

REPORT ON MACHINERY.

No. 40871.

Received at London Office

Date of writing Report 14. 2. 1921 When handed in at Local Office 14. 2. 1921 Port of Glasgow.
No. in Survey held at Clydebank Date, First Survey 27. 4. 1920. Last Survey 3. 2. 1921.
Reg. Book. on the S.S. "Calgary" (Number of Visits 39)
Master Built at Clydebank By whom built John Brown & Co. (1921) When built 1921
Engines made at Clydebank By whom made John Brown & Co. (1921) when made 1921
Boilers made at Clydebank By whom made John Brown & Co. (1921) when made 1921
Registered Horse Power 667 Owners Elder Dempster & Co. Port belonging to
Shaft Horse Power at Full Power 2950 Is Refrigerating Machinery fitted for cargo purposes yes Is Electric Light fitted yes

URBINE ENGINES, &c.—Description of Engines Brown Curtis Double Reduction Turbine No. of Turbines 3
Diameter of Rotor Shaft Journals, H.P. 3" 12 1/4" L.P. 8" Diameter of Pinion Shaft H.P. 1 1/2" L.P. 7" 2nd Red 1 1/2"
Diameter of Journals H.P. 1 1/2" L.P. 7" Distance between Centres of Bearings H.P. 1 1/2" L.P. 7" Diameter of Pitch Circle H.P. 1 1/2" L.P. 7" 2nd Red 1 1/2"
Diameter of Wheel Shaft 20" Distance between Centres of Bearings 7" 3/4" Diameter of Pitch Circle of Wheel 23.9798
Width of Face 30" Diameter of Thrust Shaft under Collars 15" Diameter of Tunnel Shaft as per rule 14.1 as fitted 14.35
No. of Screw Shafts 1 with cont. line as per rule 15.5 Diameter of Propeller 18.6" Pitch of Propeller 17.3"
No. of Blades 4 State whether Moveable yes Total Surface 110f 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 H.P. 1670 Propeller 75

ARTICULARS 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									
TH									
TH									
TH									
TH									
TH									

No. and size of Feed pumps 2 Weirs 8" x 24" x 10 1/2"
No. and size of Bilge pumps 2 9" x 18" x 8"
No. and size of Bilge suction in Engine Room (4) 3 1/2"
In Holds, &c. (10) 3 1/2"

No. of Bilge Injections 1 sizes 12" Connected to condenser, or to circulating pump pump 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 food bilge & ballast suction How are they protected under floor
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 yes Is it fitted with a watertight door yes worked from upper deck

OILERS, &c.—(Letter for record 15) Manufacturers of Steel David Colville & Sons
Total Heating Surface of Boilers 9235.4 Is Forced Draft fitted yes No. and Description of Boilers 4 Single ended
Working Pressure 215 Tested by hydraulic pressure to 375 Date of test 8/7/20 13/7/20 No. of Certificate 15382 15392.
Can each boiler be worked separately yes Area of fire grate in each boiler 49.875 No. and Description of Safety Valves to each boiler 1 pair spring Pressure to which they are adjusted 220 lbs Are they fitted with easing gear yes
Smallest distance between boilers for uptakes and bunkers or woodwork 15.0" Length 11.6" Material of shell plates steel
Thickness 1 3/8" Range of tensile strength 29.5 33 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams double lap
Long. seams tubular butt Diameter of rivet holes in long. seams 1 3/16" Pitch of rivets 9 3/8" Length of plates or width of butt straps 21"
Per centages of strength of longitudinal joint rivets 88.89 plates 88.44 Working pressure of shell by rules 216 Size of manhole in shell 16" x 12"

Size of compensating ring 3'-3" x 2' 10" No. and Description of Furnaces in each Boiler 3 Harrison's Material steel Outside diameter 46 1/2"
Length of plain part top crown bottom Thickness of plates 5/8" Description of longitudinal joint weld No. of strengthening rings 1
Working pressure of furnace by the rules 216 Combustion chamber plates: Material steel Thickness: Sides 21/32 Back 21/32 Top 21/32 Bottom 13/16
Pitch of stays to ditto: Sides 7 3/4" x 8 3/4" Back 8 3/8" x 8 1/2" Top 8 3/4" x 7 3/4" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 228
Material of stays steel Diameter at smallest part 1.875" Area supported by each stay 65.0" Working pressure by rules 227 End plates in steam space
Material steel Thickness 1 3/16" Pitch of stays 18" x 16" How are stays secured 2 nuts Working pressure by rules 215 Material of stays steel
Diameter at smallest part 6.21 Area supported by each stay 257.5" Working pressure by rules 225 Material of Front plates at bottom steel
Thickness 32 Material of Lower back plate steel Thickness 32 Greatest pitch of stays 14" Working pressure of plate by rules 215
Diameter of tubes 2 3/4" Pitch of tubes 4" x 4" Material of tube plates steel Thickness: Front 32 Back 32 Mean pitch of stays 10"
Pitch across wide water spaces 14" with 98 Working pressures by rules 272 Girders to Chamber tops: Material steel Depth and
Thickness of girder at centre 10" x 3/4" double Length as per rule 33 Distance apart 8 3/4" Number and pitch of stays in each (3) 7 3/4"
Working pressure by rules 220 Steam dome: description of joint to shell none % 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

003006-003012-0208

SUPERHEATER. Type *Schmidt* Date of Approval of Plan *See Copy of Certificate* 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 *yes*
Diameter of Safety Valve *2"* Pressure to which each is adjusted *225* Is Easing Gear fitted *yes*
IS A DONKEY BOILER FITTED? *no* If so, is a report now forwarded? *✓*
SPARE GEAR. State the articles supplied:— *see list appended*

The foregoing is a correct description,
John Brown & Company, Limited.
Manufacturers.
J. Henderson
Clydebank Secretary.

Dates of Survey while building { During progress of work in shops -- 1920 Apr 27 Jun 14 July 5.8.13.14 Aug 2.4.6.17.19.27 Sep 6.13.14.15.20 Oct 19.21.22.26 Nov 8.12.18.22.24
During erection on board vessel --- Dec 1.6.14.20.22.23 (1921) Jan 14.26.27 Feb 1.3
Total No. of visits *39* Is the approved plan of main boiler forwarded herewith *yes*

Dates of Examination of principal parts—Casings *6/8/20* Rotors *8/11/20* Blading *8/11/20* Gearing *8/11/20*

Rotor shaft *8/11/20* Thrust shaft *14/6/20* Tunnel shafts *14/6/20* Screw shaft *14/6/20* Propeller *19/5/20*

Stern tube *14/6/20* Steam pipes tested *26/10/20* Engine and boiler seatings *19/8/20* Engines holding down bolts *1/12/20*

Completion of pumping arrangements *3/2/21* Boilers sized *1/12/20* Engines tried under steam *3/2/21*

Main boiler safety valves adjusted *22/12/20* Thickness of adjusting washers *Lead 13 3/4 3/8 3/16 3/32 3/64 3/128 3/256 3/512 3/1024 3/2048 3/4096 3/8192 3/16384 3/32768 3/65536 3/131072 3/262144 3/524288 3/1048576 3/2097152 3/4194304 3/8388608 3/16777216 3/33554432 3/67108864 3/134217728 3/268435456 3/536870912 3/1073741824 3/2147483648 3/4294967296 3/8589934592 3/17179869184 3/34359738368 3/68719476736 3/137438953472 3/274877906944 3/549755813888 3/1099511627776 3/2199023255552 3/4398046511104 3/8796093022208 3/17592186044416 3/35184372088832 3/70368744177664 3/140737488355328 3/281474976710656 3/562949953421312 3/1125899906842624 3/2251799813685248 3/4503599627370496 3/9007199254740992 3/18014398509481984 3/36028797018963968 3/72057594037927936 3/144115188075855872 3/288230376151711744 3/576460752303423488 3/1152921504606846976 3/2305843009213693952 3/4611686018427387904 3/9223372036854775808 3/18446744073709551616 3/36893488147419103232 3/73786976294838206464 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