

REPORT ON MACHINERY.

No. 28378

Received at London Office

Date of writing Report

10

When handed in at Local Office

24 JUL 1922

Port of

SUNDERLAND.

TUE. 25 JUL. 1922

No. in Survey held at SUNDERLAND.

Date, First Survey 1st Dec. 1921 Last Survey 13th July 1922

Reg. Book.

65714 on the new steel S/S "LIGHTFOOT"

(Number of Visits 19)

Gross 1894

Net 1103

Master Built at Sunderland By whom built J. Brown & Sons (S/S No 169) When built 1922

Engines made at Sunderland By whom made N.E. Marine Engineering Co. Ltd (No 2481) when made 1922

Boilers made at Sunderland By whom made N.E. Marine Engineering Co. Ltd (No 2481) when made 1922

Registered Horse Power Owners The Hill Steam Shipping Co. Ltd. Port belonging to Newcastle

Nom. Horse Power as per Section 28 199 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 20½", 33", 54" Length of Stroke 39" Revs. per minute 70 Dia. of Screw shaft as per rule 11.82" Material of J. 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 If two

liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 3'-11½"

Dia. of Tunnel shaft as per rule 10.318" Dia. of Crank shaft journals as per rule 10.833" Dia. of Crank pin 10.75" Size of Crank webs 16" x 6½"

collars 10.75" Dia. of screw 14'-9" Pitch of Screw 15'-6" No. of Blades 4 State whether moveable no Total surface 680 ft

No. of Feed pumps 2 Diameter of ditto 3" Stroke 1'-9" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 3½" Stroke 1'-9" Can one be overhauled while the other is at work yes

No. of Donkey Engines Two Sizes of Pumps 5½" x 3½" x 5" FEED 7" x 9" x 9" BALLAST No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 2 @ 2½" & 1 @ 4" in well In Holds, &c. Forward hold, - 2 @ 2½" After hold

- 2 @ 2¾", Tunnel well, 1 @ 2¾"

No. of Bilge Injections 1 sizes 4" Connected to condenser, or to circulating pump b.p. 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 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 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 hold suction How are they protected under timber boards

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 top platform

BOILERS, &c.—(Letter for record 5) Manufacturers of Steel John Spencer & Sons Ltd. 2 S.B.

Total Heating Surface of Boilers 30920 ft² Is Forced Draft fitted no No. and Description of Boilers Two single ended marine

Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 27-1-21 No. of Certificate 3748

Can each boiler be worked separately yes Area of fire grate in each boiler 38.50 ft² No. and Description of Safety Valves to

each boiler two, direct spring Area of each valve 4.90" Pressure to which they are adjusted 185 Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 2'-6" Mean dia. of boilers 13'-0" Length 10'-6" Material of shell plates steel

Thickness 1½" Range of tensile strength 28-32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 15.10

long. seams DBS. TR Diameter of rivet holes in long. seams 1½" Pitch of rivets 9 9/16" Lap of plates or width of butt straps 19"

Per centages of strength of longitudinal joint rivets 86.69 Working pressure of shell by rules 180 Size of manhole in shell 16" x 12"

Size of compensating ring flanged No. and Description of Furnaces in each boiler 2 Deighton Material steel Outside diameter 3'-9 3/8"

Length of plain part top bottom Thickness of plates crown 1½" bottom 1 1/32" Description of longitudinal joint welded No. of strengthening rings

Working pressure of furnace by the rules 180 Combustion chamber plates: Material steel Thickness: Sides 3/4" Back 25/32" Top 3/4" Bottom 15/16"

Pitch of stays to ditto: Sides 11 1/8" x 8 1/2" Back 10 1/8" x 10 1/4" Top 11" x 8 1/2" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 181

Material of stays steel Area at smallest part 2.030" Area supported by each stay 100.80" Working pressure by rules 181 End plates in steam space:

Material steel Thickness 1½" Pitch of stays 22" x 18" How are stays secured DN&W Working pressure by rules 183 Material of stays steel

Area at smallest part 6.80" Area supported by each stay 396.0" Working pressure by rules 180 Material of Front plates at bottom steel

Thickness 3/4" Material of Lower back plate steel Thickness 15/16" Greatest pitch of stays 14 1/2" x 10 3/4" Working pressure of plate by rules 185

Diameter of tubes 3 1/4" Pitch of tubes 4 3/4" x 4 1/16" Material of tube plates steel Thickness: Front 3/4" Back 3/4" Mean pitch of stays 10 5/8"

Pitch across wide water spaces 4 1/2" (5/8" BP) Working pressures by rules 192 Girders to Chamber tops: Material steel Depth and

thickness of girder at centre 2 @ 9 1/8" x 3/4" Length as per rule 2'-6 1/2" Distance apart 11" Number and pitch of stays in each 2 @ 8 1/2"

Working pressure by rules 180 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 Horizontal 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 fitted

003434-003443-0307

IS A DONKEY BOILER FITTED? *no*

If so, is a report now forwarded? *✓*

SPARE GEAR. State the articles supplied:— *Two connecting rods top and bottom end bolts and nuts, two main bearing bolts, one set of coupling bolts, one set of feed and bilge pump valves, iron and bolts of various sizes one propeller.*

The foregoing is a correct description,
FOR THE NORTH EASTERN MARINE ENGINEERING CO. LTD

O. F. Adams. Manufacturer.

Dates of Survey while building { During progress of work in shops - - } 1921. Dec. 1. 1922. Jan. 27. 31. Feb. 3. 17. 20. 22. Mar. 19. 16. 22. 21. 29. May. 8. June 28. July 14. 5. 7. 13
{ During erection on board vessel - - - }
Total No. of visits *19*

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

Dates of Examination of principal parts—Cylinders *20-2-22* Slides *16-3-22* Covers *16-3-22* Pistons *22-2-22* Rods *1-3-22*
Connecting rods *29-3-22* Crank shaft *27-1-22* Thrust shaft *27-1-22* Tunnel shafts *27-1-22* Screw shaft *29-3-22* Propeller *9-3-22*
Stern tube *29-3-22* Steam pipes tested *4-7-22* Engine and boiler seatings *8-5-22* Engines holding down bolts *5-7-22*

Completion of pumping arrangements *7-7-22* Boilers fixed *5-7-22* Engines tried under steam *7-7-22*
Completion of fitting sea connections *8-5-22* Stern tube *28-6-22* Screw shaft and propeller *28-6-22*

Main boiler safety valves adjusted *7-7-22* Thickness of adjusting washers *all 7" 16"*

Material of Crank shaft *Steel* Identification Mark on Do. *LLOYD'S N° 2481 L.C.D. 27-1-22* Material of Thrust shaft *Steel* Identification Mark on Do. *LLOYD'S N° 2481 L.C.D.*
Material of Tunnel shafts *Steel* Identification Marks on Do. *L.C.D.* Material of Screw shafts *Steel* Identification Marks on Do. *L.C.D.*

Material of Steam Pipes *Lapwelded wrought iron* Test pressure *600 lbs per sq. in.*

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 *no* If so, state name of vessel *—*

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

*The materials and workmanship are good.
The machinery has been constructed under special survey and is eligible in my opinion for classification and the record + LMC 7, 22.*

It is submitted that
this vessel is eligible for
THE RECORD. + LMC 7. 22. CL.

W.D. 26/7/22 *Ans.*

The amount of Entry Fee ... £ *3* : - :
Special ... £ *49* : *15* :
* Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :
When applied for, *24 JUL 1922*
When received, *19/8/22*

S. C. Davis.
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. JUL 28 1922*

Assigned

+ LMC 7. 22

MACHINERY DEPT
WRITTEN



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Foundation