

# REPORT ON MACHINERY.

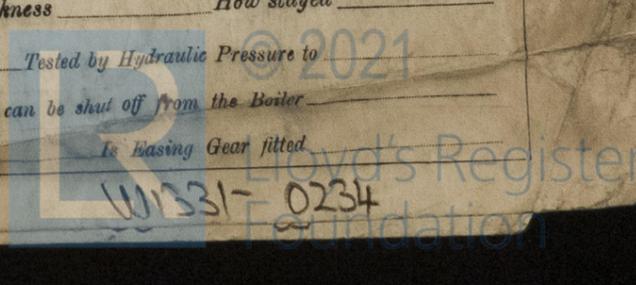
Received at London Office

Date of writing Report 30 June 1920 When handed in at Local Office 7 July 1920 Port of Vancouver BC  
 Survey held at Vancouver BC Date, First Survey 18 February Last Survey 19<sup>th</sup> June 1920  
 Book on the Single Screw SS "MARGARET COUGHLAN" (Number of Voids) Gross 5703.93 Net 3531.44  
 Built at Vancouver BC By whom built J. Coughlan & Sons Ltd When built 1920  
 Made at Greenock Scotland By whom made J. G. Kincaid & Co when made 1920  
 Made at Vancouver BC By whom made Vulcan Iron Works (when made 1920 see separate report N° 565)  
 Rated Horse Power 3000 Owners Canada Western AG Port belonging to Vancouver BC  
 Horse Power as per Section 28 520 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

**ENGINES, &c.**—Description of Engines Triple expansion No. of Cylinders 3 No. of Cranks 3  
 Length of Stroke 48" Revs. per minute 83 Dia. of Screw shaft as per rule 14.7 Material of screw shaft Steel  
 as fitted 15.2  
 screw shaft fitted with a continuous liner the whole length of the stern tube yes Is the after end of the liner made water tight  
 propeller boss yes If the liner is in more than one length are the joints burned yes If the liner does not fit tightly at the part  
 in the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive yes If two  
 are fitted, is the shaft lapped or protected between the liners yes Length of stern bush 5'-2"  
 Dia. of Tunnel shaft as per rule 13.70 13.33 Dia. of Crank shaft journals as per rule 13.9 14 Dia. of Crank pin 14.2 Size of Crank webs 91.38 Dia. of thrust shaft under  
 as fitted 13.2 as fitted 14.2  
 Dia. of screw 17'-6" Pitch of Screw 18 feet No. of Blades 4 State whether moveable yes Total surface 95.5  
 Feed pumps 3 Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work yes  
 Bilge pumps 3 Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work yes  
 Donkey Engines 1 Sizes of Pumps 10.2" x 14" x 24" No. and size of Suctions connected to both Bilge and Donkey pumps  
 Engine Room 2 off 3.2" & 2 off 4" In Holds, &c. N°1 Hold 2 off 3.2", N°2 Hold 2 off 3.2"  
 Hold 2 off 3.2", N°4 Hold 2 off 3.2", Boiler Room 2 off 3.2", Tunnel Hull 1 off 3.2"  
 Bilge Injections 1 sizes 9" Connected to condenser, or to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size two 4"  
 Are 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 yes  
 All connections with the sea direct on the skin of the ship yes Are they Valves or Cocks Valves & Cocks  
 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  
 How are they protected Wood covering  
 pipes are carried through the bunkers bilge pipes  
 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  
 The Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from Upper Deck Grating, Engine Room

**BOILERS, &c.**—(Letter for record 5) Manufacturers of Steel Windsor Steel Co  
 Heating Surface of Boilers 7743 Is Forced Draft fitted yes No. and Description of Boilers 3 Scotch Marine  
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 25-5-20 No. of Certificate 34  
 Can each boiler be worked separately yes Area of fire grate in each boiler 66.12 sq No. and Description of Safety Valves to  
 boiler 2 off Lockburn Glasgow Area of each valve 9.64 sq Pressure to which they are adjusted 180 lbs Are they fitted with easing gear yes  
 Least distance between boilers or uptakes and bunkers or woodwork 18" Mean dia. of boilers 15'-7.8" Length 11.6 Material of shell plates Steel  
 Thickness 1.3/8 Range of tensile strength 60000 lbs Are the shell plates webbed or flanged no Descrip. of riveting: cir. seams Double  
butt straps Diameter of rivet holes in long. seams 1.3/8" Pitch of rivets 9.3/16 Lap of plates or width of butt straps 19.3/8  
 Percentages of strength of longitudinal joint rivets 87.4 Working pressure of shell by rules 188.4 Size of manhole in shell 16 x 12  
 plate 8.5  
 Description of Furnaces in each boiler 3 Brighton Material Steel Outside diameter 50.4  
 Thickness of plates crown 5/8 Description of longitudinal joint No. of strengthening rings 1  
 bottom 5/8  
 Working pressure of furnace by the rules 188 Combustion chamber plates: Material Steel Thickness: Sides 5/8 Back 5/8 Top 5/8 Bottom 15/16  
 of stays to ditto: Sides 7.2 Back 8 Top 9.3/4 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 196  
 Material of stays Steel Area at smallest part 1.978 Area supported by each stay 16.87 Working pressure by rules End plates in steam space:  
 Material Steel Thickness 1.1/16 Pitch of stays 15 x 18 How are stays secured nuts Working pressure by rules 202 Material of stays Steel  
 at smallest part 2.1/4 Area supported by each stay nuts Working pressure by rules 202 Material of Front plates at bottom Steel  
 Thickness 1.3/16 Material of Lower back plate Steel Thickness 1.3/16 Greatest pitch of stays 13.1/2 Working pressure of plate by rules 199  
 Pitch of tubes 4.2 Material of tube plates Steel Thickness: Front 1.3/16 Back 3/4 Mean pitch of stays 8.2  
 across wide water spaces 13.1/2 Working pressures by rules 183.3 Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 10 x 3.1/4 Length as per rule yes Distance apart 9.3/4 Number and pitch of stays in each 3 off 7.2  
 Working pressure by rules 250 Steam dome: description of joint to shell yes % of strength of joint  
 Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes  
 Working pressure of shell by rules Crown plates Thickness How stayed

**SUPERHEATER.** Type \_\_\_\_\_ Date of Approval of Plan \_\_\_\_\_ Tested by Hydraulic Pressure to \_\_\_\_\_  
 Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler \_\_\_\_\_  
 Is Hasing Gear fitted \_\_\_\_\_  
 Pressure to which each is adjusted \_\_\_\_\_



IS A DONKEY BOILER FITTED? *no*

If so, is a report now forwarded? *—*

SPARE GEAR. State the articles supplied:— *two connecting rod top and bottom end bolts and nuts, two main bearing bolts and nuts, six coupling bolts & nuts, one set of fuel and one set of bilge pump valves, three main and three donkey fuel check valves, 24 bolts & nuts assorted, 6 cylinder & 6 steam cover studs & nuts, 12 junk ring studs & nuts, a quantity of iron of various sizes, one propeller blade, 1 HP piston valve, condenser tubes & ferrules, boiler tubes, white metal, rods &...*

The foregoing is a correct description,

*Wm Coughlan & Sons Ltd* Manufacturer.

Dates of Survey while building: During progress of work in shops -- 1920 Feb 18 March 23, 25, 29 April 1, 8, 9, 12, 13, 14, 22, 24, 28; During erection on board vessel -- May 1, 5, 6, 10, 11, 14, 18, 25, 27, June 1, 4, 5, 17, 19; Total No. of visits 27. Is the approved plan of main boiler forwarded herewith *yes*

Dates of Examination of principal parts: Cylinders *See Glasgow Report No 565*, Slides, Covers, Pistons, Rods; Connecting rods, Crank shaft, Thrust shaft, Tunnel shafts, Screw shaft, Propeller; Stern tube, Steam pipes tested, Engine and boiler seatings, Engines holding down bolts; Completion of pumping arrangements, Boilers fixed, Engines tried under steam; Completion of fitting sea connections, Stern tube, Screw shaft and propeller; Main boiler safety valves adjusted, Thickness of adjusting washers; Material of Crank shaft, Identification Mark on Do., Material of Thrust shaft, Identification Mark on Do.; Material of Tunnel shafts, Identification Marks on Do., Material of Screw shafts, Identification Marks on Do.; Material of Steam Pipes, Test pressure 600. 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 49 of the Rules been complied with *yes*. Is this machinery duplicate of a previous case *yes*. If so, state name of vessel *SS Braholm*.

General Remarks (State quality of workmanship, opinions as to class, &c. *The engines and boilers of the vessel have been built under special survey, installed under special survey and in accordance with approved plans together with auxiliary pumps, piping, mountings, fittings & sea connections etc.*

*The material and workmanship are of good quality. On completion of the machinery installation the vessel was tried under full steam at sea and found satisfactory.*

*Please refer to Glasgow Report No 565.*

*Safety valves were adjusted under steam.*

*The machinery & Boilers are eligible in my opinion to have record + LMC 19-20 made in Register Book.*

*It is submitted that this vessel is eligible for THE RECORD + LMC 6.20 FII Fitted for oil fuel 6.20 F.P. above 150°F*

*RCM 6/8/20*

The amount of Entry Fee ... \$ 15.00: Special ... \$ 153.00: Donkey Boiler Fee ... £ : Travelling Expenses (if any) £ :

When applied for *7 July 20* When received *15/8/20*

*Loan Edwards* Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned *+ L.M.C. 6,20 F.D. Fitted for oil fuel 6,20 F.P. above 150°F.*



The Surveyors are requested not to write on or below the space for Committee's Minute.