

REPORT ON MACHINERY.

No. 41461

Date of writing Report

When handed in at Local Office

Port of

Received at

Office

WED. 26 OCT. 1921

No. in Survey held at
Reg. Book.

Date, First Survey

Last Survey

1921

on the

S/S 'Blau Macnair'

(Number of Visits 85)

Gross

6094

Net

3727

When built 1921

Master

Built at

Dunne

By whom built

Ayrshire Dockyard & Co

Engines made at

Glasgow

By whom made

Dunlop & Jackson Ltd (S19) when made 1921

Boilers made at

ditto

By whom made

ditto

(S19) when made 1921

Registered Horse Power

Owners

Caygor & Co Ltd

Port belonging to

Glasgow

Nom. Horse Power as per Section 28

560

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

Yes

ENGINES, &c.—Description of Engines

Triple Expansion

No. of Cylinders

3

No. of Cranks

3

Dia. of Cylinders

24 1/2 - 48 1/2 - 48 1/2

Length of Stroke

54

Revs. per minute

12

Dia. of Screw shaft

as per rule 27 1/2

Material of

S

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

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

Yes

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

No

If two

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

No

Length of stern bush

99"

Dia. of Tunnel shaft

as per rule 14 1/2

Dia. of Crank shaft journals

as per rule 15 1/2

Dia. of Crank pin

15 1/2

Size of Crank webs

24 1/2 x 10 1/2

Dia. of thrust shaft under

collars

Dia. of screw

18-6

Pitch of Screw

19.0

No. of Blades

4

State whether moveable

Yes

Total surface

105 1/2 sq ft

No. of Feed pumps

2

Diameter of ditto

4 3/4

Stroke

30

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

2

Diameter of ditto

4 3/4

Stroke

30

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

6

Sizes of Pumps

2 1/2, 2 1/2, 2 1/2, 2 1/2, 2 1/2, 2 1/2

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

In Engine Room 2 1/2, 2 1/2, 2 1/2, 2 1/2, 2 1/2, 2 1/2 In Holds, &c. 9 1/2, 2 3/4, 2 3/4, 2 3/4, 2 3/4, 2 3/4

In Engine Room

2 1/2, 2 1/2, 2 1/2, 2 1/2, 2 1/2, 2 1/2

In Holds, &c.

9 1/2, 2 3/4, 2 3/4, 2 3/4, 2 3/4, 2 3/4

No. of Bilge Injections

No. of Bilge Injections

1

sizes

8"

Connected to circulating pump

Yes

Is a separate Donkey Suction fitted in Engine room & size

1.3 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

No

Are all connections with the sea direct on the skin of the ship

Yes

Are they Valves or Cocks

Lock

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

Below

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

Is the Screw Shaft Tunnel watertight

Yes

Is it fitted with a watertight door

Yes

worked from

Upper E.R. Platform

BOILERS, &c.—(Letter for record)

7806

Manufacturers of Steel

Blair & Co. Glasgow & Lanarkshire

Total Heating Surface of Boilers

7806

Is Forced Draft fitted

Yes

No. and Description of Boilers

3 Single Ended

Working Pressure

200

Tested by hydraulic pressure to

400

Date of test

21.1.21

No. of Certificate

15683

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

602 sq ft

No. and Description of Safety Valves to

each boiler

Double Spring

Area of each valve

9.62 sq ft

Pressure to which they are adjusted

205

Are they fitted with easing gear

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

30"

dia. of boilers

15.0 1/2

Length

12.0

Material of shell plates

S

Thickness

3/8"

Range of tensile strength

28-32

Are the shell plates welded or flanged

No

Descrip. of riveting: air. seams

DR

long. seams

TRIDBS

Diameter of rivet holes in long. seams

17/16"

Pitch of rivets

10

Lap of plates or width of butt straps

2 1/8"

Per centages of strength of longitudinal joint

rivets

86.5%

Working pressure of shell by rules

208

Size of manhole in shell

16 x 12"

Size of compensating ring

Flanged 13/8"

No. and Description of Furnaces in each boiler

3 Corrugated

Material

S

Outside diameter

48"

Length of plain part

top

bottom

Thickness of plates

crown

3 1/8"

Description of longitudinal joint

weld

No. of strengthening rings

—

Working pressure of furnace by the rules

209

Combustion chamber plates: Material

S

Thickness: Sides

11/16"

Back

11/16"

Top

11/16"

Bottom

1"

Pitch of stays to ditto: Sides

9 1/4 x 8 1/2"

Back

9 1/4 x 8 1/2"

Top

9 1/4 x 8 1/2"

If stays are fitted with nuts or riveted heads

No

Working pressure by rules

212

Material of stays

S

Area at smallest part

198 sq ft

Area supported by each stay

48.6 sq ft

Working pressure by rules

227

End plates in steam space:

Material

S

Material

S

Thickness

1 1/4"

Pitch of stays

20 1/4 x 16 1/4"

How are stays secured

ON

Working pressure by rules

209

Material of stays

S

Area at smallest part

69 sq ft

Area supported by each stay

326.8 sq ft

Working pressure by rules

210

Material of Front plates at bottom

S

Thickness

1 1/4"

Material of Lower back plate

S

Thickness

3/32"

Greatest pitch of stays

15 1/8"

Working pressure of plate by rules

218

Diameter of tubes

2 1/2"

Pitch of tubes

3 3/4 x 3 1/4"

Material of tube plates

S

Thickness: Front

1 1/4"

Back

7/8"

Mean pitch of stays

10 7/16"

Pitch across wide water spaces

13 1/2"

Working pressures by rules

203

Girders to Chamber tops: Material

S

Depth and

thickness of girder at centre

10.17 1/8"

Length as per rule

34 1/4"

Distance apart

83 1/4"

Working pressure by rules

206

Steam dome: description of joint to shell

—

% of strength of joint

—

Diameter

Thickness of shell plates

Material

Description of longitudinal joint

Diam. of rivet holes

Pitch of rivets

—

Working pressure of shell by rules

—

Crown plates

Thickness

How stayed

—

—

—

—

—

—

SUPERHEATER. Type

Date of Approval of Plan

Tested by Hydraulic Pressure to

Date of Test

Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler

Diameter of Safety Valve

Pressure to which each is adjusted

Is Easing Gear

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— 1 set each of top & bottom main bearing & coupling bolts, 1 Impeller shaft, 1 air pump rod, 1 set of rings for each piston, 1 Valve spindle for main engine, 1 pair of top end, 1 pair of bottom end brasses, 1 screw shaft, 1 set of feed & bilge, air pump valves & assorted hardware & a quantity of bolts & nuts of various sizes.

The foregoing is a correct description,

James Fletcher

Manufacturer

Dates of Survey while building	During progress of work in shops - -	1919 Sept 2-11, 25-28 Nov 3-8, 25-29 Dec 16, 19-23, 29 1920 Jan 12-21 Feb 5, 10-26 Mar 15-23, 29 Apr 13-20, 29
	During erection on board vessel - - -	May 3, 13, 23, 24, 28 Jun 4, 9, 17, 21, 29 July 1, 7, 14 Aug 11 Sep 8, 16, 17, 21-28 Oct 1-5, 6, 11, 14, 18-21, 25 Nov 2, 9, 9, 11, 12, 18, 22, 29
	Total No. of visits	85

Is the approved plan of main boiler forwarded herewith? *Yes*
 " " " donkey " " " *forwarded*

Dates of Examination of principal parts—Cylinders 14. 10 30 Slides 7. 2. 21 Covers 7. 2. 21 Pistons 28. 9. 19 Rods 12. 11. 20
Connecting rods 18. 10. 20 Crank shaft 26. 9. 19 Thrust shaft 26. 9. 19 Tunnel shafts 15. 11. 21 Screw shaft 13. 12. 20 Propeller 27. 1. 21
Stern tube 27. 1. 21 Steam pipes tested 31. 3. 21 Engine and boiler seatings 2. 2. 21 Engines holding down bolts 15. 5. 21
Completion of pumping arrangements 24. 5. 21 Boilers fixed 13. 4. 21 Engines tried under steam 15. 10. 21
Completion of fitting sea connections 14. 2. 21 Stern tube 2. 2. 21 Screw shaft and propeller 14. 2. 21
Main boiler safety valves adjusted 31. 5. 21 Thickness of adjusting washers P 7/16 S 1 1/2 P 25/64 S 3/4 P 7/16 S 1/2 F 7/16 A 7/16
Material of Crank shaft S Identification Mark on Do. 519 JS Material of Thrust shaft S Identification Mark on Do. 519 JS
Material of Tunnel shafts S Identification Marks on Do. 519 WGM Material of Screw shafts S Identification Marks on Do. 519 WGM
Material of Steam Pipes Iron Test pressure 600 lb

Is an installation fitted for burning oil fuel Yes 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 Yes
Is this machinery duplicate of a previous case Yes If so, state name of vessel S/S Blair Murdoch, M.C. Rab

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

These Eugene's Boilers have been built under Special Survey
in accordance with the approved plans & the workmanship
& material are of good quality.
They have been securely fitted on board & tried under
steam & found satisfactory.
The Machinery is tight in my opinion to be closed
with record of **X** LMC 10 21. (+ notation of fitted for
oil fuel FP above 150°F 10-21)

It is submitted that
this vessel is eligible for
THE PRIZE

THE RECORD. \mp L.M.C.-10.21. F.D. C.L.

Fitted for Oil Fuel ^{10.21} F.P. above 150° F

The amount of Entry Fee ... £ 6 : 0 ✓

Special £103: 1: 11

Donkey Boiler Fee ... £ 4 : 4 :

Travelling Expenses (if any) £ - : 18/- :

When applied for.

25-10-19

When received.

7.10.195

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

GLASGOW 25 OCT 1921

Assigned + LMC 1031

MACHINERY CERT.
WRITTEN, 11

FRI JUN 16 1922

TUE. MAR. 28 1922

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FR OCT 20 1922

1922
Foundation