

REPORT ON MACHINERY

No. 46112

-8 DEC 1926

Received at London Office

Date of writing Report 10 When handed in at Local Office 6. 12. 26 10 Port of Glasgow
 No. in Survey held at Glasgow Date, First Survey 26th Jan Last Survey 24th November 1926
 Reg. Book. on the new steel s/s "MATRA" (Number of Visits 91)
 Tons { Gross 4911
 Net
 Master Built at Port Glasgow By whom built Wm Hamilton & Co (S/N 396) When built 1926
 Engines made at Glasgow By whom made David Rowan & Co Ltd (N° 834) when made 1926
 Boilers made at Glasgow By whom made David Rowan & Co Ltd (N° 834) when made 1926
 Registered Horse Power 1047 Owners T & J. Bucklebank Ltd Port belonging to Liverpool.
 Shaft Horse Power at Full Power 4441 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

PARSONS TURBINE ENGINES, &c.—Description of Engines Parsons Turbines S.R. Gear No. of Turbines 2
 Diameter of Rotor Shaft Journals, H.P. 8" L.P. 8" Diameter of Pinion Shaft 7.62"
 Diameter of Journals 6.5" Distance between Centres of Bearings 2.84" Diameter of Pitch Circle 8.199"
 Diameter of Wheel Shaft 16" Distance between Centres of Bearings 6.25" Diameter of Pitch Circle of Wheel 145.64"
 Width of Face 40" Diameter of Thrust Shaft under Collars 15.78" Diameter of Tunnel Shaft as per rule 14.35"
 as fitted 14.2"
 Number of Screw Shafts one Diameter of same as per rule 15.85" as fitted 17.5" Diameter of Propeller 18.5" Pitch of Propeller 15.6"
 as fitted 2.24 to 3.2 to
 Number of Blades 4 State whether Moveable yes Total Surface 104 sq ft Diameter of Rotor Drum, H.P. 2.5" L.P. 4.6" Astern 3.5"
 Thickness at Bottom of Groove, H.P. Solid L.P. wheels Astern wheels Revs. per Minute at Full Power, Turbine 1700 Propeller 96

PARTICULARS OF BLADING.

H.P.			L.P.			ASTERN.		
HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
Impulse wheel 2 rows of blades mean dia 4.5"	2.52"	10	2.4"	3.63"	4	Impulse wheel 2 rows of blades mean dia 4.5"	2.52"	10
1.5"	2.6"	10	2.8"	3.73"	4	1.5"	3.8"	2
2"	2.7"	10	3.16"	3.93"	4	2.5"	3.10"	2
2.58"	2.84"	10	2.5"	4.11"	2	3.5"	4.0"	2
3.5"	2.10"	10	3.8"	5.04"	2	3.5"	4.0"	1
			4.2"	5.22"	1	3.5"	4.0"	1
			4.5"	5.34"	1			
			4.78"	5.52"	1			
			7.1"	5.9"	3			

and size of Feed pumps 2 @ 13.5" x 10" x 2.4" main feed (twins) also 1 @ 9.5" x 7.2" auxiliary feed.
 and size of Bilge pumps 7.88" x 8" Bilge 10.88" x 15" Auxiliary service 10.5" x 12" x 18" Ballast. All connected to bilge line.
 and size of Bilge suction in Engine Room 4 @ 3.5" and 2 @ 2.5"

In Holds, &c. N° 1 hold - 2 @ 3.5" N° 2 hold - 2 @ 3.5"
 hold - 2 @ 3.5" Deep tank 2 @ 3.5" N° 4 hold - 2 @ 3.5" N° 5 hold - 2 @ 3.5" Tunnel well - 1 @ 3.5"

Bilge Injections 1 sizes 12" Connected to condenser, or to circulating pump Is a separate Donkey Suction fitted in Engine Room & size yes. 5"

all the bilge suction pipes fitted with mud break & straight tailpipes Are the roses in Engine room always accessible Bilge injection rose accessible

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

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 both

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

pipes are carried through the bunkers forward hold suction How are they protected under timber boards

all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yes

all Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges yes

Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from upper deck

ROVERS, &c.—(Letter for record (r)) Manufacturers of Steel David Colville & Sons Ltd 458

Heating Surface of Boilers 15000 sq ft Is Forced Draft fitted yes No. and Description of Boilers four single ended

Working Pressure 200 Tested by hydraulic pressure to 350 Date of test 6-8-26 No. of Certificate 17184

each boiler be worked separately yes Area of fire grate in each boiler 68.32 sq ft No. and Description of Safety Valves to

boiler 2 spring Highlift Area of each valve 9.62 sq ft Pressure to which they are adjusted 200 Are they fitted with easing gear yes

least distance between boilers or uptakes and bunkers or woodwork well clear Mean dia. of boilers 17.0" Length 12.6" Material of shell plates steel

less 15.5" x 1.5" Range of tensile strength 30634 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams Centre TR. lap

seams D.B.S. & R Diameter of rivet holes in long. seams 1.9" x 1.5" Pitch of rivets 10.16" & 10.4" Lap of plates or width of butt straps 23" & 22.4"

stages of strength of longitudinal joint rivets 897 & 862 Working pressure of shell by rules 202 & 201 Size of manhole in shell 19.5" x 15.5"

compensating ring flanged 6.12" x 1.6" plates 85.03 & 85.3 No. and Description of Furnaces in each Boiler 4 Deighton Material steel Outside diameter 36.75"

of plain part top Thickness of plates 3.9" Description of longitudinal joint welded No. of strengthening rings none

bottom 6.4

working pressure of furnace by the rules 211 Combustion chamber plates: Material steel Thickness: Sides 11/16" Back 3/32" Top 11/16" Bottom 13/16"

of stays to ditto: Sides 9" x 8.5" Back 8.5" x 8.5" Top 9" x 8.5" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 200

all of stays 2 in Diameter at smallest part 1.76" Area supported by each stay 750" Working pressure by rules 203 End plates in steam space

steel Thickness 1.78" Pitch of stay 24" x 1.75" How are stays secured B.N. Working pressure by rules 200 Material of stays steel

at smallest part 8.29 & 7.0" Area supported by each stay 428 & 383" Working pressure by rules 206 & 205 Material of Front plates at bottom steel

less 7.8" Material of Lower back plate steel Thickness 5/16" Greatest pitch of stays 13.5" x 8.9" Working pressure of plate by rules 202

er of tubes 2.5" Pitch of tubes 3.34" x 3.98" Material of tube plates steel Thickness: Front 3/32" Back 3/32" Mean pitch of stays 10.9"

cross wide water spaces 13.5" Working pressures by rules 207 Girders to Chamber tops: Material steel Depth and

ss of girder at centre 2 @ 9.58" x 7.8" Length as per rule 37.9" Distance apart 8.75" Number and pitch of stays in each 309"

g pressure by rules 202 Steam dome: description of joint to shell none % of strength of joint Diameter

ss of shell plates Material Description of longitudinal joint Diameter of rivet holes Pitch of rivets

g pressure of shell by rules Crown plates: Thickness How stayed

SUPERHEATER. Type none Date of Approval of Plan _____ Tested by Hydraulic Pressure to _____
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 _____

IS A DONKEY BOILER FITTED? no If so, is a report now forwarded? _____

SPARE GEAR. State the articles supplied: 2 bolts and nuts for each size of rotor bearing. 2 bolts and nuts for main wheel bearing. 2 bolts and nuts for pinion bearings. 8 tunnel shaft coupling bolt and nuts. 1/20 total no of bolts and nuts for each gear case joint. 1/20 total no of bolts and nuts for each turbine casing joint. two main gear wheel bushes. two sets of bearing bushes for rotors. two end pinion bushes. one centre pinion bush. one pinion steady bush. 38 rotor and sleeve strips for glands. 12 and 8 liners for turbine adjusting blocks. 1 rod with piston and bucket. 1 valve chest and 12 valves for main feed pump. one set of bilge pump valves. one bucket, piston and rod and one set of valves for lubricating oil pump. Relief valve springs. bolts and bar iron of various sizes.
The foregoing is a correct description,
For David Rowan & Co Ltd
Archd. H. Grierson

Dates of Examination of principal parts—Casings 11-8-26 Rotors 11-8-26 Blading 2-9-26 Gearing 13-9-26
Rotor shaft 6-7-26 Thrust shaft 25-8-26 Tunnel shafts 6-8-26 Screw shaft 20-8-26 Propeller 2-9-26
Stern tube 5-8-26 Steam pipes tested 3-9-26 Engine and boiler seatings CRK Engines holding down bolts 15-10-26
Completion of pumping arrangements 11-11-26 Boilers fixed 13-10-26 Engines tried under steam 24-11-26
Main boiler safety valves adjusted 28-10-26 Thickness of adjusting washers 1/16, 5/16, all others 1/8
Material and tensile strength of Rotor shafts S.M.S. steel, annealed
Material and tensile strength of Pinion shafts forged normalized Nickel steel
Material of Wheel shaft S.M.S. steel Identification Mark on Do. LLOYD'S NO 2478 L.C.D. 13-9-26
Material of Tunnel shafts 1 steel Identification Marks on Do. LLOYD'S NO 834 L.C.D. 6-8-26
Material of Steam Pipes lap welded steel
Is an installation fitted for burning oil fuel no
Have the requirements of Section 49 of the Rules been complied with yes
Is this machinery a duplicate of a previous case yes If so, state name of vessel "Maidan" (Gls Rpt. No. 449)

General Remarks (State quality of workmanship, opinions as to class, &c.)
This machinery has been built under Special Survey in accordance with the Rules of this Society. The materials and workmanship are good and the machinery is eligible in my opinion to be classed as L.M.C. 11.26 in the Register Book. The machinery has been properly fitted on board and tried under steam.
It is submitted that this vessel is eligible for THE RECORD. + LMC 11.26. FD. 1047
2 Steam Turbines S.P. geared to 1 Screw Shaft.

The amount of Entry Fee ... £ 6 :
Special ... £ 126 : 3 : 6
Donkey Boiler Fee ... £ 50 :
Travelling Expenses (if any) £ :
When applied for, 6/12/26
When received, 8/12/26

Committee's Minute GLASGOW 7-DEC 1926
Assigned + L.M.C. 11.26. F.D.

J. J. Davis
8/12/26
Engineer Surveyor to Lloyd's Register of Shipping.