

# REPORT ON MACHINERY.

No. 64

Received at London Office

Port of DULUTH, MINN. U.S.A.

Date of writing Report JULY 1920 When handed in at Local Office

Date, First Survey 4<sup>th</sup> Dec. 1919. Last Survey 17<sup>th</sup> July 1920

No. in Survey held at DULUTH, MINN.

Master J. N. Sutherland on the Steel Screw Steamer "Julius Kessler"

Built at Duluth, Minn. By whom built W. Duggall Duluth Shipbuilding Co.

Engines made at Duluth, Minn. By whom made W. Duggall Duluth Shipbuilding Co. when made 1920

Boilers made at " By whom made " when made 1920

Registered Horse Power 262 Owners Sugar Products Co. Port belonging to St. John, N.B.

Horse Power as per Section 28 262 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes.

Engines, &c.—Description of Engines Triple Expansion Reciprocating No. of Cylinders 3 No. of Cranks 3

No. of Cylinders 19-32 1/2-54 Length of Stroke 40 Revs. per minute 88 Dia. of Screw shaft 11 1/4 Material of screw shaft S.

The 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

the propeller boss Yes. If the liner is in more than one length are the joints burned No joints If the liner does not fit tightly at the part

between 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 4-5

No. of Tunnel shaft 11 Dia. of screw 14-0 Pitch of Screw 13-10 No. of Blades 4 State whether moveable No. Total surface 67-75 sq ft

No. of Feed pumps None attached Diameter of ditto 4 1/2 Stroke 20 Can one be overhauled while the other is at work Yes.

No. of Bilge pumps 2 Diameter of ditto 4 1/2 Stroke 20 Can one be overhauled while the other is at work Yes.

No. of Donkey Engines 4 Sizes of Pumps 2 VS. 10 x 6 x 16 1 V.D. 7 1/2 x 8 1/2 x 10 No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room 4-3 In Holds, &c. 2-3 in 18 1 hold. 2-3 in 18 2 hold. 1-2 in 18 4 well.

No. of Bilge Injections 1 sizes 7 Connected to condenser, or to circulating pump Yes. Is a separate Donkey Suction fitted in Engine room & size 1-3

Are all 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 None.

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 Both.

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 Yes.

Are all pipes carried through the bunkers None.

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. Is it worked from Main deck.

Suppliers, &c.—(Letter for record (S)) Manufacturers of Steel Midvale Steel Co.

Total Heating Surface of Boilers 3828 sq ft Is Forced Draft fitted Yes. No. and Description of Boilers 2 Scotch.

Working Pressure 190 lbs Tested by hydraulic pressure to 285 Date of test 30-3-20 No. of Certificate 54

Can each boiler be worked separately Yes. Area of fire grate in each boiler 50 sq ft No. and Description of Safety Valves to

each boiler 2 Spring loaded Area of each valve 7.07 sq in Pressure to which they are adjusted 190 lbs Are they fitted with easing gear Yes.

Smallest distance between boilers 13 Mean dia. of boilers 13-0 Length 11-0 Material of shell plates S.

Thickness 1 1/4 Range of tensile strength 61000 to 71680 lbs Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D.R.L.

g. seams TR. D.B.S. Diameter of rivet holes in long. seams 1 1/4 Pitch of rivets 8 1/4, 4 1/2 Lap of plates or width of butt straps 4 1/4

Percentages of strength of longitudinal joint rivets 88 Working pressure of shell by rules 205 Size of manhole in shell 19 x 15

Percentage of strength of longitudinal joint plate 84.8 No. and Description of Furnaces in each boiler 2 Morrison Material S. Outside diameter 52 1/4

Length of plain part top 1 Thickness of plates crown 5/8 Description of longitudinal joint welded No. of strengthening rings None

Working pressure of furnace by the rules 192 Combustion chamber plates: Material S Thickness: Sides 5/8 Back 5/8 Top 5/8 Bottom 1 3/32

Number of stays to ditto: Sides 6 7/8 x 6 Back 6 13/16 x 6 1/4 Top 7 1/8 x 6 If stays are fitted with nuts or riveted heads Yes. nuts remain Working pressure by rules 215

Material of stays S. Area at smallest part 1.27 sq in Area supported by each stay 46 sq in Working pressure by rules 221 End plates in steam space:

Material S. Thickness 1 1/16 Pitch of stays 15 x 14 How are stays secured D. nuts Working pressure by rules 240 Material of stays S.

Area at smallest part 4.43 sq in Area supported by each stay 210 Working pressure by rules 219 Material of Front plates at bottom S

Thickness 3/4 Material of Lower back plate S. Thickness 1 1/16 Greatest pitch of stays 12.75 Working pressure of plate by rules 210

Diameter of tubes 2 1/2 Pitch of tubes 3 3/4 Material of tube plates S. Thickness: Front 5/8 Back 11/16 Mean pitch of stays 7 1/2

Width across wide water spaces 13 1/2 x 9 1/2 Working pressures by rules 221 Girders to Chamber tops: Material S Depth and

Thickness of girder at centre 8 5/8 x 1 1/4 Length as per rule 27 Distance apart 7 7/8 Number and pitch of stays in each 3 @ 6

Working pressure by rules 193 Steam dome: description of joint to shell " % of strength of joint "

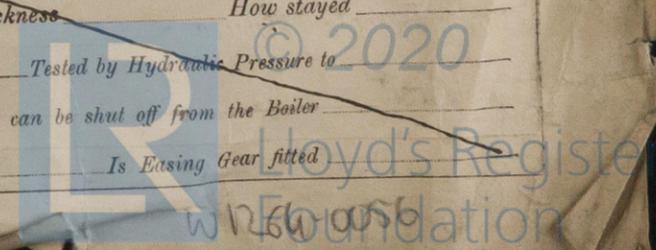
Diameter " Thickness of shell plates " Material " Description of longitudinal joint " Diam. of rivet holes "

Pitch of rivets " Working pressure of shell by rules " Crown plates " Thickness " How stayed "

SUPERHEATER. Type " 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?

Rpt. 13.

SPARE GEAR. State the articles supplied:— 2 connecting rod top end bolts and nuts, 2 connecting rod bottom end bolts and nuts, 2 main bearing bolts, 1 set of coupling bolts, 1 set of feed and bilge pump valves, 1 set of piston springs, a quantity of assorted bolts and nuts, iron of various sizes, one spare propeller, 2 eccentric strap bolts and nuts, one set of crank pin and crosshead bearings, one valve spindle complete, spare parts for auxiliary machinery, a number of plain boiler tubes and condenser tubes with ferrules, studs for cylinder covers etc.

REPORT

Port of DULUTH  
No. in Reg. Book  
Built at Sugar  
Owners  
Card No. 37

The foregoing is a correct description,  
McDougall-Duluth Shipbuilding Co.

McDougall  
ASST. GEN. MGR.

Manufacturer.

Dates of Survey while building  
During progress of work in shops -- DEC. 4-15-17-23-29. 1920  
During erection on board vessel --- MAY 6-10-14-20  
Total No. of visits 51  
Is the approved plan of main boiler forwarded herewith Hand

Dates of Examination of principal parts—Cylinders 6-4-20 Slides 18-4-20 Covers 6-4-20 Pistons 6-5-20 Rods 6-5-20  
Connecting rods 30-3-20 Crank shaft 23-4-20 Thrust shaft 4-3-20 Tunnel shafts 23-3-20 Screw shaft 26-4-20 Propeller 28-6-20  
Stern tube 6-4-20 Steam pipes tested 26-6-20 Engine and boiler seatings 18-3-20 Engines holding down bolts 1-7-20  
Completion of pumping arrangements 12-7-20 Boilers fixed 10-5-20 Engines tried under steam 15-7-20  
Completion of fitting sea connections 14-5-20 Stern tube 14-5-20 Screw shaft and propeller 1-7-20  
Main boiler safety valves adjusted 28-6-20 Thickness of adjusting washers No washers fitted.

Material of Crank shaft S Identification Mark on Do. LLOYD'S NO 183 1920 G.T. Material of Thrust shaft S Identification Mark on Do. LLOYD'S NO 183 1920 G.T.  
Material of Tunnel shafts S Identification Marks on Do. LLOYD'S NO 183 1920 G.T. Material of Screw shafts S Identification Marks on Do. LLOYD'S NO 183 1920 G.T.  
Material of Steam Pipes Lap welded steel. Test pressure 570 lb.  
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 No. If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c.)

These engines and boilers have been constructed under special survey and in accordance with the rules and approved plans. The materials employed in their construction and workmanship are sound and good. Both engines and boilers have been satisfactorily installed, proving efficient under tests and in my opinion are eligible to receive the notation + L.M.C. 7-20. Fitted for oil fuel. F.P. above 150°F. Electric light, food etc.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 7.20 F.D.

Fitted for oil fuel 7-20 FP above 150°F

Retl  
24/8/20

GRK

Table with columns for fee type (Entry Fee, Special, Donkey Boiler Fee, Travelling Expenses), amount (£), and date when applied for or received.

Geo. Tully  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute  
Assigned

New York AUG - 3 1920  
+ L.M.C. 7.20  
MACHINERY CERT  
WRITTEN 17/8/20

DESCRIPTION OF DYNAMO  
One General  
6 1/2" x 5" x 4"  
Capacity of Dynamo  
Where is Dynamo fixed  
Position of Main Switch  
Positions of auxiliary switches  
4 switches  
If fuses are fitted on circuits Yes.  
If vessel is wired on the  
Are the fuses of non-oxidizing  
Are all fuses fitted in enclosures  
are permanent installations  
Are all switches and fuses  
Total number of lights  
A Captain's Office  
B Crew's Office  
C Engine room  
D Tunnel  
E Boiler room  
one Mast head light  
2 Side light  
16  
If arc lights, what protection  
Where are the switches  
DESCRIPTION OF CABLES  
Main cable carrying  
Branch cables carrying  
Branch cables carrying  
Leads to lamps carrying  
Cargo light cables carrying  
DESCRIPTION OF INSULATION  
Rubber cover  
In cabins,  
the Rubber  
Joints in cables, how made  
boxes when  
Are all the joints of cables  
positions, none being  
Are there any joints in cables  
How are the cables led

Certificate (if required) to be sent to  
The Surveyors are requested not to write on or below the space for Committee's Minute.

