

REPORT ON MACHINERY.

No. 34998

Received at London Office

FRI. FEB 29 1924

Date of writing Report Feb. 21st 1924 When handed in at Local Office

26-2

1924

Port of Hull

No. in Survey held at
Reg. Book.

Hull & Goole.

Date, First Survey Jan 10/23

Last Survey Feb. 19th 1924

on the

S.S. "HARFREY"

(Number of Visits) 39

Gross 901

Net 438.

When built 1924.

Master

Built at Goole.

By whom built Goole S.B. Cold.

Engines made at

Hull

By whom made

Charles S.B. & Co. Ltd.

when made 1924

Boilers made at

Hull

By whom made

Charles S.B. & Co. Ltd.

when made 1924

Registered Horse Power

Owners J. Hargreaves & Co.

Port belonging to

Nom. Horse Power as per Section 28 129

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 16. 27. 44 Length of Stroke 33

Revs. per minute

Dia. of Screw shaft

as per rule 10"

Material of Steel

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

No

Is the after end of the liner made water tight

in the propeller boss

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 46"

Dia. of Tunnel shaft

as per rule 8.4

Dia. of Crank shaft journals

as per rule 8.8

Dia. of Crank pin 9 1/4"

Size of Crank webs 18" x 6"

Dia. of thrust shaft under

collars 9 1/4"

Dia. of screw 12'-0"

Pitch of Screw 14'-3"

No. of Blades 4

State whether moveable

No

Total surface 46 sq. feet.

No. of Feed pumps 2

Diameter of ditto 2 3/4"

Stroke 20

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps 2

Diameter of ditto 2 3/4"

Stroke 20

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines Two

Sizes of Pumps 8 x 8 x 8 Ballast

6 x 4 x 6 Feed

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

In Engine Room Three, 2 1/4"

A.P.T. 1 @ 3"

In Holds, &c. F.P.T. 1 @ 3"

Hold 2 @ 2 3/4"

No. of Bilge Injections 1

sizes 4 1/2"

Connected to condenser, or to circulating pump

Yes

Is a separate Donkey Suction fitted in Engine room & size

Yes 3"

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

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

Forward Suctions.

How are they protected

Wood casings.

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

None

Is it fitted with a watertight door

Yes

worked from

BOILERS, &c.—(Letter for record (S))

Manufacturers of Steel

Hargreaves & Co. Ltd. Birmingham & Co. Ltd. & Co. Ltd.

Total Heating Surface of Boilers 2107 sq. ft.

Is Forced Draft fitted

No

No. and Description of Boilers 1 Single Ended.

Working Pressure 180 lbs. sq. in.

Tested by hydraulic pressure to 320 lbs. sq. in.

Date of test 1/6/23.

No. of Certificate 3511.

Can each boiler be worked separately

Yes

Area of fire grate in each boiler 64 sq. ft.

No. and Description of Safety Valves to

each boiler 2 Spring loaded

Area of each valve 7.06 sq. in.

Pressure to which they are adjusted 180 lbs. sq. in.

Are they fitted with easing gear

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 3'-6"

Yes

Mean dia. of boilers 15'-6"

Length 10'-6"

Material of shell plates Steel

Thickness 1 1/4"

Range of tensile strength 28/32

Are the shell plates welded or flanged

Yes

Descrip. of riveting: cir. seams

DR.

long. seams T.R. 535

Diameter of rivet holes in long. seams 1 1/4"

Pitch of rivets 8 3/4"

Lap of plates or width of butt straps 18 1/2"

Yes

Per centages of strength of longitudinal joint

rivets 86.0

plate 85.4

Working pressure of shell by rules 180.5

Size of manhole in shell 16" x 12"

END.

Size of compensating ring

Yes

No. and Description of Furnaces in each boiler 3 Brighton

Material Steel, Outside diameter 45.68

Length of plain part

top 3' 10 1/2"

bottom 3' 10 1/2"

Thickness of plates

crown 19"

bottom 32"

Description of longitudinal joint

Butted

No. of strengthening rings

Working pressure of furnace by the rules 188

Combustion chamber plates: Material Steel

Thickness: Sides 23/32

Back 21/32

Top 21/32

Bottom 23/32

Working pressure by rules 183.

Pitch of stays to ditto: Sides 9 1/4" x 10 1/2"

Back 10" x 8"

Top 10 1/2" x 7 1/2"

If stays are fitted with nuts or riveted heads

Nuts

Working pressure by rules 183.

Material of stays Steel

Area at smallest part 1.76

Area supported by each stay 97.0

Working pressure by rules 187

End plates in steam space:

Material Steel

Thickness 1 1/2"

Pitch of stays 21" x 20"

How are stays secured

DN.

Working pressure by rules 183

Material of stays Steel

Area at smallest part 4.24

Area supported by each stay 420.0

Working pressure by rules 192

Material of Front plates at bottom Steel

Thickness 29/32

Material of Lower back plate Steel

Thickness 27/32

Greatest pitch of stays 14" x 8"

Working pressure of plate by rules 224

Diameter of tubes 3 1/2"

Pitch of tubes 4 3/4"

Material of tube plates Steel

Thickness: Front 29/32

Back 27/32

Mean pitch of stays 9.5

Yes

Pitch across wide water spaces 14"

Working pressures by rules 183

Girders to Chamber tops: Material Steel

Depth and

thickness of girder at centre 9 3/8" x 3/4" (2)

Length as per rule 30 3/4"

Distance apart 10 1/4"

Number and pitch of stays in each 3 @ 4 1/2"

Working pressure by rules 180

Steam dome: description of joint to shell

Yes

% of strength of joint

Yes

Diameter

Yes

Thickness of shell plates

Yes

Material

Yes

Description of longitudinal joint

Yes

Diam. of rivet holes

Yes

Pitch of rivets

Yes

Working pressure of shell by rules

Yes

Crown plates

Yes

Thickness

Yes

How stayed

Yes

SUPERHEATER. Type

Yes

Date of Approval of Plan

Yes

Tested by Hydraulic Pressure to

Yes

Date of Test

Yes

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

Yes

Diameter of Safety Valve

Yes

Pressure to which each is adjusted

Yes

Is Easing Gear fitted

Yes

IS A DONKEY BOILER FITTED?

Yes.

If so, is a report now forwarded?

Yes.

SPARE GEAR. State the articles supplied:— 2 Bottom end bolts + nuts. 2 Top end bolts + nuts. 2 main bearing bolts + nuts. Set of coupling bolts + nuts. Spare valves for air, circulating, feed + bilge pumps. 6 junk ring studs. main + donkey check valves. 1 Safety valve spring. 1 Propeller.

The foregoing is a correct description,

FOR AND ON BEHALF OF
EARLE'S SHIPBUILDING & ENGINEERING CO. LTD.

Manufacturer.

Dates of Survey while building { During progress of work in shops -- 1923: Jan 10. 18. 23. 31. Feb 21. 26. Mar 8. 15. 20. 27. 28. Apr 3. 4. 11. 17. 20. 23. May 3. 8. 10. 14. 16. 25. 29. Jun 1. 8. 12. Dec 10. 1924: Jan 16. 17. 18. 19. 22. 23. 29. Feb 26. 29. Feb 12. 19 =
During erection on board vessel --
Total No. of visits 39

Is the approved plan of main boiler forwarded herewith

Yes.

" " " donkey " " " Yes.

Dates of Examination of principal parts—Cylinders 28/5/23 Slides 8/6/23 Covers 28/5/23. Pistons 8/6/23. Rods 14/5/23. Connecting rods 14/5/23. Crank shaft 8/5/23 Thrust shaft 16/5/23 Tunnel shafts ✓ Screw shaft 16/5/23. Propeller 22/1/24. Stern tube 28/5/23 Steam pipes tested Engine and boiler seatings 16.1.24 Engines holding down bolts 23.1.24. Completion of pumping arrangements 26/1/24 Boilers fixed 16.1.24 Engines tried under steam 26.1.24. ✓ Completion of fitting sea connections 10.12.23 Stern tube 10.12.23 Screw shaft and propeller 10.12.23. Main boiler safety valves adjusted 26.1.24. Thickness of adjusting washers S. 5/16. P. 3/8. ✓

Material of Crank shaft Steel Identification Mark on Do. N° 19. P.F. Material of Thrust shaft Steel Identification Mark on Do. N° 19. T.H.M.

Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts Steel Identification Marks on Do. N° 19. T.H.M.

Material of Steam Pipes S.D. Copper. 5" Bore x 5 W.S. Test pressure 360 lbs sq in ✓

Is an installation fitted for burning oil fuel ✓ 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 ✓ If so, state name of vessel ✓

General Remarks (State quality of workmanship, opinions as to class, &c. The engines + boilers of this vessel have been built under special survey + in accordance with the approved plans and Rule requirements. Materials + workmanship are good. The machinery fitted on board satisfactorily, tried under working conditions + found in order. Pumping arrangements in good order. Safety valves adjusted as above. The machinery is eligible in my opinion to have record in the Register Book of L.M.C. 2.24.

It is submitted that
this vessel is eligible for
THE RECORD + L.M.C. 2.24.

A.H.B.
3/3/24
C.M.S.

The amount of Entry Fee ... £ 3 : 0 :
Special ... £ 32 : 5 :
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :
When applied for, 26/2/24
When received, 25/3/24

Committee's Minute

Assigned

FR MAR 7 1924

+ L.M.C. 2.24

John Mackenzie
Engineer Surveyor to Lloyd's Register of Shipping.



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Foundation