

## REPORT ON MACHINERY.

No. 13296

Received at London Office

MON. 7 MAY. 1923

Date of writing Report

10

When handed in at Local Office

5. 5. 1923

Port of Aberdeen

No. in Survey held at  
Reg. Book.  
on the

Aberdeen

Date, First Survey

15. 1. 21.

Last Survey

25. 4. 1923.

(Number of Visits 50)

S.S. "COPTHORNE."

Tons { Gross 1450.  
Net 884.

When built 1923.

Master

Built at Aberdeen

By whom built

John Lewis &amp; Sons Ltd. N° 94

Engines made at

Aberdeen

By whom made

John Lewis &amp; Sons Ltd. N° 164

when made 1923.

Boilers made at

do.

By whom made

do

do N° 129 &amp; 30 when made 1923.

Registered Horse Power

148.

Owner E. Y. Lindley.

Port belonging to London.

Nom. Horse Power as per Section 28

148. 179.

Is Refrigerating Machinery fitted for cargo purposes

no.

Is Electric Light fitted

no.

ENGINES, &amp;c.—Description of Engines

Triple Expansion

No. of Cylinders 3.

No. of Cranks 3.

Dia. of Cylinders

18 1/4", 28 1/2", 48 1/4"

Length of Stroke

33"

Revs. per minute

84.

Dia. of Screw shaft

as per rule 9.88

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

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

no space

If two

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

yes

Length of stern bush

3' 5"

Dia. of Tunnel shaft

as per rule 8.989

Dia. of Crank shaft journals

as per rule 9.438

Dia. of Crank pin

9 5/8"

Size of Crank webs

6 3/4" x 1 1/2"

Dia. of thrust shaft under

collars

9 5/8"

Dia. of screw

11" 10"

Pitch of Screw

14" 6"

No. of Blades

4

State whether moveable

no.

Total surface

56.7

No. of Feed pumps

2.

Diameter of ditto

3 3/8"

Stroke

16"

Can one be overhauled while the other is at work

yes.

No. of Bilge pumps

2.

Diameter of ditto

3 3/8"

Stroke

16"

Can one be overhauled while the other is at work

yes.

No. of Donkey Engines

2.

Sizes of Pumps

BALLAST. 8" x 9" x 8" DUPLEX

GENERAL. 6" x 4" x 6"

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

In Engine Room

3 of 2 1/2"

Tunnel well 1 of 2 1/2"

In Holds, &amp;c. N° 1 HOLD. 2 of 2 1/2"

N° 2 HOLD. 3 of 2 1/2"

No. of Bilge Injections

1.

sizes

6.

Connected to condenser, or to circulating pump

C.P.

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

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

bilge suction from forehold.

How are they protected

strong wood casing

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 gratings in eng room.

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

Manufacturers of Steel

B. Colville &amp; Sons Ltd. &amp; Steel Coy of Scotland Ltd.

Total Heating Surface of Boilers

3236.7

Is Forced Draft fitted

no.

No. and Description of Boilers

2. Single ended (N° 129 &amp; 130)

Working Pressure

180 lbs.

Tested by hydraulic pressure to

320.

Date of test

130. 19. 23.

No. of Certificate

N° 130-1014.

Can each boiler be worked separately

yes.

Area of fire grate in each boiler

52.147

No. and Description of Safety Valves to

each boiler

2. direct spring

Area of each valve

5.9

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

about 4"

INTERNAL

Mean dia. of boilers

13' 0"

Length

10' 6"

Material of shell plates

S.

Thickness

1 1/8"

Range of tensile strength

28-32

Are the shell plates welded or flanged

no.

Descrip. of riveting: cir. seams

d. r. lap.

long. seams

7 R. D.B.S.

Diameter of rivet holes in long. seams

1 3/16"

Pitch of rivets

2" 4 3/4"

1 ROW. 8 1/2"

Lap of plates or

width of butt straps

14 3/8" x 10 1/2"

2 1/2"

Per centages of strength of longitudinal joint

rivets. 88.9

plate. 85.6

Working pressure of shell by rules

193.

Size of manhole in shell

16' x 12"

Size of compensating ring

4" x 1 1/4"

No. and Description of Furnaces in each boiler

3. Plain

Material

S.

Outside diameter

39 1/2"

Length of plain part

top 82"

bottom 45"

Thickness of plates

crown 3 1/4"

Description of longitudinal joint

weld.

No. of strengthening rings

1. angle

3 1/2" x 3 1/2" x 2 1/2"

Working pressure of furnace by the rules

180.

Combustion chamber plates: Material

S.

Thickness: Sides

1 1/6"

Back

3 1/2"

Top

1 1/6"

Bottom

1 1/6"

Pitch of stays to ditto: Sides

9 1/2" x 8 1/2"

Back

9 1/2" x 8"

Top

9 1/2" x 1 1/2"

If stays are fitted with nuts or riveted heads

nuts.

Working pressure by rules

192.9

Material of stays

S.

Area at smallest part

1.46

Area supported by each stay

46

Working pressure by rules

185.

End plates in steam space:

Material

S.

Material

S.

Thickness

1 1/8"

Pitch of stays

18" x 18"

How are stays secured

D. N. W.

Working pressure by rules

185.

Material of stays

S.

Area at smallest part

6.33

Area supported by each stay

324.

Working pressure by rules

203.

Material of Front plates at bottom

S.

Thickness

1 1/2"

Material of Lower back plate

S.

Thickness

3 1/2"

Greatest pitch of stays

14 1/4"

Working pressure of plate by rules

193.

Diameter of tubes

3 1/2" EXT.

Pitch of tubes

4 3/4" x 4 3/4"

Material of tube plates

S.

Thickness: Front

1 1/2"

Back

3 1/2"

Mean pitch of stays

9 1/2"

Pitch across wide water spaces

14 1/2"

Working pressures by rules

F. 181.2

Girders to Chamber tops: Material

S.

Depth and

thickness of girder at centre

8 1/4" x 1 1/8"

Length as per rule

24 1/2"

Distance apart

4 1/2"

Number and pitch of stays in each

two. 9 1/2"

Working pressure by rules

219.

Steam dome: description of joint to shell

NONE.

% 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

NONE.

Date of Approval of Plan

IS A DONKEY BOILER FITTED? NO.

If so, is a report now forwarded? ✓

SPARE GEAR. State the articles supplied:— Two top, & 2 bottom end bolts nuts; 2 main bearings & 1 set coupling bolts nuts; 1 set each. Air, Feed & Bilge pump valves; 1 each, main & donkey check valve; 2 safety valve springs; 1 escape valve spring each size; 6 boiler tubes & condenser tubes & ferrules; bolts nuts assorted, and iron of various sizes. 1 propeller, bored & keyway cut.

The foregoing is a correct description,  
FOR JOHN LEWIS & SONS, LTD.,

Jan J. Donald

Manufacturers of main engines & boilers.

Dates of Survey while building { During progress of work in shops - - 1921 Jan 15, 17, 26, 29 - Oct 18 - Nov 25 - Dec 14 - 1922 Jan 9, 14, 22 - Feb 4, 9, 15, 21, 23, 24 - Mar 15, 23 - Apr 6, 19 - Aug 1, 14, 21, 26 - Sep 15 - During erection on board vessel - - - Oct 25 - Nov 8, 21, 23 - Dec 5, 15, 24 - 1923 Jan 5, 18 - Feb 6, 8, 19, 23, 28 - Mar 5, 13, 19, 24, 27, 29, 31 - Apr 3, 4, 9, 10, 11, 19, 20, 24, 25 - Total No. of visits 55

Is the approved plan of main boiler forwarded herewith yes. ✓  
" " " donkey " " " ✓

Dates of Examination of principal parts—Cylinders 19.2.23 Slides 6.2.23 Covers 19.2.23 Pistons 19.2.23 Rods 28.2.23 Connecting rods 28.2.23 Crank shaft 23.1.22 Thrust shaft 15.1.21 Tunnel shafts 15.1.21 Screw shaft 15.1.21 Propeller 24.3.23 Stern tube 24.3.23 Steam pipes tested 19.4.23 Engine and boiler seatings 24.3.23 Engines holding down bolts 10.4.23 Completion of pumping arrangements 10.4.23 Boilers fixed 10.4.23 Engines tried under steam 25.4.23 Completion of fitting sea connections 24.3.23 Stern tube 29.3.23 Screw shaft and propeller 29.3.23 Main boiler safety valves adjusted 25.4.23 Thickness of adjusting washers Port Boiler 9 3/8" Full S 3/8" Starb Boiler 9 3/8" S 3/8"

Material of Crank shaft S Identification Mark on Do. N° 5227 L.M.C. Material of Thrust shaft S Identification Mark on Do. 1344A.

Material of Tunnel shafts S Identification Marks on Do. SEE BELOW Material of Screw shafts S Identification Marks on Do. 1346A.

Material of Steam Pipes Copper solid drawn 3 1/2" bore No. 41.W.R. Test pressure 360 lbs per sq inch ✓

Is an installation fitted for burning oil fuel NO. ✓ Is the flash point of the oil to be used over 150°F. ✓

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 "Haud Slewellyn" Aln & Co Rep N° 12774.

General Remarks (State quality of workmanship, opinions as to class, &c. These engines and boilers have been constructed under special survey, and in accordance with the Secretary's letter, the Rules, and approved plans. The materials and workmanship are good. When completed and properly fitted on board they were tried under steam with satisfactory results, and are now in good order, and in my opinion entitled to the record L.M.C. 4.23 in the Register Book.

Intermediate shafting Identification Nos. 1342A - 1343A - 1344A - 1345A -

It is submitted that  
this vessel is eligible for  
THE RECORD. + LMC 4.23. CL.

The amount of Entry Fee ... £ 3 : : When applied for,  
Special ... £ 44 : 10 : : 5.5.1923  
Donkey Boiler Fee ... £ : : :  
Travelling Expenses (if any) £ : : : When received, 1/5/23

Committee's Minute

Assigned

TUE. 8 MAY. 1923

+ LMC 4.23  
C.L.

Ridley Howell  
Engineer Surveyor to Lloyd's Register of Shipping.



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Foundation