

# REPORT ON MACHINERY.

No. 2925

REC'D NEW YORK Oct. 9. 1918. Received at London Office

Surveying Report 19 When handed in at Local Office 19 Port of Philadelphia

Survey held at Trenton Date, First Survey Last Survey 19

Book. on the Steel Screw Steamer "Western Star" (Number of Visits)

Tons { Gross 5628.69  
Net 4111.44

R. E. Yull Built at Seattle By whom built J. F. Duthie & Co. When built 1918

Engines made at Trenton By whom made De Laval Steam Turbine Co (29651) when made 1918

Boilers made at Seattle By whom made Commercial Boiler Works when made 1918

Rated Horse Power 500 Owners U.S. Shipping Bd & Emergency Fleet Corp. Port belonging to Seattle

Net Horse Power at Full Power 3,000 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

TURBINE ENGINES, &c.—Description of Engines De Laval Double Reduction Turbine No. of Turbines 1

Center of Rotor Shaft Journals, H.P. 7 L.P. 6" Diameter of Pinion Shaft 1st Red 7 1/16" : 2nd Red 9"

Center of Journals 1st 6' 2" : 2nd 9" Distance between Centres of Bearings 1st 32 1/2" : 2nd 37 1/2" Diameter of Pitch Circle 1st Red 7.4 : 2nd 10.25"

Center of Wheel Shaft 1st 9' 2" : 2nd 14 1/2" Distance between Centres of Bearings 1st 35" : 2nd 77 1/2" Diameter of Pitch Circle of Wheel 1st 55.6 : 2nd 52.75"

Center of Face 1st 18" : 2nd 45" Diameter of Thrust Shaft under Collars Diameter of Tunnel Shaft as per rule as fitted

Screw Shafts Diameter of same as per rule as fitted Diameter of Propeller Pitch of Propeller

Blades State whether Moveable Total Surface Diameter of Rotor Drum, H.P. L.P. Astern

Revs. per Minute at Full Power, Turbine 3480 Propeller 90

## DETAILS 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.
EXPANSION 1.150	32.551	2				1.150	32.551	2
1.150	33.041	1				1.150	33.041	2
1.460	40.040	1				1.260	32.869	2
1.460	40.600	1					33.379	
1.771	41.220	1						
2.750	41.800	1						
3.150	42.600	1						
4.725	44.190	1						
6.300	45.000	1						

and size of Feed pumps

and size of Bilge pumps

and size of Bilge suction in Engine Room

In Holds, &amp;c.

of Bilge Injections sizes Connected to condenser, or to circulating pump Is a separate Donkey Suction fitted in Engine Room & size

all the bilge suction pipes fitted with roses. Are the roses in Engine room always accessible

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

they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Are the Discharge Pipes above or below the deep water line

they each fitted with a Discharge Valve always accessible on the plating of the vessel Are the Blow Off Cocks fitted with a spigot and brass covering plate

at pipes are carried through the bunkers How are they protected

all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times

the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges

the Screw Shaft Tunnel watertight Is it fitted with a watertight door worked from

## BOILERS, &c.—(Letter for record)

Is Forced Draft fitted No. and Description of Boilers

Working Pressure Tested by hydraulic pressure to Date of test No. of Certificate

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

boiler Area of each valve Pressure to which they are adjusted Are they fitted with easing gear

greatest distance between boilers or uptakes and bunkers or woodwork Mean dia. of boilers Length Material of shell plates

thickness Range of tensile strength Are the shell plates welded or flanged Descrip. of riveting: cir. seams

seams Diameter of rivet holes in long. seams Pitch of rivets Lap of plates or width of butt straps

percentages of strength of longitudinal joint rivets Working pressure of shell by rules Size of manhole in shell

plates

of compensating ring No. and Description of Furnaces in each Boiler Material Outside diameter

length of plain part top crown Thickness of plates Description of longitudinal joint No. of strengthening rings

bottom bottom

working pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Top Bottom

of stays to ditto: Sides Back Top If stays are fitted with nuts or riveted heads Working pressure by rules

material of stays Diameter at smallest part Area supported by each stay Working pressure by rules End plates in steam space

material Thickness Pitch of stays How are stays secured Working pressure by rules Material of stays

diameter at smallest part Area supported by each stay Working pressure by rules Material of Front plates at bottom

thickness Material of Lower back plate Thickness Greatest pitch of stays Working pressure of plate by rules

diameter of tubes Pitch of tubes Material of tube plates Thickness: Front Back Mean pitch of stays

pitch across wide water spaces Working pressures by rules Girders to Chamber tops: Material Depth and

thickness of girder at centre Length as per rule Distance apart Number and pitch of stays in each

working pressure by rules 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

822-096500-0228

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? \_\_\_\_\_ If so, is a report now forwarded? \_\_\_\_\_

SPARE GEAR. State the articles supplied:—

The foregoing is a correct description,

*The Naval Steam Turbine Co.*  
*Stallard & Co. B.C.*

Manufacturer.

1918  
Dates of Survey while building { During progress of work in shops -- } May 8. 16. 23. June 13. 13. July 1. 9. 22. Aug 5.  
{ During erection on board vessel --- }  
Total No. of visits \_\_\_\_\_

Is the approved plan of main boiler forwarded herewith \_\_\_\_\_

Dates of Examination of principal parts—Casings 8. 5. 18 Rotors ✓ " " which donkey " " " 23. 5. 18 Gearing 9. 7. 18

Rotor shaft 1. 7. 18 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 \_\_\_\_\_

Main boiler safety valves adjusted \_\_\_\_\_ Thickness of adjusting washers \_\_\_\_\_

Material and tensile strength of Rotor shaft 0. 14. steel 96,800 lbs Identification Mark on Do. A. T. T.

Material and tensile strength of Pinion shaft Chrome-nickel steel 110,000 lbs Identification Mark on Do. A. T. T.

Material of Wheel shaft steel Identification Mark on Do. A. T. T. 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 \_\_\_\_\_

Is an installation fitted for burning oil fuel \_\_\_\_\_

Is the flash point of the oil to be used over 150°F. \_\_\_\_\_

Have the requirements of Section 49 of the Rules been complied with \_\_\_\_\_

Is this machinery a duplicate of a previous case \_\_\_\_\_ If so, state name of vessel \_\_\_\_\_

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

The machinery has been built under Special Survey; the material and workmanship being good. It has now been forwarded to Seattle for fitting aboard Duthie & Co. hull No 16.

The amount of Entry Fee \$ 15. 00 :  
Due Seattle Special \$ 150. 00 :  
Due Philadelphia Donkey Boiler Fee \$ 75. 00 :  
Travelling Expenses (if any) \$ 5. 00 :  
When applied for, 19. \_\_\_\_\_  
When received, 19. \_\_\_\_\_

A. T. Thomas

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute New York OCT 13 1918

Assigned See Sea. Rpt 7003



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