

## REPORT ON MACHINERY.

No. 31646

Date of writing Report

19

When handed in at Local Office

23/2/20 Port of

Received at London Office

100, 24, 1920

No. in Survey held at  
Reg. Book.

Hull

Date, First Survey

2/12/18

Last Survey

12/2/19 20

on the

S.S. APPLE BRANCH.

(Number of Visits)

64

Tons

Gross 4452

Net 2726

When built

1920

Master

Built at

Hull

By whom built

Parker &amp; Co Ltd

Engines made at

Hull

By whom made

Do

when made

1920

Boilers made at

Hull

By whom made

Do

when made

1920

Registered Horse Power

Owners

Huntley &amp; P. Ltd

Port belonging to

Huntley &amp; P. Ltd

Nom. Horse Power as per Section 28

517

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

Yes

## ENGINES, &amp;c.—Description of Engines

Triple expansion

No. of Cylinders

Three

No. of Cranks

3

Dia. of Cylinders

27-44-73

Length of Stroke

48

Revs. per minute

78

Dia. of Screw shaft

as per rule

14.7

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

the propeller boss

Yes

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

No

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

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

Length of stern bush

60 1/2

Dia. of Tunnel shaft

as per rule 13.33

as fitted 13.5

Dia. of Crank shaft journals

as per rule 13.99

as fitted 14.5

Dia. of Crank pin

14 1/2

Size of Crank webs

9x22

Dia. of thrust shaft under

collars

14 3/4

Dia. of screw

17-6

Pitch of Screw

18-6

No. of Blades

4

State whether moveable

No

Total surface

100 sq

No. of Feed pumps

Two

Diameter of ditto

14 1/2

Stroke

24

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

Two

Diameter of ditto

4

Stroke

24

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

Three

Sizes of Pumps

Feed 10x8x22 Ballast 10x8x22

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

Engine Room

Four 3 1/2 dia.

General service 9 1/2 x 18

In Holds, &amp;c. Two 3 1/2 dia in nos 1, 2, 3 &amp; 4

No. of Bilge Injections

One

Size

13

Connected to condenser, or to circulating pump

Yes

Is a separate Donkey Suction fitted in Engine room &amp; 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

Yes

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

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 cover plate

Yes

That pipes are carried through the bunkers

Forward motion

How are they protected

Under close ceiling

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

Eng Room Top Grating

## BOILERS, &amp;c.—(Letter for record

S)

Manufacturers of Steel

J. Spencer &amp; Sons

Total Heating Surface of Boilers

7668 sq

Is Forced Draft fitted

Yes

No. and Description of Boilers

Three single ended

Working Pressure

180 lbs

Tested by hydraulic pressure to

360 lbs

Date of test

8/10/19

No. of Certificate

3396

3400

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

63.3 sq

No. and Description of Safety Valves to

each boiler

Two spring loaded

Area of each valve

9.6 sq

Pressure to which they are adjusted

185 lbs

Are they fitted with easing gear

Yes

Smallest distance between boilers or uptakes and bunkers

18 in ceiling

Mean dia. of boilers

18 1/2

Length

11-6

Material of shell plates

Steel

Thickness

1 1/2

Range of tensile strength

28 to 32 tons

Are the shell plates welded or flanged

No

Descrip. of riveting: cir. seams

D.R.

Long. seams

T.R. D.B.S.

Diameter of rivet holes in long. seams

1 1/8

Pitch of rivets

9 3/8

Lap of plates or width of butt straps

19 1/2

Percentages of strength of longitudinal joint

rivets 87.4

plate 85.7

Working pressure of shell by rules

182 lbs

Size of manhole in shell

16 x 12

Size of compensating ring

No.

No. and Description of Furnaces in each boiler

3 Brighton

Material

Steel

Outside diameter

50 1/2

Length of plain part

top 3

Thickness of plates

crown 3 1/2

bottom 3 1/2

Description of longitudinal joint

welded

No. of strengthening rings

No

Working pressure of furnace by the rules

188 lbs

Combustion chamber plates: Material

Steel

Thickness: Sides

23/32

Back

4

Top

2 1/2

Bottom

2 1/2

Pitch of stays to ditto

Sides 10 1/2 x 8 1/2

Back 10 x 8 1/2

Top 10 1/2 x 8 1/2

Are stays fitted with nuts or riveted heads

Yes

Working pressure by rules

182 lbs

Material of stays

Steel

Area at smallest part

2.40

Area supported by each stay

5.92

Working pressure by rules

202.5

End plates in steam space

Material

Steel

Thickness

1 1/2

Pitch of stays

2 1/2 x 20 1/2

How are stays secured

T.N.

Working pressure by rules

182 lbs

Material of stays

Steel

Area at smallest part

7.85

Area supported by each stay

4.45

Working pressure by rules

183

Material of Front plates at bottom

Steel

Thickness

3/2

Material of Lower back plate

Steel

Thickness

3/2

Greatest pitch of stays

13 1/2 x 8 1/2

Working pressure of plate by rules

182 lbs

Diameter of tubes

2 3/4

Pitch of tubes

3 1/2 x 4 1/2

Material of tube plates

Steel

Thickness: Front

3/2

Back

5/8

Mean pitch of stays

10

Pitch across wide water spaces

13 1/2

Working pressures by rules

181 lbs

Girders to Chamber tops: Material

Steel

Depth and

Thickness of girder at centre

10 1/2 x 1 1/2

Length as per rule

30 1/2

Working pressure by rules

181 lbs

Steam dome: description of joint to shell

Yes

% of strength of joint

No

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

No

## SUPERHEATER. Type

No.

Date of Approval of Plan

No.

Tested by Hydraulic Pressure to

Date of Test



IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded? *-*

SPARE GEAR. State the articles supplied:—

*Two top end, two bottom end, two main bearing bolts  
& nuts, 3 crank shaft & 3 tunnel shaft bolts & nuts, 2 feed & 2 bilge valves,  
3 main & 3 donkey check valves, 6 cylinders & 6 steam chest studs & nuts,  
12 junk ring studs & nuts, one propeller, 6 air pump valves, packing  
for piston & slide valve rods, a quantity of bolts & nuts & iron of  
various sizes, 12 barometer tubes, 50 Gamules, &c.*

The foregoing is a correct description,

FOR EARLES SHIPBUILDING & ENGINEERING CO.

SECRETARY Manufacturer.

Dates of Survey while building  
During progress of work in shops --  
During erection on board vessel --  
Total No. of visits

*2/12/18 to 12/2/20*

*64*

Is the approved plan of main boiler forwarded herewith *yes*

" " " donkey " " " *yes*

Dates of Examination of principal parts—Cylinders *15/5/19* Slides *4/7/19* Covers *4/7/19* Pistons *17/6/19* Rods *24/6/19*  
Connecting rods *17/6/19* Crank shaft *2/6/19* Thrust shaft *2/6/19* Tunnel shafts *2/11/19* Screw shaft *26/9/19* Propeller *26/9/19*  
Stern tube *26/9/19* Steam pipes tested *26/11/20* Engine and boiler seatings *3/10/19* Engines holding down bolts *3/10/19*  
Completion of pumping arrangements *14/2/20* Boilers fixed *5/2/20* Engines tried under steam *14/2/20*  
Completion of fitting sea connections *14/10/19* Stern tube *14/10/19* Screw shaft and propeller  
Main boiler safety valves adjusted *5/2/20* Thickness of adjusting washers *5 1/2" 5 1/2" 5 1/2" 5 1/2"*  
Material of Crank shaft *Steel* Identification Mark on Do. *2960 MR* Material of Thrust shaft *Steel* Identification Mark on Do. *2960 MR*  
Material of Tunnel shafts *Steel* Identification Marks on Do. *2960 MR* Material of Screw shafts *Steel* Identification Marks on Do. *4050 MR*  
Material of Steam Pipes *Lap welded Steel* Test pressure *540 lbs*

Is an installation fitted for burning oil fuel *No*

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

Is this machinery duplicate of a previous case *yes* If so, state name of vessel *Standard B Type*

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

*The engines & boilers of this vessel have been built under special survey, & the materials & workmanship are good. On completion they were examined while running full power trials in the Chamber & found satisfactory. The machinery throughout is now in good & efficient condition, & eligible in our opinion to have the record LMC-2-20 marked in Red in the Builder's Register Book.*

It is submitted that this vessel is eligible for

*+ L.M.C. 2-20 F.D.*

*24/2/20*

*JWD*

*GRK*

The amount of Entry Fee ... £ *98-17-4*  
Special ... £ : :  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ *1-10-0*

When applied for, *23/2/19 20*

When received, *24/3/19 20*

*Herbert L. Sutherland*

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

*FRI. 27 FEB. 1920*

Assigned

*+ L.M.C. 2-20 F.D.*



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