

Supplementary Sheet of Particulars of Committee's Report
REPORT ON MACHINERY.

Port of **MIDDLESBROUGH-ON-TEES.**

THUR. MAR 29 1900

Received at London Office

18

No. in Survey held at *Middlebrook - Teal.* Date first Survey *March 6th* 1899 Last Survey *18th January 1900*
 Reg. Book. *6* (Number of Visits *90*)
 on the *Steel Screw Steamer* *Freiburg* (Gross

on the Steel Screw Steamer. Freiburg

2	Master	Built at	By whom built	<i>Furness, Withy & Co.</i>	When built
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Engines made at Middlebrook-Tees. By whom made Sir. C. Lunnell, Wellingborough when made 1900.

Boilers made at By whom made when made 1900.

[illegible]

Vol. Horse Power as per Section 28 *Is Electric Light fitted*

Engines, &c.—Description of Engines			No. of Cylinders	No. of Cranks
Diameter of Cylinders	Length of Stroke	Revolutions per minute	Diameter of Screw shaft	as per rule
Diameter of Tunnel shaft	Diameter of Crank shaft journals	Diameter of Crank pin	Size of Crank webs	as fitted
Diameter of screw	Pitch of screw	No. of blades	State whether moveable	Total surface
No. of Feed pumps	Diameter of ditto	Stroke	Can one be overhauled while the other is at work	
No. of Bilge pumps	Diameter of ditto	Stroke	Can one be overhauled while the other is at work	
No. of Donkey Engines	Sizes of Pumps	No. and size of Suctions connected to both Bilge and Donkey pumps		
Engine Room		In Holds, &c.		
No. of bilge injections	sizes	Connected to condenser, or to circulating pump	Is a separate donkey suction fitted in Engine room of size	
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		
Are all connections with the sea direct on the skin of the ship	Are they Valves or Cocks			
Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates	Are the discharge pipes above or below the deep water line			
Are they each fitted with a discharge valve always accessible on the plating of the vessel	Are the blow off cocks fitted with a spigot and brass covering plate			
Are that pipes are carried through the bunkers	How are they protected			
Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times				
Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges				
Are the stern tube, propeller, screw shaft, and all connections examined in dry dock	Is the screw shaft tunnel watertight			
Is it fitted with a watertight door	worked from			

ILER & Co. ^{Centre} (Letter for record (S)) Total Heating Surface of Boilers ^{Centre} 2652 #. Is forced draft fitted Yes. Howden's
 and Description of Boilers One, Cyl. mult. Single ended. Working Pressure 180.00 Tested by hydraulic pressure to 360.00
 Date of test 28.11.99. Can each boiler be worked separately Yes. Area of fire grate in ^{Centre} each boiler 64.6 # No. and Description of safety valves to
 each boiler 3. Direct Spring. Area of each valve 9.62 # Pressure to which they are adjusted 185.00 Are they fitted
 with easing gear Yes. Smallest distance between boilers or uptakes and bunkers or woodwork ✓ Mean diameter of boilers 15.6"
 Length 12.0' Material of shell plates S. Thickness 1/16" Description of riveting: circum. seams D.P. Lap. long. seams All. straps.
 Diameter of rivet holes in long. seams 13/32" Pitch of rivets 1 row 2 rows 9" 4 1/2" Lap of plates or width of butt straps 2 1/4" x 1 3/8"
 Percentages of strength of longitudinal joint rivets 85.1 Working pressure of shell by rules 200.8 Size of manhole in shell 16" x 12"
 Diameter of compensating ring 35 1/2" x 30" x 1 1/16" No. and Description of Furnaces in each boiler 4: Deighton. Material S. Outside diameter 4 1/4"
 Length of plain part top } 8' 3" Thickness of plates crown } 1/32" Description of longitudinal joint weld. No. of strengthening rings ✓
 bottom } 8' 3" bottom } 3/32"
 Working pressure of furnace by the rules 196. Combustion chamber plates: Material S. Thickness: Sides 19/32" Back 19/32" Top 19/32" Bottom 4/8"
 Pitch of stays to ditto: Sides 4 1/8" x 4" Back 4 1/8" x 4 1/8" Top 4 1/8" x 4 1/8" If stays are fitted with nuts or riveted heads nuts. Working pressure by rules 196.5
 Material of stays S. Diameter at smallest part 1 3/8" Area supported by each stay 62 # Working pressure by rules 193.5 End plates in steam space:
 Material S. Thickness 3/32" Pitch of stays 15 1/2" x 15 1/4" How are stays secured D.N. & W. Working pressure by rules 188. Material of stays S.
 Diameter at smallest part 2 1/2" Area supported by each stay 236 # Working pressure by rules 214. Material of Front plates at bottom S.
 Thickness 13/16" Material of Lower back plate S. Thickness 4/8" Greatest pitch of stays 15" Working pressure of plate by rules 184.5
 Diameter of tubes 2 1/2" Pitch of tubes 3 3/4" x 3 3/4" Material of tube plates S. Thickness: Front 1" Back 3/4" Mean pitch of stays 4 1/2"
 Pitch across wide water spaces 14 1/2" Working pressures by rules F 182.6 B 358. Girders to Chamber tops: Material S. Depth and
 Thickness of girder at centre 9" x 1 3/4" Length as per rule 30" Distance apart 4 1/8" Number and pitch of Stays in each 2: 4 1/8"
 Working pressure by rules 268.5 Superheater or Steam chest; how connected to boiler None. 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
 ✓ Pitch of rivets ✓ Working pressure of shell by rules ✓ Diameter of flue ✓ Material of flue plates ✓ Thickness ✓
 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 ✓

DONKEY BOILER— Description

Made at _____ By whom made _____ When made _____ Where fixed _____
 Working pressure _____ tested by hydraulic pressure to _____ No. of Certificate _____ Fire grate area _____ Description of safety valves _____
 No. of safety valves _____ Area of each _____ Pressure to which they are adjusted _____ If fitted with easing gear _____ If steam from main boilers can
 enter the donkey boiler _____ Diameter of donkey boiler _____ Length _____ Material of shell plates _____ Thickness _____
 Description of riveting long seams _____ Diameter of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____
 Lap of plating _____ Per centage of strength of joint _____ Rivets _____ Thickness of shell crown plates _____ Radius of do. _____ No. of Stays to do. _____
 Dia. of stays _____ Diameter of furnace Top _____ Bottom _____ Length of furnace _____ Thickness of furnace plates _____ Description of
 joint _____ Thickness of furnace crown plates _____ Stayed by _____ Working pressure of shell by rules _____
 Working pressure of furnace by rules _____ Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____

SPARE GEAR. State the articles supplied :—

The foregoing is a correct description,

For **SIR CHRISTOPHER FURNESS, WESTBARTH & CO., LD.**

Manufacturers of Engines & Marine Boilers—

H. Jackson.
 Dates of Survey while building
 During progress of work in shops—
 During erection on board vessel—
 Total No. of visits

1st Visit 6th March 1899

Last Visit 18th January 1900.

Ninety

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

See accompanying sheet

The amount of Entry Fee. . . £ : : When applied for, . . . 18.
 Special £ : : When received, . . . 18.
 Donkey Boiler Fee . . . £ : :
 Travelling Expenses (if any) £ : :

Committee's Minute

FRI 30 MAR 1900

Assigned

Lidley Twiss & Richard Hind
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



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