

## REPORT ON MACHINERY.

No. 15876

Mbb. F.E. 11059

Received at London Office FRI. 18 MAR. 1921

Date of writing Report

19

When handed in at Local Office

17/3/1921 Port of

WEST HARTLEPOOL

No. in Survey held at  
Reg. Book.

Hartlepool

Date, First Survey 27<sup>th</sup> Oct. 1919. Last Survey 14<sup>th</sup> March 1921.

on the steel screw steamer "Sierra Cordoba" "Abdi Mendi" (Number of Visits 72 + 20 subd.)

Master

Built at Middlesbrough

By whom built The Furness S.S. Co. Ltd. (S.N. 4) Tons Gross 720 Net 420

Engines made at

Hartlepool

By whom made

Richardson, Westgate &amp; Co. Ltd. (H262) when made 1921

Boilers made at

Hartlepool

By whom made

Richardson, Westgate &amp; Co. Ltd. when made 1921

Registered Horse Power

Owners

Sota y Anar

Port belonging to Bilbao

Nom. Horse Power as per Section 28 569

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted Yes

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

Triple Expansion (horizontal cylinder)

No. of Cylinders Three

No. of Cranks Three

Dia. of Cylinders 27-45-45

Length of Stroke 57

Revs. per minute 73

Dia. of Screw shaft

as per rule 15.0

Material of screw shaft iron

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 5-2

Dia. of Tunnel shaft as per rule 13.69

Dia. of Crank shaft journals as per rule 14.37

Dia. of Crank pin 15

Size of Crank webs 9 3/8 x 23

Dia. of thrust shaft under

collars 15 1/4

Dia. of screw 18-0

Pitch of Screw 18-0

No. of Blades four

State whether moveable No

Total surface 104 1/2

No. of Feed pumps 2

Diameter of ditto 8

Stroke 21

Can one be overhauled while the other is at work Yes.

No. of Bilge pumps 2

Diameter of ditto 4 1/4

Stroke 27

Can one be overhauled while the other is at work Yes.

No. of Donkey Engines 2

Sizes of Pumps

General Service 6 x 8

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

In Engine Room Three 3 1/2, Dry tank Three 3 1/2

In Holds, &amp;c. No in. Each Hold 3 1/2 — one tunnel and 2 1/2

No. of Bilge Injections one sizes 8

Connected to condenser, or to circulating pump pump

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 No

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 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.

Is the Screw Shaft Tunnel watertight Yes

Is it fitted with a watertight door Yes.

worked from. Yes Platform

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

Manufacturers of Steel J. Spencer &amp; Sons Ltd &amp; Deighton, Fife &amp; Co. H.

Total Heating Surface of Boilers 8491 1/2

Is Forced Draft fitted Yes.

No. and Description of Boilers Three single End Cap Mast.

Working Pressure 180 lb

Tested by hydraulic pressure to 360 lb

Date of test 27/1/21

No. of Certificate 3592

Can each boiler be worked separately Yes.

Area of fire grate in each boiler 62.55

No. and Description of Safety Valves to

each boiler No, direct spring

Area of each valve 12.59

Pressure to which they are adjusted 185 lb

Are they fitted with easing gear Yes.

Smallest distance between boilers or uptakes and bunkers or woodwork 2-3

Internal

Mean dia. of boilers 15-6 1/2

Length 12-0

Material of shell plates steel

Thickness 1 1/4

Range of tensile strength 28-32 tons

Are the shell plates welded or flanged No

Descrip. of riveting: cir. seams Yes S.R.

long. seams DRS-TR

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

Pitch of rivets 8 1/2

Lap of plates or width of butt straps 1 1/2 x 1 1/2 x 1 1/4

Per centages of strength of longitudinal joint

rivets 85.8%

plate 85.3%

Working pressure of shell by rules 181 lb

Size of manhole in shell 13 x 16 1/2

Size of compensating ring 8 x 1 1/4

No. and Description of Furnaces in each boiler 3 Deighton

Material steel

Outside diameter 49 3/4

Length of plain part top — bottom —

Thickness of plates crown 19 bottom 32

Description of longitudinal joint Weld.

No. of strengthening rings —

Working pressure of furnace by the rules 190 lb

Combustion chamber plates: Material steel

Thickness: Sides 19

Back 11

Top 19

Bottom 23

Pitch of stays to ditto: Sides 1/2 x 6 5/8

Back 8 1/4 x 8

Top 1/4 x 6 5/8

If stays are fitted with nuts or riveted heads Riveted Head.

Working pressure by rules 184 lb

Material of stays steel

Area at smallest part 1 1/2 x 1 3/8

Area supported by each stay 8 1/4 x 8

Working pressure by rules 180 lb

End plates in steam space:

Material steel

Thickness 1 1/8

Pitch of stays 19 1/2 x 5 3/4

How are stays secured S.N.

Working pressure by rules 180 1/2 lb

Material of stays steel

Area at smallest part 6 1/4 x 7 1/8

Area supported by each stay 19 1/2 x 5 3/4

Working pressure by rules 20 1/2 lb

Material of Front plates at bottom steel

Thickness 15

Greatest pitch of stays 13 1/2 x 8

Working pressure of plate by rules 186 lb

Diameter of tubes 2 1/2

Pitch of tubes 3 3/4 x 3 3/4

Material of tube plates steel

Thickness: Front 15

Back 13

Mean pitch of stays 9 3/8

Pitch across wide water spaces 13 1/2

Working pressures by rules 185 lb

Girders to Chamber tops: Material steel

Depth and

thickness of girder at centre 8 3/4 x 1 1/2

Length as per rule 32 1/4

Distance apart 6 5/8

Number and pitch of stays in each Three 7 1/8

Working pressure by rules 180 1/2 lb

Steam dome: description of joint to shell —

% 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

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

004093-004100-0038

Lloyd's Register Foundation



IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

One propeller & shaft  
Two Each Top End, Bottom End & Main Bearing Bolts & nuts, one set of coupling  
Bolts & nuts, 1 set helix pump valves, 1 set valves for main feed pumps 1 main & 1 aux check  
valve, 20 assorted bolts, studs & nuts. Iron of various sizes HP piston ring & springs.  
2 Safety valve springs.

The foregoing is a correct description,

FOR RICHARDSONS, WESTGARTH & CO. LIMITED.

*L. S. Hingle*

GENERAL MANAGER.  
(HARTLEPOOL WORKS)

Manufacturer.

Dates of Survey while building  
During progress of work in shops --  
During erection on board vessel --  
Total No. of visits  
1919. Oct 27. Nov 17. 1920 Jan 24. Feb 5. 18. Mar 23. Apr 13. 26. May 17. 21. 28. June 3. 11. July 12. 30.  
Sep 16. 27. 29. Oct 1. 6. 11. 13. 14. 15. 20. 21. 27. Nov 2. 4. 8. 9. 11. 19. 22. Dec 1. 3. 6. 7. 8. 10. 16. 22. 23. 29.  
30. 1921. Jan 6. 7. 10. 11. 12. 14. 18. 20. 24. 26. 27. Feb 1. 2. 4. 7. 10. 14. 15. 22. 24. 25. Mar 2. 7. 9. 10. 12. 14.  
Mdb. 1920. 8. 16. 24. 26. Nov. 6. 10. 15. 21. Dec. 19. 21. 5. 11. 17. 21. Jan. 15. 22. 31. Mar. 7. 26. Apr. 7. 26. Apr.  
12 May 30 June 7. Total 21 Mdb. Is the approved plan of main boiler forwarded herewith *20-5-20*  
72 HPR. *See Mdb. letter 2-8-21* Sent to London with duplicate

Dates of Examination of principal parts—Cylinders *29/10 to 9/11/20* Slides *27/10 to 18/11/21* Covers *11/10/20* Pistons *16/11/20* Rods *11/12 to 3/1/20*  
Connecting rods *6/10/20 to 10/1/21* Crank shaft *18/12/20 to 10/1/21* Thrust shaft *2/1/20* Tunnel shafts *12/10 to 11/1/21* Screw shaft *1/12 to 14/1/21* Propeller *27/1/21*  
Stern tube *27/10/20 to 7/1/21* Steam pipes tested *1-4-20* Engine and boiler seatings *22/2/21* Engines holding down bolts *17/2/21*  
Completion of pumping arrangements *16. 4. 21* Boilers fixed *2/2/21* Engines tried under steam *10-3-21*  
Completion of fitting sea connections *10-3-21* Stern tube *4/2/21* Screw shaft and propeller *4/2/21*  
Main boiler safety valves adjusted *10-3-21* Thickness of adjusting washers  
Port Bolts *P 11/32 54*  
Centre " *P 3/16 54*  
Star " *P 3/8 54*  
Material of Crank shaft *Steel* Identification Mark on Do. *(11/10/20 62.41 10/1/21)* Material of Thrust shaft *Steel* Identification Mark on Do. *11/10/20 5197 N WC*  
Material of Tunnel shafts *Iron* Identification Marks on Do. *(11/10/20 62.41 10/1/21)* Material of Screw shafts *Iron* Identification Marks on Do. *(11/10/20 62.41 10/1/21)*  
Material of Steam Pipes *Cast Iron* Test pressure *540 lbs* Feed Water test to 100 lbs. *11/10/20 11/1/21*  
Is an installation fitted for burning oil fuel *No* Is the flash point of the oil to be used over 150°F. *11/10/20 11/1/21*  
Have the requirements of Section 49 of the Rules been complied with *Exemption Certificate 11/10/20 11/1/21*  
Is this machinery duplicate of a previous case *Yes* If so, state name of vessel *5/11/20 5/11/21*

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

The Engines & Boilers & auxiliary Machinery of this Vessel have been constructed under Special Survey, the Material & workmanship sound & good. The Boilers & Steam pipes have been tested by Hydraulic pressure as required by the Rules the machinery has been tried by steam at the running & the safety valves have been adjusted under steam to their working pressure & being so fitted rendering this Vessel eligible in our opinion to have the Notation \*LM Certificate F.D. 180th in the Register Book.

To Complete the Survey — Electric Light installation to fit & steering Engine & gearing to fit & try. Pumping arrangement to test. Evaporator Safety valve to adjust, and spare gear to check over.

Electric light installation, steering engine & gearing & pumping arrangement satisfactorily fitted & tried. Evaporator safety valve adjusted & spare gear checked 8.2.21

The amount of Entry Fee ... £ 6 : : : When applied for, 17/3/1921.  
Special ... £ 103 : 9/ : :  
Donkey Boiler Fee ... £ : : : When received, 31.3.1921.  
Travelling Expenses (if any) £ : : :  
FRI. 29 JUL. 1921

*W. R. R. & Robert Rae*  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

+ LMC 7.21

7D. C.L.

MACHINERY TEST  
WRITTEN



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Foundation