

## REPORT ON MACHINERY.

No. 2475.

REC'D NEW YORK

April 30, 1917

Received at London Office

THU 17 MAY 1917

Date of writing Report Apr. 23rd, 17 When handed in at Local Office 19 Port of SAN FRANCISCO,  
 No. in Survey held at San Francisco, Date, First Survey Aug. 3/16 Last Survey Apr. 21st 1917  
 Reg. Book. - on the s/s "BESSA", Union Iron Works Co's Hull No. 139, (Number of Voids forty (40)) Gross Tons 6249  
 Master D. Arnesen Built at Alameda, Cal. By whom built Union Iron Works Co. When built 1917  
 Engines made at San Francisco, By whom made Union Iron Works Co. when made 1917  
 Boilers made at San Francisco, By whom made Union Iron Works Co. when made 1917  
 Registered Horse Power - Owners Norwegian Africa Australian Line Port belonging to Tonsberg.  
 Nom. Horse Power as per Section 28 600 Is Refrigerating Machinery fitted for cargo purposes no. Is Electric Light fitted yes.

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders three No. of Cranks 3  
 Dia. of Cylinders 27", 47", 78" Length of Stroke 48" Revs. per minute 78 Dia. of Screw shaft as per rule 15.36 Material of steel  
 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  
 in the 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  
 between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive - If two  
 liners are fitted, is the shaft lapped or protected between the liners - Length of stern bush 5'6"  
 Dia. of Tunnel shaft as per rule 14.47 Dia. of Crank shaft journals as per rule 15.1937 Dia. of Crank pin 15 1/2 Size of Crank webs 54x30 Dia. of thrust shaft under  
 collars 15 1/2 Dia. of screw 18'0" Pitch of Screw 17'11" No. of Blades 4 State whether moveable yes Total surface 102.4 sq. ft.  
 No. of Feed pumps 2 Diameter of ditto 11"x8"x8" Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 24" Can one be overhauled while the other is at work yes  
 No. of Donkey Engines 3 Sizes of Pumps 1-16x10x14 1-8x8x12 No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room & Stokehold: 4-3 1/2", 2-2 1/2" In Holds, &c. Fore peak, 1-3 1/2". No. 1 hold 2-3 1/2"  
No. 2 hold, 2-3 1/2". Deep Tank 2-4". No. 3 Hold, 4-3 1/2". No. 4 Hold, 2-3 1/2". After Peak tank, 1-3 1/2".  
 No. of Bilge Injections 1 sizes 10" Connected to condenser or to circulating pump yes 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 the sluices on Engine room bulkheads always accessible -  
 Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks valves  
 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 - How are they protected -  
 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 deck.

BOILERS, &c.—(Letter for record (S) Manufacturers of Steel Worth Bros., Philadelphia.  
 Total Heating Surface of Boilers 8265 sq. ft. Same as 5/5 Talabot No. and Description of Boilers 3 S.B. 3-Marine multitubular.  
 Working Pressure 220 Tested by hydraulic pressure to 330 Date of test 55 No. of Certificate -  
 Can each boiler be worked separately yes Area of fire grate in each boiler 165 sq. ft. No. and Description of Safety Valves to  
 each boiler 2-spring loaded Area of each valve 9.6 sq" Pressure to which they are adjusted 220 Are they fitted with easing gear yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork - Mean dia. of boilers 15'1 1/4" Length 11'9" Material of shell plates steel  
 Thickness 1 1/16" Range of tensile strength 60000-71680 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams d.r.l.  
 g. seams t.r.d.b.s. Diameter of rivet holes in long. seams 1 9/16" Pitch of rivets 10" Lap of plates or width of butt straps 22 3/8"  
 Percentages of strength of longitudinal joint 84.5 Working pressure of shell by rules 255.5 Size of manhole in shell 12x16  
 Type of compensating ring flanged No. and Description of Furnaces in each boiler 3-Morrison Material steel Outside diameter 48.0625"  
 Length of plain part top - bottom - Thickness of plates crown 21/32" bottom - Description of longitudinal joint weld No. of strengthening rings -  
 Working pressure of furnace by the rules 237 Combustion chamber plates: Material steel Thickness: Sides 1 1/16" Back 1 1/16" Top 1 1/16" Bottom 1 5/16"  
 Thickness of stays to ditto: Sides 7/8x6 3/4" Back 7 1/16x7 3/4" Top 8x6 3/4" If stays are fitted with nut or riveted heads yes Working pressure by rules 220  
 Material of stays steel Area at smallest part 1.755 Area supported by each stay 54.0sq" Working pressure by rules 288 End plates in steam space:  
 Material steel Thickness 1 1/4" Pitch of stays 17 1/8x17 5/8" How are stays secured d. nuts. Working pressure by rules 231 Material of stays steel  
 Area at smallest part 8.29 Area supported by each stay 301.8sq" Working pressure by rules 285 Material of Front plates at bottom steel  
 Thickness 1 5/16" Material of Lower back plate steel Thickness 1 3/16" Greatest pitch of stays 15" Working pressure of plate by rules 252  
 Diameter of tubes 3" Pitch of tubes 4 1/8" Material of tube plates steel Thickness: Front 15/16" Back 7/8" Mean pitch of stays 9.8"  
 Distance across wide water spaces 13" Working pressures by rules 285 Girders to Chamber tops: Material steel Depth and  
 thickness of girder at centre 12x1 1/2" Length as per rule 34" Distance apart 8" Number and pitch of stays in each 4-6 3/4"  
 Working pressure by rules 345 Steam dome: description of joint to shell - % of strength of joint -  
 Material - Thickness of shell plates - Material - Description of longitudinal joint - Diam. of rivet holes -  
 Material of rivets - Working pressure of shell by rules - Crown plates - Thickness - How stayed -

SUPERHEATER. Type Union I. Wks. Date of Approval of Plan Type approved 1915 Tested by Hydraulic Pressure to 660 lbs.

Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler yes  
 Pressure to which each is adjusted 270 lbs. Is Easing Gear fitted no.



IS A DONKEY BOILER FITTED? no.

If so, is a report now forwarded?

pt. 13.

SPARE GEAR. State the articles supplied:— 1-tail shaft, complete with propeller nut. 1-complete set of piston rings and springs for each cylinder. 2-connecting rod crank end bolts and nuts. 2-connecting rod crossheads, bolts and nuts. 1-set main coupling bolts. 1-set feed and bilge pumps valves. 1-set air pump valves. 1-set crank pin brasses. 1-set crosshead brasses. 1-set journal bolts. 1-link block. 50-condenser tubes. 1-propeller complete (hub & blades. 1-valve stem.

The foregoing is a correct description,

UNION IRON WORKS COMPANY,

By *See J. Ames*  
Engineer-in-Chief.

Manufacturer.

Dates of Survey while building { During progress of work in shops -- Aug. 3, 14, 15, 21, 28 Sept. 2, 6, 14, 20, 27, 29. Oct. 4, 9, 12, 19, Nov. 3, 20, 27 Dec. 4, 7, 20, 22, 28 Jan. 13, 18, 19.  
During erection on board vessel --- Jan 31, Feb. 3, 5, 15, 16, 20, 26 March 1, 3, 4, 11, 13/1917 April 21, 1917.  
Total No. of visits ~~thirty-nine~~ forty (40) Is the approved plan of main boiler forwarded herewith yes

Dates of Examination of principal parts—Cylinders Aug. 21 Slides Dec. 4 Covers Oct 9 Pistons Oct 9 Rods Dec 4

Connecting rods Oct 9 Crank shaft Sept 29 Thrust shaft Feb 5 Tunnel shafts Feb 5 Screw shaft Dec 20 Propeller Feb 18

Stern tube Dec 15 Steam pipes tested March 3 Engine and boiler seatings Jan 19 Engines holding down bolts March 5

Completion of pumping arrangements March 8 Boilers fixed Feb 20 Engines tried under steam March 11

Completion of fitting sea connections Feb. 3 Stern tube Feb. 3 Screw shaft and propeller Feb. 3

Main boiler safety valves adjusted March 13 Thickness of adjusting washers -

Material of Crank shaft steel Identification Mark on Do. :X: Material of Thrust shaft steel Identification Mark on Do. :X:

Material of Tunnel shafts steel Identification Marks on Do. :O: Material of Screw shafts steel Identification Marks on Do. :X:

Material of Steam Pipes steel Test pressure 660 lbs.

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 s/s "TALABOT" - S.Fo. Rpt. No. 2442

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

The Machinery and Boilers of this vessel were constructed under special survey, of materials tested to Rule requirements. Workmanship found sound throughout. On completion the Machinery was thoroughly tested under all working conditions and found satisfactory. In the opinion of the undersigned the Machinery is eligible to be classed in the Register Book with notation of

\*LMC 4-17 Fitted for Oil Fuel 4-17 Flash Point above 150°F.

:X: Marks: LLOYD'S 1878 JD LLOYD'S No. 54 RB 9/16 & 12/16 ;O: LLOYD'S 2038 JD LLOYD'S 2038 WW :X: LLOYD'S No. 54 RB 12/16 LLOYD'S 2083 JD (Spa)

It is submitted that this vessel is eligible for THE RECORD + LMC 4.17 F.D.

Fitted for oil fuel 4.17. F.P. above 150°F.

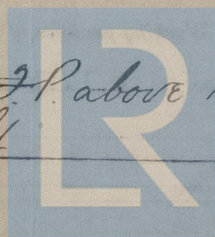
The amount of Entry Fee ... \$ 15.00 : When applied for, Apr. 23 1917  
Special ... £ 250.00 :  
Donkey Boiler Fee ... £ :  
Sunday fee, ..... 10.00 :  
Travelling Expenses (if any) £ :  
When received, 23/5/17

Committee's Minute New York MAY 3 1917

Assigned

+ Lmc 4.17 Fitted for oil fuel 4.17 F.P. above 150°F. Elec. Light

MACHINERY CERTIFICATE  
WRITTEN 17-5-17



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Foundation