

REPORT ON MACHINERY.

No. 8423.

Date of writing Report 10th March 1923 When handed in at Local Office 15th March 1923 Port of Bunde Received at London Office FRI MAR 16 1923

No. in Survey held at Bunde Date, First Survey 1st Nov. 1921 Last Survey 10th March 1923
 Reg. Book. SS. "British Commodore" (Number of Visits 90.)

Master _____ Built at Bunde By whom built Caledon S.B. & C. Cos N^o 283 When built 1923
 Engines made at Manchester By whom made Metropolitan-Vickers Electrical Co when made 1922
 Boilers made at Bunde By whom made Caledon S.B. & C. Co. (No 483) when made 1923
 Registered Horse Power 643 N.H.P. Owners British Tanker Co. Ltd. Port belonging to London
 Shaft Horse Power at Full Power 3200 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

TURBINE ENGINES, &c.—Description of Engines Kateau Impulse H.P. & L.P. No. of Turbines Two

Diameter of Rotor Shaft Journals, H.P. _____ L.P. _____ Diameter of Pinion Shaft _____
 Diameter of Journals _____ Distance between Centres of Bearings _____ Diameter of Pitch Circle _____
 Diameter of Wheel Shaft _____ Distance between Centres of Bearings _____ Diameter of Pitch Circle of Wheel _____
 Width of Face _____ Diameter of Thrust Shaft under Collars 19 Diameter of Tunnel Shaft as per rule 14.5 as fitted 19
 No. of Screw Shafts One Diameter of same as per rule 16.78 as fitted 19.4 Diameter of Propeller 18-6 Pitch of Propeller 17-6
 No. of Blades 4 State whether Moveable Yes Total Surface 102 Diameter of Rotor Drum, H.P. _____ L.P. _____ Astern _____
 Thickness at Bottom of Groove, H.P. _____ L.P. _____ Astern _____ Revs. per Minute at Full Power, Turbine 3125 Propeller 73-75

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.
1ST EXPANSION									
2ND									
3RD									
4TH									
5TH									
6TH									
7TH									
8TH									

For Particulars see Manchester Report No 5010

No. and size of Feed pumps 1 weirs 9 1/2 x 7 x 21 & 1 electrically driven Rotary Pump

No. and size of Bilge pumps 1 Electric driven double pump 6 x 6: Bilge connections to General Service Pump 6 x 4 x 6 & Ballast Pump 10 x 12 x 10

No. and size of Bilge suction in Engine Room 3 @ 3 1/2: 2 @ 3 1/2 in bilge: 2 @ 3 1/2 in Cofferdam between D.B tanks in machy space

In Holds, &c. after Cofferdam @ 4" (Steam ejector): Pump room 2 @ 4"
forward Cofferdam @ 4": forward Cargo Hold 2 @ 3": ford Pump room @ 3": above 7 Peak tank top @ 3": Cargo oil tanks 2 each 10"

No. of Bilge Injections 1 sizes 11 Connected to condenser, or to circulating pump C.P. Is a separate Donkey Suction fitted in Engine Room & size Yes 3 1/2

Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room always accessible Yes

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

Are 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

Are 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

What pipes are carried through the bunkers None How are they protected -

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

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

Is the Screw Shaft Tunnel watertight None Is it fitted with a watertight door - worked from -

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Beardmore, Spencer, Hons. South Dusham: Scottish I.R.S. Jorner Long

Total Heating Surface of Boilers 8256 Is Forced Draft fitted Yes No. and Description of Boilers Three Single ended multitubular

Working Pressure 200 lbs Tested by hydraulic pressure to 350 lbs Date of test 4-7-22 No. of Certificate 996

Can each boiler be worked separately Yes Area of fire grate in each boiler Oil fired No. and Description of Safety Valves to each boiler Two Spring loaded Area of each valve 11.04 Pressure to which they are adjusted 205 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 14" Mean dia. of boilers 15-10 2/32 Length 12'-0" Material of shell plates S

Thickness 1 1/32" Range of tensile strength 30-34 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams L.D.R.

long. seams Oil Straps T.R. Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 9/4" Lap of plates or width of butt straps 20 1/8"

Per centages of strength of longitudinal joint rivets 85.9 plates 85.1 Working pressure of shell by rules 201 lbs Size of manhole in shell 16 x 12"

Size of compensating ring 39 x 35 x 1 1/2 No. and Description of Furnaces in each Boiler 4 Corrugated Material S Outside diameter 41 3/4"

Length of plain part top _____ bottom _____ Thickness of plates crown _____ bottom 9/16" Description of longitudinal joint weld No. of strengthening rings None

Working pressure of furnace by the rules 205 Combustion chamber plates: Material S Thickness: Sides 1/16" Back 3/4" Top 1/16" Bottom 13/16"

Pitch of stays to ditto: Sides 9 1/4 x 8 1/2" Back 8 1/4 x 8" Top 9 x 8 1/2" If stays are fitted with nuts or riveted heads Riveted heads & nuts as shown Working pressure by rules 201

Material of stays S Area at smallest part 7.2 x 2.03 Area supported by each stay 66 Working pressure by rules 232 End plates in steam space

Material S Thickness 1 9/32" Pitch of stays 21 x 1 1/2 x 1 5/8 How are stays secured D.N.F.W. Working pressure by rules 200 Material of stays S

Diameter at smallest part 7.06 Area supported by each stay 362.26 x 3/5 Working pressure by rules 200 Material of Front plates at bottom S

Thickness 1" Material of Lower back plate S Thickness 15/16" Greatest pitch of stays 14 1/4 x 8 1/4" Working pressure of plate by rules 252

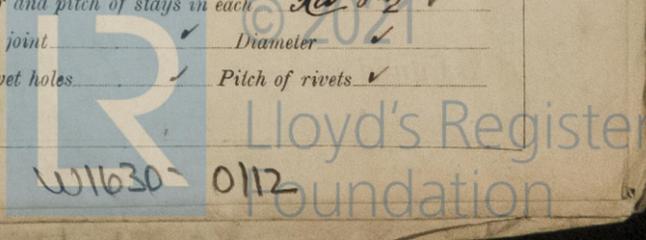
Diameter of tubes 3 1/4" Pitch of tubes 4 1/2 x 4 1/2" Material of tube plates S Thickness: Front 1" Back 7/8" Mean pitch of stays 11 1/4"

Pitch across wide water spaces 14 1/4" Working pressures by rules 202 Girders to Chamber tops: Material S Depth and thickness of girder at centre 9" x 1 1/2" Length as per rule 32.62 Distance apart 9" Number and pitch of stays in each 3 @ 8 1/2"

Working pressure by rules 204 Steam dome: description of joint to shell _____ % of strength of joint _____ Diameter _____

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

Working pressure of shell by rules _____ Crown plates: Thickness _____ How stayed _____



SUPERHEATER. Type *Francis Locomotive* Date of Approval of Plan *See attached Certificates* in position Tested by Hydraulic Pressure to *600 lbs*
 Date of Test *25-9-22* Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler *Yes*
 Diameter of Safety Valve *1 1/2* Pressure to which each is adjusted *210 lbs* Is Easing Gear fitted *Yes*

IS A DONKEY BOILER FITTED? *Yes* If so, is a report now forwarded? *Yes*

SPARE GEAR. State the articles supplied:— *Turbine & Gearing spare parts as per Manchester Report.*
1 screw shaft, 4 propeller blades, 1 set of propeller blade studs & nuts, 1 set of coupling bolts & nuts, 2 1/4
condenser tubes & 30 ferrules, 1 set of pads for Michell Thrust, 6 boiler tubes (plain) 1 stay tube, 3
main & 3 auxiliary feed check valves, spare parts for Weirs Pumps (Feed & air), spare parts for
General Service, Bilge, Ballast & Lubricating Oil Pumps. assorted brass iron bolts & nuts.

The foregoing is a correct description,
 FOR AND ON BEHALF OF
THE CALEDON SHIPBUILDING & ENGINEERING CO. LD Manufacturer.
J. D. [Signature] SECRETARY

Dates of Survey while building
 During progress of work in shops - *1921* Nov. 1, DEC. 1, 5, 23, 30. *1922* JAN. 6, 9, 14, 20, 24, FEB. 1, 2, 4, 14, 18, 21, 24, MAR. 6, 9, 14, 21, APR. 11, 14, MAY 12, 26, JUN. 1, 8, 22, 30.
 During erection on board vessel - *1922* JULY 3, 4, 13, 30. SEPT. 4, 5, 15, 25. OCT. 3, 11.
 Total No. of visits *90* Is the approved plan of main boiler forwarded herewith *Yes*
 " " " donkey " " " *Yes*

Dates of Examination of principal parts—Casings — Rotors — Blading — Gearing —
 Rotor shaft — Thrust shaft *30-6-22* Tunnel shafts *30-6-22* Screw shaft *30-6-22* Propeller *5-9-22*
 Stern tube *5-9-22* Steam pipes tested *1-8-10-15-21-23-27/2/23* Engine and boiler settings *30-7-22* Engines holding down bolts *29-11-22*
 Completion of pumping arrangements *10-3-23* Boilers fired *29-11-22* Engines tried under steam *10-3-23*
 Main boiler safety valves adjusted *28-2-23 & 5-3-23* Thickness of adjusting washers *P. P 3/8. S 7/16. S P 1/32. S 7/16. F. P 3/8. S 3/8.*
 Material and tensile strength of Rotor shaft — *Manchester Report* Identification Mark on Do. —
 Material and tensile strength of Pinion shaft — *Manchester Report* Identification Mark on Do. —
 Material of Wheel shaft — Identification Mark on Do. — Material of Thrust shaft *J* Identification Mark on Do. *LLOYDS NO 918 30-6-22 J.H.M.*
 Material of Tunnel shafts *J* Identification Marks on Do. *LLOYDS NO 918 30-6-22 J.H.M.* Material of Screw shafts *J* Identification Marks on Do. *30-6-22 J.H.M.*
 Material of Steam Pipes *L.W.I & Seamless steel* Test pressure *600 lbs*
 Is an installation fitted for burning oil fuel *Yes* Is the flash point of the oil to be used over 150°F. *Yes*
 Have the requirements of Section *35* of the Rules been complied with *Yes*

Is this machinery a duplicate of a previous case *Yes* If so, state name of vessel *British Commander. Rpt No 8400*

General Remarks (State quality of workmanship, opinions as to class, &c.) *These engines & boilers have been built under special survey and in accordance with the Rules and approved Plans: the materials and workmanship are sound & good; they have been fitted onboard in an efficient manner, tried under working conditions and found satisfactory and are eligible in our opinion to be classed with record of $\frac{1}{2}$ L.M.C. 3-23, and the notation of "Fitted for oil fuel 3.23. F.P. above 150°F."*

It is submitted that this vessel is eligible for THE RECORD. + LMC 3. 23. FD. OG. 643 NHP.
 Fitted for oil fuel 3. 23. F.P. above 150°F.
 2 Steam Turbines geared DR to 1 Screw Shaft.

The amount of Entry Fee ... £ *6* : *0* :
 Special ... £ *76* : *18* :
 Donkey Boiler Fee ... £ : :
 Travelling Expenses (if any) £ : :
 When applied for. *15/03/1923*
 When received. *21/3/1923*

J. D. [Signature] for self & J.H. Mackie
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minutes *JUE. 20 MAR. 1923*

Assigned *+ L.M.C. 3. 23*
J. D. O.G.
Fitted for oil fuel 3.23
F.P. above 150°F.

