

REPORT ON MACHINERY.

No. 28684

Received at London Office FRI. NOV. 23 1923

SUNDERLAND.

Date of writing Report 19 When handed in at Local Office 14th Nov 23 Port of **SUNDERLAND.**
 No. in Survey held at **SUNDERLAND.** Date, First Survey 15th Jan Last Survey 13th Nov 1923
 Reg. Book. on the **SS. "FERNWOOD"** (Number of Visits 42)

Master Built at **Sunderland** By whom built **Sir James Laing Sons Ltd** Tons { Gross 1892 Net 1090 When built 1923
 Engines made at **Sunderland** By whom made **Messrs Gurney Clark Ltd** when made 1923
 Boilers made at **Sunderland** By whom made **Messrs Gurney Clark Ltd** when made 1923
 Registered Horse Power Owners **W. Frank Fenwick & Co. Ltd** Port belonging to **London**
 Nom. Horse Power as per Section 28 **199 1/2** Is Refrigerating Machinery fitted for cargo purposes **No** Is Electric Light fitted **YES**

ENGINES, &c.—Description of Engines **Triple** No. of Cylinders **3** No. of Cranks **3**
 Dia. of Cylinders **20 1/2, 33, 54** Length of Stroke **39** Revs. per minute **65** Dia. of Screw shaft as per rule **12.18** Material of **Steel**
 as fitted **12 1/2** screw shaft) **CEDERAL GLAND**
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube **NO LINER** 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 If two
 liners are fitted, is the shaft lapped or protected between the liners Length of stern bush **4-0 7/8**
 Dia. of Tunnel shaft as per rule **10.31** Dia. of Crank shaft journals as per rule **10.83** Dia. of Crank pin **10 1/8** Size of Crank webs **16 x 6 3/4** Dia. of thrust shaft under
 collars **10 1/8** Dia. of screw **14-3** Pitch of Screw **14-9** No. of Blades **4** State whether moveable **No** Total surface **63.5 9**
 No. of Feed pumps **2** Diameter of ditto **2 3/4** Stroke **24** Can one be overhauled while the other is at work **YES**
 No. of Bilge pumps **2** Diameter of ditto **2 3/4** Stroke **24** Can one be overhauled while the other is at work **YES**
 No. of Donkey Engines **3** Sizes of Pumps **9+10+10, 6+4+6, 6+7 1/2+6** No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room **3 @ 2 1/2"** In Holds, &c. **2 in each hold 3" 1 in after hold 3"**
 No. of Bilge Injections **1** sizes **5 1/2** Connected to condenser to circulating pump **YES** Is a separate Donkey Suction fitted in Engine room & size **YES 3 1/2**
MUD BOXES & STRAIGHT TAIL PIPES
 Are all the bilge suction pipes fitted with roses Are the roses in Engine room always accessible 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**
 Is the Screw Shaft Tunnel watertight **YES** Is it fitted with a watertight door **YES** worked from **Upper platform**

BOILERS, &c.—(Letter for record **S**) Manufacturers of Steel **Port Talbot Steel Co**
 Total Heating Surface of Boilers **3096 1/2** Is Forced Draft fitted **No** No. and Description of Boilers **Two Single Ended 2SB**
 Working Pressure **180 lbs** Tested by hydraulic pressure to **320 lbs** Date of test **4.7.23** No. of Certificate **3846**
 Can each boiler be worked separately **YES** Area of fire grate in each boiler **47 1/2** No. and Description of Safety Valves to
 each boiler **Two Spring valves** Area of each valve **5.94 1/2** 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 **20"** Mean dia. of boilers **13-0"** Length **10-6"** Material of shell plates **S**
 Thickness **1 1/4** Range of tensile strength **28-32** Are the shell plates welded or flanged **No** Descrip. of riveting: cir. seams **Laps etc**
 long. seams **d 1 1/2 to riv** Diameter of rivet holes in long. seams **1 1/8** Pitch of rivets **7 1/8** Lap of plates or width of butt straps **16 1/8**
 Per centages of strength of longitudinal joint rivets **90.3** Working pressure of shell by rules **182** Size of manhole in shell **END 12 x 16**
 plate **85-8** No. and Description of Furnaces in each boiler **3 Duplex** Material **S** Outside diameter **3-4**
 Length of plain part top bottom Thickness of plates crown **3 1/2** Description of longitudinal joint **Welded** No. of strengthening rings
 Working pressure of furnace by the rules **194** Combustion chamber plates: Material **S** Thickness: Sides **23/32** Back **11/16** Top **23/32** Bottom **23/32**
 Pitch of stays to ditto: Sides **10 x 9 1/2** Back **10 x 9** Top **10 1/2 x 9 1/2** stays are fitted with nuts or riveted heads **nuts** Working pressure by rules **180**
 Material of stays **S** Area at smallest part **2.03 0"** Area supported by each stay **99 3/4 0"** Working pressure by rules **183** End plates in steam space:
 Material **S** Thickness **1 1/8** Pitch of stays **17 x 19** How are stays secured **d.x.l.w.** Working pressure by rules **181** Material of stays **S**
 Area at smallest part **5.41 0"** Area supported by each stay **323 0"** Working pressure by rules **184** Material of Front plates at bottom **S**
 Thickness **13/16** Material of Lower back plate **S** Thickness **7/8** Greatest pitch of stays **15 1/4** Working pressure of plate by rules **200**
 Diameter of tubes **3 1/4** Pitch of tubes **4 1/2 x 4 3/8** Material of tube plates **S** Thickness: Front **13/16** Back **3/4** Mean pitch of stays **10 1/4**
 Pitch across wide water spaces **14 1/2** Working pressures by rules **185** Girders to Chamber tops: Material **S** Depth and
 thickness of girder at centre **8 1/2 x 1 3/4** Length as per rule **32** Distance apart **10 1/2** Number and pitch of stays in each **2, 9 1/2**
 Working pressure by rules **181** 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 Tested by Hydraulic Pressure
 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

If not, state whether, and when, one will be sent



1810-18M

IS A DONKEY BOILER FITTED? **No**

If so, is a report now forwarded?

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

The foregoing is a correct description,
FOR GEORGE CLARK LIMITED

W. S. Spence Manufacturer.

Dates of Survey while building
During progress of work in shops - - 1923. Jan. 15, 23, 26. Feb. 9, 13, 19. Mar. 7, 9, 12, 21, 27. Apr. 9, 10, 12, 13, 18, 20, 24, 26, 30. May, 7, 15, 17, 23, 24, 28, 29, 30
During erection on board vessel - - - June 4, 7, 11, 14, 19. July, 3, 4. Aug. 28. Sep. 18. Oct. 29, 31. Nov. 2, 6, 13
Total No. of visits 42

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

" " " donkey " " "

Dates of Examination of principal parts—Cylinders 30.4.23 Slides 30.4.23 Covers 20.4.23 Pistons 15.5.23 Rods 15.5.23

Connecting rods 30.4.23 Crank shaft 9.4.23 Thrust shaft 15.5.23 Tunnel shafts 7.5.23 Screw shaft 24.5.23 Propeller 7.5.23

Stern tube 28.8.23 Steam pipes tested 31.10.23 Engine and boiler seatings 29.10.23 Engines holding down bolts 2.11.23

Completion of pumping arrangements 2.11.23 Boilers fixed 2.11.23 Engines tried under steam 6.11.23

Completion of fitting sea connections 18.9.23 Stern tube 18.9.23 Screw shaft and propeller 29.10.23

Main boiler safety valves adjusted 6.11.23 Thickness of adjusting washers PORT B: P 9/8 S 1/2 STAR B: P 7/8 S 3/4

Material of Crank shaft Steel Identification Mark on Do. 1128 GAH Material of Thrust shaft Steel Identification Mark on Do. 1128 GAH

Material of Tunnel shafts Steel Identification Marks on Do. 1128 GAH Material of Screw shafts Steel Identification Marks on Do. 1128 GAH

Material of Steam Pipes Copper Test pressure 360 lbs sq"

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 machinery of this vessel has been constructed under special survey, the materials and workmanship are sound and good and under the vessel eligible in my opinion to have record of T.L.M.C. 11.23

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 11.23 O.G.

[Signature]
23/11/23

The amount of Entry Fee ... £ 3 : : When applied for, 14 NOV 1923
Special ... £ 49 : 15 : :
Donkey Boiler Fee ... £ : : : When received, 20 NOV 1923
Travelling Expenses (if any) £ : : : *None.*

[Signature]
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 27 NOV 1923
Assigned *+ L.M.C. 11.23*
O.G.



SUNDERLAND.

Certificate (if required) to be sent to
The Surveyors are requested not to write on or below the space for Committee's Minute.