitch of stays 13 1/2 (11 1/2) Working pressure of plate by rules
Diameter of tubes 3 Pitch of tubes 4 1/2 x 4 1/2 Material of tube plates Steel Thickness: Front 3/4 Back 7/8 Mean pitch of stays 11 3/4
Pitch across wide water spaces 14 1/2 Working pressures by rules 102.7 Girders to Chamber tops: Material Steel Depth and
thickness of girder at centre 6 x 1/2 x 2 Length as per rule 24 1/2 Distance apart 8 3/4 Number and pitch of Stays in each two 8 3/4
Working pressure by rules 105.6 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 ✓

James Easthope

Lloyd's Register
Foundation

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.
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. A. A. A. A.

General Remarks (State MANAGING DIRECTOR, 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