

# REPORT ON MACHINERY.

No. 924

TUE 2 MAR 1920

Received at London Office

REG'D NEW YORK 5th Nov 1920  
Date of writing Report July 4-1920 When handed in at Local Office July 5th 1920 Port of Seattle Wash USA

To. in Survey held at Seattle Date, First Survey November 1st 1919 Last Survey January 23rd 1920  
(Number of Visits 19)

Reg. Book. ENTRY on the Steel Screw Steamer "ROBIN GRAY" (Builders Yard No. 78) Tons Gross 6859.9 Net 5120.7

Master H. K. Wills Built at Seattle By whom built Skinner & Eddy Corporation When built 1920

Engines made at Erie Pa. By whom made General Electric Company when made 1919

Boilers made at Seattle By whom made Commercial Boiler Works when made 1919

Registered Horse Power \_\_\_\_\_ Owners Robin Line Steamship Co. (D. E. Skinner Agent) Port belonging to San Francisco, Cal.

Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted yes

Engines, &c.—Description of Engines Curtis Turbine with double reduction gear No. of Cylinders \_\_\_\_\_ No. of Cranks \_\_\_\_\_

Length of Stroke \_\_\_\_\_ Revs. per minute 90 Dia. of Screw shaft \_\_\_\_\_ as per rule 14.47 Material of Steel  
as fitted 15 screw shaft

Is 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

If the liner is in more than one length are the joints burned yes 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 \_\_\_\_\_ If two

are fitted, is the shaft lapped or protected between the liners \_\_\_\_\_ Length of stern bush 61"

Dia. of Thrust shaft under \_\_\_\_\_ as per rule 13.27 Dia. of Crank shaft journals \_\_\_\_\_ as per rule \_\_\_\_\_ Dia. of Crank pin \_\_\_\_\_ Size of Crank webs \_\_\_\_\_

as fitted 13.5 Dia. of screw 17'-0" Pitch of Screw 14'-3" No. of Blades 4 State whether moveable yes Total surface 59.5 sq ft

of Feed pumps 2 Diameter of ditto 9" Stroke 24" Can one be overhauled while the other is at work yes

of Bilge pumps 3 Duplex Diameter of ditto 6 x 5 3/4 x 6 Stroke \_\_\_\_\_ Can one be overhauled while the other is at work yes

of Donkey Engines As Above Sizes of Pumps As Above No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room 5'-3 1/2" Fire Room 4'-3 1/2" In Holds, &c. 10'-3 1/2" Deep Tank 4'-4 1/2" Shaft Tunnel 1'-3 1/2"

of Bilge Injections 1 sizes 10" Connected to condenser circulating pump yes Is a separate Donkey Suction fitted in Engine room & size yes 3 1/2"

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

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

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 Below

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

if pipes are carried through the bunkers Tank Air Pipes How are they protected Wood Casing

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 Engine Room Casing at upper deck

MAKERS, &c.—(Letter for record Aug 12-1919 Manufacturers of Steel Illinois Steel Co. and Carnegie Steel Co. S.S.B.

Heating Surface of Boilers 8346 Is Forced Draft fitted yes No. and Description of Boilers 3 Single End Scotch Marine

Working Pressure 210 Tested by hydraulic pressure to 315 Date of test Nov. 28-1919 No. of Certificate \_\_\_\_\_

each boiler be worked separately yes Area of fire grate in each boiler 63 sq ft No. and Description of Safety Valves to

boiler two 3 1/2" dia Spring loaded Area of each valve 9.6 Pressure to which they are adjusted 210 Are they fitted with easing gear yes

Least distance between boilers or uptakes and bunkers or woodwork Boilers 39" Mean dia. of boilers 14'-9" Length 11'-9" Material of shell plates Steel

Thickness 1 1/16" Range of tensile strength 60,000 Min Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Double Lap

seams Triple Butt Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 10 1/2" Top of plates width of butt straps 22 3/4"

percentages of strength of longitudinal joint \_\_\_\_\_ rivets 86.2 Working pressure of shell by rules 229 Size of manhole in Upper Back Head 12" x 16"

of compensating ring Flanged No. and Description of Furnaces in each boiler 3 Monitors Material Steel Outside diameter 45 1/16"

Thickness of plates \_\_\_\_\_ top \_\_\_\_\_ bottom \_\_\_\_\_ Description of longitudinal joint Welded No. of strengthening rings \_\_\_\_\_

Working pressure of furnace by the rules 222 Combustion chamber plates: Material Steel Thickness: Sides 1/16" Back 1/16" Top 1/16" Bottom 15/16"

of stays to ditto: Sides 7 x 7 3/4" Back 7 1/2 x 7 3/4" Top 7 x 7 3/4" If stays are fitted with nuts or riveted heads Others Riveted Working pressure by rules Back 214

Material of stays Iron Area at smallest part 1.76 Area supported by each stay 21.85 sq in Working pressure by rules 247 End plates in steam space:

Material Steel Thickness 1 1/4" Pitch of stays 18 x 18 1/2" How are stays secured Double Nut Working pressure by rules 210 Material of stays Steel

at smallest part 8.29 sq in Area supported by each stay 333 sq in Working pressure by rules 258 Material of Front plates at bottom Steel

Thickness 1 3/16" Material of Lower back plate Steel Thickness 1 3/16" + 5/32" Overlay Greatest pitch of stays 7 3/4" x 12 1/2" Working pressure of plate by rules 300

Mean pitch of stays 9.56 Material of tube plates Steel Thickness: Front 1 3/16" Back 1 3/16" Mean pitch of stays 9.56

Working pressures by rules 248 Girders to Chamber tops: Material Steel Depth and

Thickness of girder at centre 11 1/2" x 12" Length as per rule 34 Distance apart 9 1/2" Number and pitch of stays in each 4-7"

Working pressure by rules 234 Steam dome: description of joint to shell None % of strength of joint \_\_\_\_\_

Material \_\_\_\_\_ 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 See Superheater Date of Approval of Plan September 19-1919 Tested by Hydraulic Pressure to 630 lbs

Date of Test January 12th 1920 Is a Safety Valve fitted to each Section of the Superheater yes  
Diameter of Safety Valve 1 1/2" Pressure to which each is adjusted 210 Is Easing Gear fitted yes

005443-005465-0051

IS A DONKEY BOILER FITTED? **No.**

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

**TURBINE GEARS**

- 1 Complete set of turbine and gear bearings.
- 1 Complete set of packing rings for turbine heads and diaphragms.
- 1 High speed pinion with leaf coupling.
- 1 Set turbine thrust collars.
- 1 Emergency governor complete.
- 1 Set pins and bushings for each size of slip couplings.
- 1 Set bolts and nuts for rotor bearings.
- 1 Set bolts and nuts for gear wheel and pinion bearings.
- 1 Set bolts and nuts for turbine and gear end joints.
- 6 Thermometers. 25 Condenser tubes and 50 ferrules.

**PROPELLER & SHAFTS**

- 1 Propeller shaft complete. 2 Propeller blades.

- 6 Coupling bolts for intermediate shafts.
- 2 Thrust shoes for main thrust block.

**AUXILIARIES, ETC.**

- 1 Set tracers and piston rings for circulating pump.
- 1/2 Set valves, guards, springs and studs for main auxiliary pumps, oil cooling and gear, service pumps.
- 1 Set valves, guards, springs and studs for feed pump lubricating oil pumps and bilge pumps.

**BOILERS**

- 2 Feed check valves.
- 2 Safety valve springs.
- 24 Plain boiler tubes.
- 1 Complete set of fire bars and liners for one boiler.
- 3 Fuel oil burners complete.
- a quantity of assorted bolts, nuts, pipe and of various sizes.
- 1 Bucket & rod for lubricating oil pump.

The foregoing is a correct description,

Skinner & Eddy Corporation  
by C. N. McCallum, Ch. Engr. Manufacturer.

Dates of Survey while building	During progress of work in shops --	1919	Oct 27. Nov. 1-12-28 Dec. 12-16-20-26-29	(9)	
		During erection on board vessel --	1919	Dec. 16-20-30	(10)
			1920	Jan. 5-12-14-15-16-20-23	
Total No. of visits			49 17.		

Is the approved plan of main boiler forwarded herewith **yes**

Dates of Examination of principal parts—	Cylinders	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	Steel	Identification Mark on Do.	Steel
Material of Tunnel shafts	Steel	Identification Marks on Do.	Steel	Identification Marks on Do.	Steel
Material of Steam Pipes	Steel	Test pressure	630		

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 "ROBIN HOOD" - "ROBIN ADAIR".

**General Remarks** (State quality of workmanship, opinions as to class, &c. The turbine and reduction gears made by the General Electric Co. Erie Pa. surveyed during construction by a Surveyor to the Board installed on board the vessel with all shafting, auxiliaries, pipes, fittings and connections under special survey in accordance with the approved plans.

The Boilers built by the Commercial Boiler works, Seattle under special survey and installed with all mountings, fittings and connections in accordance with the approved plans. The material tested as required by the rules of the Society and together with the workmen found of good quality, tested by hydraulic pressure and found sound and tight. The machinery seen tested under working conditions and found satisfactory. The machinery eligible, in my opinion, to leave the record of **L.M.C. 1.20** made in

Register Book in the case of this vessel.  
 Erie Pa. Report No. 121 forwarded herewith. Turbine case No. 21824. Gear case No. 4401.  
 Rotor marked 140152. High speed pinion 140152. Low speed pinion 140151. High speed gear 140151. Low speed gear 140151

The amount of Entry Fee ...	\$ 15 : 00	When applied for,	February 19 1920
Credit Cleveland Office	\$ 86 : 43		
Special Seattle Office	\$ 172 : 87		
Donkey Boiler Fee ...	£ :	When received,	1914/1920
Travelling Expenses (if any)	\$ 57 : 50		

James Fowler  
 Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute  
 Assigned + L.M.C. 1.20 subject  
 MACHINERY CERT. WRITTEN 2/3/20

