

# REPORT ON MACHINERY.

No. 343.

No. in Survey held at  
Reg. Book.

Dundee

Date, first Survey 20/12/83

Last Survey 10th July 1884

on the

SS "Dresden"

(Number of Visits)

Tons 441.85

Master Ayre

Built at Dundee

By whom built W.B. Thompson

When built 1884

Engines made at Dundee

By whom made W.B. Thompson

when made 1884

Boilers made at Dundee

By whom made W.B. Thompson

when made 1884

Registered Horse Power 150

Owners Yorkshire Coal & Steam Ship Co. (Limited) Port belonging to

Goole

## ENGINES, &c.—

Description of Engines Direct acting Compound Int. Cys Surface Condensing

Diameter of Cylinders 30" & 60" Length of Stroke 33" No. of Rev. per minute 80 Point of Cut off, High Pressure 2 1/2" Low Pressure 20 1/2"

Diameter of Screw shaft 10" Diam. of Tunnel shaft 9 3/4" Diam. of Crank shaft journals 10" Diam. of Crank pin 10" size of Crank webs 7" x 11 1/2"

Diameter of screw 12" 0" Pitch of screw 16" 0" No. of blades 4 state whether moveable ☒ total surface 49 feet

No. of Feed pumps 2 diameter of ditto 3 1/2" Stroke 23" Can one be overhauled while the other is at work ☒

No. of Bilge pumps 2 diameter of ditto 3 1/2" Stroke 23" Can one be overhauled while the other is at work ☒

Where do they pump from all compartments

No. of Donkey Engines 2 Size of Pumps 10" x 12" x 9" 6" x 8 1/2" x 3 1/2" Where do they pump from Tanks compartments & Condenser & ship side from sea Hotwell all compartments to boilers thro ship side & on deck

Are all the bilge suction pipes fitted with roses ☒ Are the roses always accessible ☒ Are the sluices on Engine room bulkheads always accessible ☒

No. of bilge injections one and sizes 4" Are they connected to condenser, or to circulating pump Circulating

How are the pumps worked by levers from after engine

Are all connections with the sea direct on the skin of the ship ☒ Are they Valves or Cocks both

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 above

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 ☒

What pipes are carried through the bunkers none How are they protected

Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times ☒

Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges ☒

When were stern tube, propeller, screw shaft, and all connections examined in dry dock before being launched

Is the screw shaft tunnel watertight ☒ and fitted with a sluice door ☒ worked from Top of Cylinders

## BOILERS, &c.—

Number of Boilers Two Description Circular Tubular Whether Steel or Iron Steel & iron stays

Working Pressure 100 lbs Tested by hydraulic pressure to 200 lbs Date of test 19th June 1884

Description of superheating apparatus or steam chest Horizontal chest

Can each boiler be worked separately ☒ Can the superheater be shut off and the boiler worked separately ☒

No. of square feet of fire grate surface in each boiler 47 feet Description of safety valves Direct Spring 2 No. to each boiler 2

Area of each valve 12.56" Are they fitted with easing gear ☒ No. of safety valves to superheater area of each valve

Are they fitted with easing gear ☒ Smallest distance between boilers and bunkers or woodwork 9" Diameter of boilers 13" 0"

Length of boilers 9' 9" description of riveting of shell long. seams Lap Rivet 12 circum. seams Lap Rivet 12 Thickness of shell plates 1 1/2"

Diameter of rivet holes 1 1/4" whether punched or drilled drilled pitch of rivets 5" Lap of plating 9" x 6 1/2"

Per centage of strength of longitudinal joint 73 & 71% working pressure of shell by rules 101 lbs size of manholes in shell 17" x 13"

Size of compensating rings angle 4" x 4" x 3" No. of Furnaces in each boiler Three

Outside diameter 36" length, top 7' 0" bottom 7' 0" thickness of plates 3/8" description of joint butt S.R. if rings are fitted ☒

Greatest length between rings working pressure of furnace by the rules 109 1/4 combustion chamber plating, thickness, sides 3/8" back 3/8" top 3/8"

Pitch of stays to ditto, sides 8 1/2" x 8 1/2" back 9" x 9" top 10" x 8 1/2" If stays are fitted with nuts or riveted heads Anti both ends working pressure of plating by

rules 120 1/4 Diameter of stays at smallest part 1 1/2" B.T. working pressure of ditto by rules 476 1/4 end plates in steam space, thickness 3/8"

Pitch of stays to ditto 16" x 15" how stays are secured Two ends Anti working pressure by rules 131 lbs diameter of stays at

smallest part 2 1/2" working pressure by rules 489 1/2 lbs Front plates at bottom, thickness 3/8" Back plates, thickness 3/8"

Greatest pitch of stays common chamber working pressure by rules Diameter of tubes 3 1/2" pitch of tubes 5" x 5" thickness of tube

plates, front 3/8" back 3/8" how stayed Substantially pitch of stays 10" x 10" width of water spaces 1 1/2"

Diameter of Superheater or Steam chest 3' 6" length 8' 0" thickness of plates 3/8" description of longitudinal joint Lap Rivet diam. of rivet holes 7/8"

Pitch of rivets 3 1/2" working pressure of shell by rules 132 1/4 diameter of flue thickness of plates If stiffened with rings

Distance between rings working pressure by rules end plates of superheater, or steam chest; thickness 3/8" how stayed 4 bolts

Rolls 2 1/2" diameter Superheater or steam chest; how connected to boiler by two malleable rods riveted

DUN110-0093



DONKEY BOILER— Description *one Round Vertical two cross tubes*  
Made at *Falstead* by whom made *Clark Chapman & Co* when made *1884* where fixed *Stoke Newington*  
Working pressure *60 lbs* tested by hydraulic pressure to *180 lbs* No. of Certificate *1699* fire grate area *19 feet* description of safety  
valves *Direct Spring load* No. of safety valves *one* area of each *9.625* if fitted with easing gear *yes* if steam from main boilers can  
enter the donkey boiler *no* diameter of donkey boiler *6' 0"* length *10' 0"* description of riveting *Lap double R*  
Thickness of shell plates *3/8"* diameter of rivet holes *3/4"* whether punched or drilled *Punched* pitch of rivets *3"* lap of plating *3 3/4"*  
per centage of strength of joint *75%* thickness of crown plates *9/16"* stayed by *5 bolts 1 1/2" dia thro top of boiler furnace*  
Diameter of furnace, top *4' 8"* bottom *5' 1/2"* length of furnace *4' 10 1/2"* thickness of plates *9/16"* description of joint *Single Lap*  
Thickness of furnace crown plates *1/2"* stayed by *as above* working pressure of shell by rules *60 lbs*  
Working pressure of furnace by rules *73 lbs* diameter of uptake *15"* thickness of plates *7/16"* thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *Half Crank Shaft, Two Top & Bottom end connecting  
rod bolts, Two main bearing bolts, 5 Coupling bolts, one set piston springs,  
one set each Feed & bilge pump valves, one Propeller, set of bolts assorted  
bolts & steel iron assorted 18 boiler tubes & C & C*  
The foregoing is a correct description,  
Manufacturer. *W. B. Thompson*

General Remarks (State quality of workmanship, opinions as to class, &c. *The Engines & Boilers of this vessel  
have been built under special survey, The material & workmanship  
are of the best description.*

*Both engines & boilers have been tested under steam and the  
safety valves set to 100 lbs per square inch working pressure, and in  
my opinion all are in good & safe working order, and eligible to be  
entered into the Register Book with the distinctive mark*

**LMC. 784**

The amount of Entry Fee *£ 2 : 0 : 0* received by me,  
Special *£ 22 : 10 : 0*  
Donkey Boiler Fee *£ : : :*  
Certificate (if required) *£ : : :* *28th July 1884*  
To be sent as per margin.  
(Travelling Expenses, if any, £ : : :)

Committee's Minute **TUESDAY 5 AUGUST 1884**

*John Sturrock*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.  
*Sunder District*