

REPORT ON MACHINERY

No. 27185

Received at London Office

Date of writing Report

When handed in at Local Office

6. 3. 18 Port of SUNDERLANDNo. in Survey held at Sunderland

Date, First Survey

29 June '17

Last Survey

5 March 1918

Reg. Book.

on the new steel 315 "CLAN MACBEAN"(Number of Visits 24)Gross 5052Tons Net 3982

Master

Built at Sunderland

By whom built

Bartram & Sons Ltd (No 243)When built 1918

Engines made at

Sunderland

By whom made

J. Dickinson & Sons Ltd (No 800)

when made

1918

Boilers made at

Sunderland

By whom made

J. Dickinson & Sons Ltd (No 800)

when made

1918

Registered Horse Power

Owners

Caygen, Irvine & Co Ltd

Port belonging to

Glasgow

Nom. Horse Power as per Section 28

476

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

yes

ENGINES, &c.—Description of Engines

Triple expansionNo. of Cylinders 3No. of Cranks 3

Dia. of Cylinders

27½ - 45 - 75"

Length of Stroke

48"

Revs. per minute

70

Dia. of Screw shaft

as per rule 14.89"Material of steel

Is the screw shaft fitted with a continuous liner the whole length of the stern tube

yes

Is the after end of the liner made water tight

in the propeller boss

yes

If the liner is in more than one length are the joints burned

If the liner does not fit tightly at the part

between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive

If two

liners are fitted, is the shaft lapped or protected between the liners

Length of stern bush 5'3"

Dia. of Tunnel shaft

as per rule 13.5"

Dia. of Crank shaft journals

as per rule 14.18"

Dia. of Crank pin

14½"

Size of Crank webs

26" x 9½"

Dia. of thrust shaft under

collars

14½"

Dia. of screw

17'9"

Pitch of Screw

16'9"

No. of Blades

4

State whether moveable

no

Total surface

99 ft

No. of Feed pumps

2 Weir's

Diameter of ditto

7"

Stroke

24"

Can one be overhauled while the other is at work

yes

Steam cylinder

9½"

No. of Bilge pumps

2

Diameter of ditto

5"

Stroke

24"

Can one be overhauled while the other is at work

yes

No. of Donkey Engines

3

Sizes of Pumps

8½" x 10"7½" x 10"6½" x 6"

No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room

3 @ 3½"

In Holds, &c.

No 1 hold 2 @ 3½"No 2 hold 2 @ 3½"

No. of Bilge Injections

1

sizes

7"

Connected to condenser, or to circulating pump

L.P.

Is a separate Donkey Suction fitted in Engine room & size

yes 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

none

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

Dates of examination of completion of fitting of Sea Connections

27-10-17

of Stern Tube

19-12-17

Screw shaft and Propeller

19-12-17

Is the Screw Shaft Tunnel watertight

yes

Is it fitted with a watertight door

yesworked from Top platformBOILERS, &c.—(Letter for record 5)

Manufacturers of Steel

John Spence & Sons Ltd

Total Heating Surface of Boilers

8055 ft

Is Forced Draft fitted

no

No. and Description of Boilers

three single ended marine

Working Pressure

180

Tested by hydraulic pressure to

360

Date of test

16-1-18

No. of Certificate

3455

Can each boiler be worked separately

yes

Area of fire grate in each boiler

68 ft

No. and Description of Safety Valves to

each boiler

two direct spring

Area of each valve

9.60"

Pressure to which they are adjusted

185 lb

Are they fitted with easing gear

yes

Smallest distance between boilers or uptakes and bunkers or woodwork

5'0"

Mean dia. of boilers

15'10½"

Length

11'10½"

Material of shell plates

steel

Thickness

1½"

Range of tensile strength

28½ - 32 ton

Are the shell plates welded or flanged

no

Descrip. of riveting: cir. seams

D.R.

long. seams

DBS.T.R.

Diameter of rivet holes in long. seams

1½"

Pitch of rivets

9½"

Lap of plates or width of butt straps

20½"

Per centages of strength of longitudinal joint

rivets

88.5

plate

85.5

Working pressure of shell by rules

190

Size of manhole in shell

16" x 12"

Size of compensating ring

8½" x 1½"

No. and Description of Furnaces in each boiler

3 Height

Material

steel

Outside diameter

50"

Length of plain part

top

Thickness of plates

bottom19"

Description of longitudinal joint

welded

No. of strengthening rings

1

Working pressure of furnace by the rules

189

Combustion chamber plates: Material

steel

Thickness: Sides

21"

Back

21"

Top

21"

Bottom

7"

Pitch of stays to ditto: Sides

8½" x 8"

Back

8½" x 8"

Top

8" x 8"

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

219

Material of stays

steel

Diameter at smallest part

1.730"

Area supported by each stay

680"

Working pressure by rules

204

End plates in steam space

yes

Material

steel

Thickness

1½"

Pitch of stays

20½" x 17"

How are stays secured

DN & W

Working pressure by rules

209

Material of stays

steel

Diameter at smallest part

1.850"

Area supported by each stay

348.50"

Working pressure by rules

234

Material of Front plates at bottom

steel

Thickness

29"

Material of Lower back plate

steel

Thickness

29"

Greatest pitch of stays

15½" x 8"

Working pressure of plate by rules

187

Diameter of tubes

3½"

Pitch of tubes

4½" x 4½"

Material of tube plates

steel

Thickness: Front

29"

Back

7"

Mean pitch of stays

9" x 9"

Pitch across wide water spaces

14½"

Working pressures by rules

261

Girders to Chamber tops: Material

steel

Depth and

thickness of girder at centre

8" x 2"

Length as per rule

34½"

Distance apart

8"

Working pressure by rules

182

Superheater or Steam chest; how connected to boiler

none

Can the superheater be shut off and the boiler worked

separately

separately

Diameter

IS A DONKEY BOILER FITTED? yes

If so, is a report now forwarded? yes

SPARE GEAR. State the articles supplied:—

Two connecting rod top and bottom end bolts and nuts.
Two main bearing bolts. one set of coupling bolts. one set of feed, bilge, air and circulating pump
valves. iron and bolts various sizes. one screw shaft and one propeller. a spare set of
oil fuel burners.

The foregoing is a correct description,

John Dickinson & Sons, Limited

Manufacturer.

Dates of Survey while building { During progress of work in shops -- 1917 June 29 Aug 27 Sep 6 Oct 3 16 17 27 Nov 2 7 13 14 19 22 26 29 Dec 10 11 19 28 Jan 3 8
During erection on board vessel -- 7 16 21 25 Feb 5 7 8 11 12 18 19 26 Mar 5
Total No. of visits 34

Is the approved plan of main boiler forwarded herewith yes

" " " donkey " " " yes

Dates of Examination of principal parts—Cylinders 1 9-11-17 Slides 3-10-17 Covers 26-11-17 Pistons 3-10-17 Rods 2-11-17

Connecting rods 2-11-17 Crank shaft 10-12-17 Thrust shaft 10-12-17 Tunnel shafts 10-12-17 Screw shaft 10-12-17 Propeller 19-12-17

Stern tube 28-12-17 Steam pipes tested 5, 7 & 8-2-18 Engine and boiler seatings 12-11-17 Engines holding down bolts 21-1-18

Completion of pumping arrangements 18-2-18 Boilers fixed 8-2-18 Engines tried under steam 11-2-18

Main boiler safety valves adjusted 11-2-18 Thickness of adjusting washers Port boiler $F \frac{3}{8}$ A $\frac{3}{8}$ Centre boiler both $\frac{3}{8}$ Star boiler both $\frac{3}{8}$

Material of Crank shaft Steel Identification Mark on Do. 800 L.C.D. Material of Thrust shaft Steel Identification Mark on Do. 800 L.C.D.

Material of Tunnel shafts Steel Identification Marks on Do. 800 L.C.D. Material of Screw shafts Steel Identification Marks on Do. 800 L.C.D.

Material of Steam Pipes Lapwelded steel Test pressure 540 lbs per sq. in.

Is an installation fitted for burning oil fuel yes, see below Is the flash point of the oil to be used over 150°F. yes

Have the requirements of Section 49 of the Rules been complied with except as below.

Is this machinery duplicate of a previous case no If so, state name of vessel —

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

The material and workmanship is good.

The machinery has been constructed under special survey and is eligible in my opinion for classification and the record + L.M.C. 3, 18. also fitted for oil fuel F.P. above 150°F when the fuel valves have been made workable from deck.

While's oil fuel installation has been fitted but the boilers are at present coal fired. The requirements of Sec 49 have been complied with except that the valves on the two settling tanks in the engine room and the master valve for the double bottom tanks (engine room port side) are not yet workable from deck. Superintendent stated that pods would be fitted when the coal in intervening bunkers has been used.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 3, 18.

It is further submitted the vessel will be eligible for record of "Fitted for oil fuel (with date) F.P. above 150°F" when the survey has been completed as stated above.

The amount of Entry Fee £ 3 : : When applied for, 15 MAR 1918
Special £ 43 : 16 :
Donkey Boiler Fee £ : :
Travelling Expenses (if any) £ : : When received, 9-4-1918

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

Committee's Minute TUE 19 MAR 1918
Assigned + L.M.C. 3, 18

TUE 22 AUG 1922
FRI 6 APR 1923
TUE OCT 10 1922
TUE NOV 28 1922
FRI 25 MAY 1923

MACHINERY CERTIFICATE
WRITTEN.

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Foundation