

REPORT ON MACHINERY.

No. 26515
THU. JUL. 24. 1913

4. **Writing Report** 19 When handed in at Local Office 16-7-13 Port of Hull
Survey held at Hull & Goole. Date, First Survey Dec 3rd Last Survey July 16th 1913
Ship the steel screw steamer Dornes (Number of Visits 39) Gross Tons 726 Net Tons 351
Built at Goole By whom built Goole & Ryegate Ltd When built 1913-7
Made at Hull By whom made Earle & Co Ltd when made 1913-7
Registered Horse Power Owners (H. Fische) Port belonging to Bodö

Horse Power as per Section 28 109 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders Three No. of Cranks 3
of Cylinders 15"-25"-40" Length of Stroke 27" Revs. per minute 95 Dia. of Screw shaft as per rule 9.065" Material of screw shaft steel
as fitted 7 1/2" Dia. of Crank pin 7 1/2" Size of Crank webs 5 1/2" x 5" Dia. of thrust shaft under

screw shaft fitted with a continuous liner the whole length of the stern tube no liners Is the after end of the liner made water tight
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

are fitted, is the shaft lapped or protected between the liners Length of stern bush 4'-0"

of Tunnel shaft as per rule 7.46" Dia. of Crank shaft journals as per rule 7.83" Dia. of Crank pin 7 1/2" State whether moveable no Total surface 40'-0"

of Feed pumps two Diameter of ditto 2 1/4" Stroke 18" Can one be overhauled while the other is at work yes

of Bilge pumps two Diameter of ditto 2 1/4" Stroke 18" Can one be overhauled while the other is at work yes

of Donkey Engines two duplex Sizes of Pumps 6" x 7 1/2" x 6" Bilge & Ballast No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room three 2" dia. one 2" in tunnel well In Holds, &c. Two 2" dia. in each compartment

of Bilge Injections one sizes 3 1/2" Connected to condenser, or to circulating pump pumps Is a separate Donkey Suction fitted in Engine room & size yes 2 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 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 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

Dates of examination of completion of fitting of Sea Connections 1-4-13 of Stern Tube 14-6-13 Screw shaft and Propeller 16-6-13

Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from top platform

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Steel Co. of Scotland

Total Heating Surface of Boilers 1950^{sq} Is Forced Draft fitted no No. and Description of Boilers one single ended

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 4-4-13 No. of Certificate 1972

Can each boiler be worked separately yes Area of fire grate in each boiler 59^{sq} No. and Description of Safety Valves to

each boiler two spring loaded Area of each valve 5.94^{sq} Pressure to which they are adjusted 185 lbs Are they fitted with easing gear yes

Smallest distance between boilers and bunkers or woodwork 9" No. dia. of boilers 17 1/2" Length 10'-9" Material of shell plates steel

Thickness 1 5/16" Range of tensile strength 28-32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams double

long. seams J.R.D.B.S. Diameter of rivet holes in long. seams 1 5/16" Pitch of rivets 9 1/8" Lap of plates or width of butt straps 19 1/2"

Per centages of strength of longitudinal joint rivets 83.8 Working pressure of shell by rules 201 Size of manhole in shell 12" x 16"

Size of compensating ring 8 1/2" x 1 5/16" No. and Description of Furnaces in each boiler 3 plain Material Steel Outside diameter 42 5/8"

Length of plain part top 82 7/8" Thickness of plates crown 7 13/16" Description of longitudinal joint welded No. of strengthening rings

Working pressure of furnace by the rules 189 Combustion chamber plates: Material S Thickness: Sides 2 1/32" Back 1 1/16" Top 2 1/32" Bottom 3 1/32"

Pitch of stays to ditto: Sides 9 1/2" x 8" Back 9 3/4" x 8" Top 8 1/2" x 8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 206

Material of stays steel Diameter at smallest part 1.76" Area supported by each stay 78^{sq} Working pressure by rules 194 Material of stays S

Material S Thickness 1 7/32" Pitch of stays 19" x 18" How are stays secured A. H. Working pressure by rules 224 Material of Front plates at bottom S

Diameter at smallest part 7.39" Area supported by each stay 342^{sq} Working pressure of plate by rules 195

Thickness 1 5/16" Material of Lower back plate S Thickness 7/8" Greatest pitch of stays 13 1/2" x 8 7/8" Working pressure of plate by rules 195

Diameter of tubes 3 1/2" Pitch of tubes 4 7/8" x 4 3/4" Material of tube plates S Thickness: Front 1 5/16" Back 1 3/16" Mean pitch of stays 9 5/8"

Pitch across wide water spaces 13 1/2" Working pressures by rules 185 Girders to Chamber tops: Material S Depth and

thickness of girder at centre 9 1/4" x 1 1/2" Length as per rule 33 11/16" Distance apart 8 1/2" Number and pitch of stays in each three 8"

Working pressure by rules 196 Superheater or Steam chest; how connected to boiler Can the superheater be shut off and the boiler worked

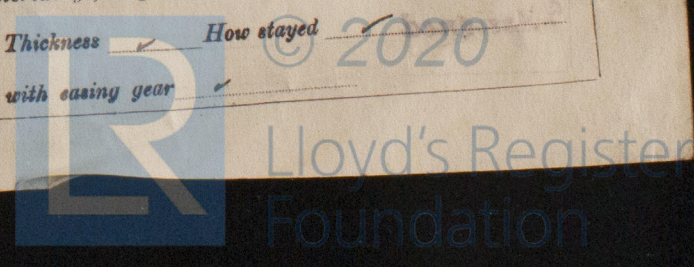
separately Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet

holes Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness

If stiffened with rings Distance between rings Working pressure by rules End plates: Thickness How stayed

Working pressure of end plates Area of safety valves to superheater Are they fitted with easing gear

W928-0084



VERTICAL DONKEY BOILER—

Manufacturers of Steel

No. *100* Description *Vertical Donkey Boiler*
 Made at *London* By whom made *James & Co.* When made *1912* Where fixed *On board*
 Working pressure *360 lbs* tested by hydraulic pressure to *360 lbs* Date of test *Dec 3. 10. 17. 19. 24. 31* No. of Certificate *100* Fire grate area *10* Description of Safety *Valves*
 Valves *2* No. of Safety Valves *2* Area of each *10* Pressure to which they are adjusted *360 lbs* Date of adjustment *Dec 3. 10. 17. 19. 24. 31*
 If fitted with easing gear *No* If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler *10* Length *10*
 Material of shell plates *Steel* Thickness *1/2"* Range of tensile strength *30 tons* Descrip. of riveting long. seams *Longitudinal*
 Dia. of rivet holes *1/2"* Whether punched or drilled *No* Pitch of rivets *2"* Lap of plating *1"* Per centage of strength of joint *80%* Rivets *1/2"* Plates *1/2"*
 Working pressure of shell by rules *360 lbs* Thickness of shell crown plates *1/2"* Radius of do. *10* No. of stays to do. *10* Dia. of stays *1/2"*
 Diameter of furnace Top *10* Bottom *10* Length of furnace *10* Thickness of furnace plates *1/2"* Description of joint *Longitudinal*
 Working pressure of furnace by rules *360 lbs* Thickness of furnace crown plates *1/2"* Radius of do. *10* Stayed by *10*
 Diameter of uptake *10* Thickness of uptake plates *1/2"* Thickness of water tubes *1/2"* Dates of survey *Dec 3. 10. 17. 19. 24. 31*

SPARE GEAR. State the articles supplied:— *Two top end bolts & nuts, Two bottom end bolts & nuts, Two main bearing bolts & nuts, One set of coupling bolts & nuts, one set of feed pipe pump valves, Bolts & nuts & iron of various sizes*

The foregoing is a correct description, *James & Co.*

Manufacturer.

FOR EARLE'S
SHIPBUILDING & ENGINEERING CO. LIMITED.

James & Co.
MANAGER

Dates of Survey while building *During progress of work in shops - 1912 - Dec 3. 10. 17. 19. 24. 31 1913 - Jan 7. 10. 16. 23. 30 Feb 8. 15. 17. 19. 24 Mar 1. 6. 11.*
During erection on board vessel - Mar 12. 14. 18. 27 April 2. 4. 11. 15. 17. Jun 5. 13. 14. 16. 17. 19. 20. 23. Jul 14. 16.
 Total No. of visits *39*

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

" " " donkey " " " *Yes*

Dates of Examination of principal parts—Cylinders *15-2-13* Slides *17-2-13* Covers *8-2-13* Pistons *15-2-13* Rods *23-1-13*

Connecting rods *16-1-13* Crank shaft *30-1-13* Thrust shaft *11-3-13* Tunnel shafts *11-3-13* Screw shaft *11-4-13* Propeller *15-4-13*

Stern tube *13-6-13* Steam pipes tested *18-6-13* Engine and boiler seatings *27-8-13* Engines holding down bolts *20-6-13*

Completion of pumping arrangements *23-6-13* Boilers fixed *20-6-13* Engines tried under steam *23-6-13*

Main boiler safety valves adjusted *23-6-13* Thickness of adjusting washers *Port 1 3/8 2 3/8*

Material of Crank shaft *S* Identification Mark on Do. *3188WDH* Material of Thrust shaft *S* Identification Mark on Do. *1015FLS*

Material of Tunnel shafts *S* Identification Marks on Do. *1014FLS* Material of Screw shafts *S* Identification Marks on Do. *1016FLS*

Material of Steam Pipes *Solid drawn copper* Test pressure *400 lbs.*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The Machinery for this vessel has been constructed under special survey in accordance with the approved plans & the rules of this society, the materials & workmanship are good, The machinery has been properly fitted & secured on board & on completion was tested under steam & found to work satisfactorily. The Boiler was tested by hydraulic pressure to 360 lbs & found sound & tight. The safety valves have been adjusted & tested for accumulation which did not exceed 192 lbs.*

In my opinion the vessel is eligible for the record + LMC 7.13.

It is submitted that
this vessel is eligible for
THE RECORD. + LMC 7.13.

The amount of Entry Fee *£ 2 : 0 :* When applied for, *24-7-13*
 Special *£ 16 . 7 :*
 Donkey Boiler Fee *£ :* When received *6/4*
 Travelling Expenses (if any) *£ 6/4*
 charged to the builder under of 7.13.

Committee's Minute

Assigned

TUE JUL 29 1913

Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.