

REPORT ON MACHINERY.

No. 8423.

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

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

Master Bundee Built at Bundee By whom built Caledon S.B. & E. Co. N^o 283 When built 1923
 Engines made at Manchester By whom made Metropolitan-Vickers Electrical Co. when made 1922
 Boilers made at Bundee By whom made Caledon S.B. & E. 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 Diameter of Propeller 18.6" ✓ Pitch of Propeller 17.6" ✓
No L.I.N.E.R. VICKERS O.G. as fitted 19.4" ✓

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 "									

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 Oil Bilge 2 @ 3 1/2" in Cofferdam between D.B. tanks in Machy space

In Holds, &c. after Cofferdam 10 4" (Steam ejector) Pump room 2 @ 4"

Forward Cofferdam 1 @ 4" Forward Cargo Hold 2 @ 3" Ford Pump room 1 @ 3" above Peak tank top 1 @ 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 Dushane, Scottish I.R.S. Jorman 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 1/4" Lap of plates or width of butt straps 20 1/8"

Per centages of strength of longitudinal joint 85.9 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 1/32 No. and Description of Furnaces in each Boiler 4 Corrugated Material S Outside diameter 41 3/4"

Length of plain part top 9 1/16" Thickness of plates bottom 9 1/16" 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 11/16" Back 3/4" Top 11/16" 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 leads & nuts as shown Working pressure by rules 201

Material of stays S at smallest part 1 1/32 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 1/4 x 1 1/5 How are stays secured D.N.T.W. Working pressure by rules 200 Material of stays S

Diameter at smallest part 7.06 Area supported by each stay 362.25 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 30 x 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 *Marine Locomotive* Date of Approval of Plan *See attached Certificates* 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 Nickel 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 bar iron bolts & nuts.

The foregoing is a correct description,
FOR AND ON BEHALF OF
THE CALEDON SHIPBUILDING & ENGINEERING CO. LD
Secretary.

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 *1-8-10-15-21-23-27/28* 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. 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 — Identification Mark on Do. *LLOYDS NO 918*
Material of Tunnel shafts *S* Identification Marks on Do. *30-6-22 J.H.M.* Material of Screw shafts *S* 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 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, *22/3/1923*

J. S. Lillie for self & J. H. Mackie
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *TUE. 20 MAR. 1923*
Assigned *+ L.M.C. 3. 23*
F.P. above 150°F.
D.R.