

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 "St. David"

Tons { Gross
Net

Built at Clydebank By whom built John Brown & Co. Ltd.

When built 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.

when made 1906

tered Horse Power Owners _____ Port belonging to _____

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 _____

Revolvers 4 1/2" x 14" 8" Revs. per minute 435 Dia. of Screw shaft _____ as per rule _____ Material of _____

of Cylinders 2 x 10 1/2" x 7-0" Length of Stroke _____ Revs. per minute _____ Dia. of screw shaft _____ as per rule _____

screw shaft fitted with a continuous liner the whole length of the stern tube 710 (Centre) Is the af _____ of the liner made water tight

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 _____

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

s are fitted, is the shaft lapped or protected between the liners no Length of stern bush 5-0"

of Tunnel shaft _____ as per rule _____ Dia. of Crank pin _____ Size of Crank webs _____ Dia. of thrust shaft under _____

rs 9" Dia. of screw 7-0" Pitch of Screw not given No. of Blades 3 State whether moveable no Total surface 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 pumps _____

Engine Room two 2 1/2" in stokehold two 2 1/2" In Holds, &c. four ports one 2 1/2" holds three 2 1/2"

of Bilge Injections 2 sizes 6" Connected to condenser, or to circulating pump no 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 stokehold 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

hat pipes are carried through the bunkers no How are they protected _____

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 3) Manufacturers of Steel James Dunlop & Co., The Steel Coy of Scotland &c.

total Heating Surface of Boilers 18304 Is Forced Draft fitted yes No. and Description of Boilers 3 single ended cylindrical

orking Pressure 185 lbs Tested by hydraulic pressure to 370 lbs Date of test 27/10/05, 20/11/05, 1/12/05 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 No. and Description of Safety Valves to _____

h boiler 1 pair spring Area of each valve 9.62 sq 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 tubular 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"

er 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"

Size of compensating ring 31 x 33 1/2" No. and Description of Furnaces in each boiler 3 Morrison's Material steel Outside diameter 46 1/4"

Length of plain part _____ top _____ Thickness of plates _____ crown 19" Description of longitudinal joint welded No. of strengthening rings _____

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 1/2" x 8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 189 lbs

Material of stays steel Diameter at smallest part 1.48" Area supported by each stay 58 sq Working pressure by rules 204 lbs End plates in steam space: _____

Material steel Thickness 15/16" Pitch of stays 17" x 18" How are stays secured 27/16" dia. Working pressure by rules 194 lbs Material of stays steel

Diameter at smallest part 5-4" Area supported by each stay 256 sq Working pressure by rules 210 lbs Material of Front plates at bottom steel

Thickness 25/32" 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 3/8" x 3 5/8" Material of tube plates steel Thickness: Front 25/32" Back 3/4" Mean pitch of stays 9-06

Pitch across wide water spaces 13 1/2" with 37 double Working pressures by rules 2487 x 235 lbs Girders to Chamber tops: Material steel Depth and _____

thickness 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 _____

W569-0106

VERTICAL DONKEY BOILER— Manufacturers of Steel

No. _____ Description None

Made at _____ By whom made _____ When made _____ Where fixed _____

Working pressure tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____ Fire grate area _____ Description of Safety 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 _____ Plates _____

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 P.H.P. turbine casing joints & coupling bolts & nuts, 1 bucket & rod for wet air pump & do for dry pump, 1 set of valves and seats for each feed & bilge pumps, bolts & nuts

The foregoing is a correct description, & is approved. *John Brown & Company, Limited.*

Manufacturer. *J. Henderson*

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, Jun 3, 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, 30, Feb 6, 12, 15, 19, 20, 24, 23, 24, Mar 5, 12, 14, 22, 24, 30, 31, 12, 14
Total No. of visits	24, 30, May 1, 9, 11, 15, 16, 22, 25, 30, Jun 6, 8, 12, 14, 17, 19, 25, Aug 20

Is the approved plan of main boiler forwarded herewith yes

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

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

Stern tube 16/8/05 Steam pipes tested 12/4/06 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. see Report 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 L.M.C. 8. 06. in the Register Book.

Plate No.	Plate	Plate	Plate	Plate
7101	3/8"	3/8"	3/8"	3/8"
7102	5/16"	5/16"	5/16"	5/16"
7103	1/2"	1/2"	1/2"	1/2"
7104 off	3/8"	1/4"	13/32"	13/32"

It is submitted that this vessel is eligible for THE RECORD L.M.C. 8. 06. E.D. ELEC. LIGHT. REF. MCHV. 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) £ : : : : :

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

Committee's Minute Glasgow 27 AUG 1906

Assigned L.M.C. 8. 06

Certificates (if required) to be sent to Glasgow

