

REPORT ON MACHINERY

Received at London Office

Date of writing Report

When handed in at Local Office

6. 3. 18 Port of SUNDERLAND

No. in Survey held at Sunderland

Date, First Survey

29 June '17

Last Survey

5 March 1918

Reg. Book.

on the new steel S/S "CLAN MACBEAN"

(Number of Visits 24)

Gross 5052

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 expansion

No. of Cylinders 3

No. of Cranks 3

Dia. of Cylinders 27 1/2 - 45 - 75

Length of Stroke 48

Revs. per minute 70

Dia. of Screw shaft

as per rule 14.89

Material of screw shaft 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

Yes

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 14 1/2

Size of Crank webs 26x9 1/2

Dia. of thrust shaft under collars 14 1/2

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

Diameter of ditto 7

Stroke 24

Can one be overhauled while the other is at work

Yes

Steam cylinder 9 1/2

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 8 1/2 x 10 x 10, 7 1/2 x 4 x 10, 6 1/2 x 6

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

In Engine Room

3 @ 3 1/2

In Holds, &c. No 1 hold 2 @ 3 1/2, No 2 hold 2 @ 3 1/2

No. of Bilge Injections

1

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 stowhold 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

Yes

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

Yes

worked from Top platform

BOILERS, &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

Area of each valve

9.60

Pressure to which they are adjusted

185 lbs

Are they fitted with easing gear

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

5-0

Mean dia. of boilers

15.10 1/2

Length

11.10 1/2

Material of shell plates

Steel

Thickness

1 5/16

Range of tensile strength

28 1/2 - 32 tons

Are the shell plates welded or flanged

No

Descrip. of riveting: cir. seams

D.R.

long. seams

DBS, TR

Diameter of rivet holes in long. seams

1 3/8

Pitch of rivets

9 1/2

Lap of plates or width of butt straps

20 1/8

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

8 3/4 x 1 5/16

No. and Description of Furnaces in each boiler

3 Height

Material

Steel

Length of plain part

top 19

Thickness of plates

bottom 32

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

2 1/2

Back

3 1/2

Top

2 1/2

Bottom

1 1/8

Pitch of stays to ditto: Sides

8 1/2 x 8

Back

8 1/2 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

1.750

Area supported by each stay

680

Working pressure by rules

204

End plates in steam space

Material

Steel

Thickness

1 1/2

Pitch of stays

20 1/2 x 17

How are stays secured

DN & W

Working pressure by rules

209

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

15 1/2 x 8

Working pressure of plate by rules

187

Diameter of tubes

3 1/2

Pitch of tubes

4 1/2 x 4 1/2

Material of tube plates

Steel

Thickness: Front

29

Back

1 1/8

Mean pitch of stays

9 x 9

Pitch across wide water spaces

14 1/2

Working pressures by rules

261

Girders to Chamber tops: Material

Steel

Depth and thickness of girder at centre

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

Diameter

8

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 of 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

Adelphi

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 19-11-17 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 3/4" A 1 1/2" Centre boiler both 3/4" Star boiler both 3/4"

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 LMC 3, 18. also fitted for oil fuel FP above 150°F when the fuel valves have been made workable from deck with date

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. + LMC 3. 18.

It is further submitted the vessel will be eligible for record of "Fitted for oil fuel (with date) FP 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

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

Committee's Minute TUE 19 MAR 1918
Assigned + LMC 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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UNDERLAND. (of registered) to be used for