

REPORT ON MACHINERY.

No. 24351

Port of *Glasgow*Received at London Office **TUES. 28 AUG 1906**in Survey held at *Clydebank*Date, first Survey *Apr. 18th 1905* Last Survey *Aug. 20th 1906*(Number of Visits *8*)

Book.

on the *S.S. Turbin "S. David"*Tons { Gross
NetWhen built *1906*Built at *Clydebank*By whom built *John Brown & Co. Ltd.*when made *1906*es made at *Clydebank*By whom made *John Brown & Co. Ltd.*when made *1906*rs made at *Clydebank*By whom made *John Brown & Co. Ltd.*

Port belonging to

Horse Power

Owners

Horse Power as per Section 28 *1600*Is Refrigerating Machinery fitted for cargo purposes *yes*Is Electric Light fitted *yes*INES, &c.—Description of Engines *Triple screw Turbin*No. of Cylinders *3*

No. of Cranks

Revs. per minute *435* Dia. of Screw shaft *as per rule*Length of Stroke *210 (Centre)* Is the af of the liner made water tightIf the liner is in more than one length are the joints *burned* If the liner does not fit tightly at the part

If two

the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive

Length of stern bush *5' 0"*s are fitted, is the shaft lapped or protected between the liners *no*as per rule *as per rule* Dia. of Crank pin *as per rule* Size of Crank webs *as per rule* Dia. of thrust shaft underof Tunnel shaft *as fitted* Dia. of Crank shaft journals *as fitted* No. of Blades *3* State whether moveable *no* Total surface *not given*rs *9"* Dia. of screw *7-0"* Pitch of Screw *not given*of Feed pumps *3* Diameter of ditto *10"* Stroke *24"* Can one be overhauled while the other is at work *yes*of Bilge pumps *2* Diameter of ditto *5"* Stroke *10"* Can one be overhauled while the other is at work *yes*of Donkey Engines *1* Sizes of Pumps *7 1/2 x 5 x 10* No. and size of Suctions connected to both Bilge and Donkey pumpsEngine Room *two 2 1/2 in stockhold two 2 1/2* In Holds, &c. *four each one 2 1/2 holds three 2 1/2*of Bilge Injections *2* sizes *6"* Connected to condenser, or to circulating pump *yes* Is a separate Donkey Suction fitted in Engine room & size *yes 2 1/2*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*all connections with the sea direct on the skin of the ship *yes* Are they Valves or Cocks *both*they fixed sufficiently high on the ship's side to be seen without lifting the stockhold plates *yes* Are the Discharge Pipes above or below the deep water line *above*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*

How are they protected

at pipes are carried through the bunkers *no*all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times *yes*the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges *yes*ates of examination of completion of fitting of Sea Connections *22/12/05* of Stern Tube *22/12/05* Screw shaft and Propeller *22/12/05*the Screw Shaft Tunnel watertight *yes* Is it fitted with a watertight door *yes* worked from *deck*ILERS, &c.—(Letter for record *S*) Manufacturers of Steel *James Dunlop & Co., The Steel Coy of Scotland &c.*otal Heating Surface of Boilers *18304* Is Forced Draft fitted *yes* No. and Description of Boilers *8 single ended cylindrical*Working Pressure *185 lbs* Tested by hydraulic pressure to *370 lbs* Date of test *27/10/05-20/11/05* No. of Certificate *7724(2) 7725(2) 7726(2) 7727(2)*an each boiler be worked separately *yes* Area of fire grate in each boiler *59 sq ft* No. and Description of Safety Valves toh boiler *1 pair spring* Area of each valve *9.62 sq ft* Pressure to which they are adjusted *190 lbs* Are they fitted with easing gear *yes*

allest distance between boilers or uptakes and bunkers or woodwork

Mean dia. of boilers *14. 3 1/2"* Length *11'-6"* Material of shell plates *steel*ckness *1 3/32"* Range of tensile strength *29 1/2-32* Are the shell plates welded or flanged *no* Descrip. of riveting: cir. seams *lap double*ong. seams *both tubes* Diameter of rivet holes in long. seams *1 3/8"* Pitch of rivets *9 1/4"* Lap of plates or width of butt straps *20"*

Per centages of strength of longitudinal joint

rivets *92-6* Working pressure of shell by rules *207 lbs* Size of manhole in shell *16 x 12"*plate *85-0*Size of compensating ring *31 x 33 1/4"* No. and Description of Furnaces in each boiler *3 Morrison's* Material *steel* Outside diameter *46 1/4"*Length of plain part *top 19"* Thickness of plates *bottom 3 1/2"* Description of longitudinal joint *welded* No. of strengthening rings *1*Working pressure of furnace by the rules *204 lbs* Combustion chamber plates: Material *steel* Thickness: Sides *9/16"* Back *9/16"* Top *9/16"* Bottom *1 1/32"*Pitch of stays to ditto: Sides *7 1/4 x 8"* Back *7 3/4 x 7 1/2"* Top *7 1/4 x 8"* If stays are fitted with nuts or riveted heads *no* Working pressure by rules *189 lbs*Material of stays *steel* Diameter at smallest part *1.48"* Area supported by each stay *58 sq ft* Working pressure by rules *204 lbs* End plates in steam space:Material *steel* Thickness *1 1/16"* Pitch of stays *17 x 18"* How are stays secured *27/10/05-20/11/05* Working pressure by rules *194 lbs* Material of stays *steel*Diameter at smallest part *5.4"* Area supported by each stay *256 sq ft* Working pressure by rules *210 lbs* Material of Front plates at bottom *steel*Thickness *25-"* Material of Lower back plate *steel* Thickness *3/4"* Greatest pitch of stays *13 1/2 with 57 double* Working pressure of plate by rules *317 lbs*Diameter of tubes *2 1/2"* Pitch of tubes *3 7/8 x 3 5/8"* Material of tube plates *steel* Thickness: Front *3/32"* Back *3/4"* Mean pitch of stays *9.06"*Pitch across wide water spaces *13 1/2 with 57 double* Working pressures by rules *248 x 235 lbs* Girders to Chamber tops: Material *steel* Depth andthickness of girder at centre *9 1/2 x 7 1/8"* Length as per rule *30 3/16"* Distance apart *8"* Number and pitch of stays in each *(3) 7 1/4"*Working pressure by rules *185 lbs* Superheater or Steam chest; how connected to boiler *no* 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

9010-695M

VERTICAL DONKEY BOILER—

Manufacturers of Steel

No. _____ Description None

Made at _____ By whom made _____

Working pressure _____ tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____ Where fixed _____

Valves _____ No. of Safety Valves _____ Area of each _____ Pressure to which they are adjusted _____ Date of adjustment _____

If fitted with easing gear _____ If steam from main boilers can enter the donkey boiler _____ Dia. of donkey boiler _____ Length _____

Material of shell plates _____ Thickness _____ Range of tensile strength _____ Descrip. of riveting long. seams _____

Dia. of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____ Lap of plating _____ Per centage of strength of joint _____ Rivets _____

Working pressure of shell by rules _____ 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 _____

Working pressure of furnace by rules _____ Thickness of furnace crown plates _____ Stayed by _____

Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:—2 pair of bearings for turbine bearings, 4 main bearing bolts & nuts, 24 bolts & nuts for H.P. turbine casing joints, 8 coupling bolts & nuts, 1 bucket & rod for wet air pump, 1 do for dry pump, 1 set of valves and seats for each feed & bridge pumps, bolts & nuts.

The foregoing is a correct description, I am assured.

John Brown & Company, Limited.

Manufacturer.

Dates of Survey while building: During progress of work in shops—1905: Apr. 18, May 8, 15, 19, 22, Jun 2, 5, Mar 13, 14, 22, 28, Apr 3, 15, 19, 26, Aug 7, 16, 31, Sep 6, 11, 18, 26, Oct 2, 5, 6, 9, 19, 22, 26, 27

During erection on board vessel—21, Nov 3, 9, 14, 16, 20, 24, Dec 1, 7, 12, 15, 21, 1906, Jan 10, 18, 22, 29, Feb 6, 12, 19, 26, 23, 27, Mar 5, 12, 14, 22, 27, Apr 3, 12, 14

Total No. of visits 24, 30, May 19, 11, 15, 16, 22, 25, 30, Jun 6, 12, 14, 19, 25, Aug 20, Is the approved plan of main boiler forwarded herewith yes

81

Dates of Examination of principal parts—Cylinders 12/05 in Slides _____ Cores _____ Pistons _____ Rods _____

Connecting rods _____ Crank shaft 7/12/05 in Thrust shaft 7/12/05 in Tunnel shafts 26/7/05 Screw shaft 26/7/05 Propeller 26/7/05

Stern tube 16/8/05 do Steam pipes tested 12/4/06 in Engine and boiler seatings 23/2/06 Engines holding down bolts 23/2/06

Completion of pumping arrangements 12/6/06 Boilers fixed 12/12/05 Engines tried under steam 3/7/06

Main boiler safety valves adjusted 10/5/06 Thickness of adjusting washers see slip appended

Material of Crank shaft steel Identification Mark on Do. see Report Material of Thrust shaft steel Identification Mark on Do. see Report

Material of Tunnel shafts steel Identification Marks on Do. do Material of Screw shafts steel Identification Marks on Do. see Report

Material of Steam Pipes iron, & solid drawn copper Test pressure 370 lbs & 555 lbs

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

These engines and boilers have been built under special survey, the materials and workmanship are of good description, they have been well fitted on board and tried under steam.

In my opinion this machinery is eligible to have notification of LMC 8. 06. in the Register Book.

Lat. tubes	Pistons	Do. tubes	Pistons
71° 1' 30"	3/8"	3/8"	3/8"
71° 2'	3/16"	3/16"	3/16"
71° 3'	1/2"	1/2"	3/8"
71° 4' off	3/8"	1/4"	13/32"

It is submitted that this vessel is eligible for THE RECORD.

LM.C. 8. 06. E.D. ELEC. LIGHT. REF. MCHY. 35 STEAM TURBINES.

The amount of Entry Fee. £ 8 : : When applied for, 20/8/06

Special £ 100. 6 : : When received, 27/8/06

Donkey Boiler Fee £ : : : :

Travelling Expenses (if any) £ : : : :

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

Committee's Minute Glasgow 27 AUG 1906

Assigned L.M.C. 8. 06

MACHINERY CERTIFICATE WRITTEN 28 8-06



Lloyd's Register Foundation