

REPORT ON MACHINERY.

No. 76258

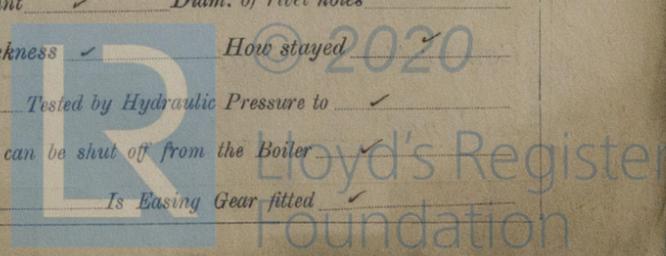
Received at London Office SAT. 16 DEC. 1922

Date of writing Report 19 When handed in at Local Office 7/12/23 Port of NEWCASTLE-ON-TYNE
 No. in Survey held at Newcastle - n - 2/pe Date, First Survey 15 Aug/1921 Last Survey 6 Decr 1922
 Reg. Book. 23/2 on the STEEL S.C. SAN MANUEL (Number of Visits 89)
 Tons } Gross 5989
 } Net 3716
 Master Built at Newcastle By whom built Palmers S.B. Co. Ltd. When built 1922
 Engines made at Newcastle By whom made Palmers Co. Ltd. when made 1922
 Boilers made at Newcastle By whom made Palmers Co. Ltd. when made 1922
 Registered Horse Power Owners Eagle Oil Transport Co. Ltd. Port belonging to London.
 Nom. Horse Power as per Section 28 549 ✓ Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines *Inverted Triple Expansion* No. of Cylinders 3 ✓ No. of Cranks 3 ✓
 Dia. of Cylinders 37 1/2" - 46" - 77" Length of Stroke 48" Revs. per minute 74 ✓ Dia. of Screw shaft as per rule 15.03" Material of screw shaft 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
 Is the propeller boss Yes ✓ If the liner is in more than one length are the joints burned ✓ 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'-3" ✓
 Dia. of Tunnel shaft as per rule 13.588" Dia. of Crank shaft journals as per rule 14.268" ✓ Dia. of Crank pin 14 7/8" ✓ Size of Crank webs 28 1/2" x 10 1/4" Dia. of thrust shaft under
 collars 15 3/4" Dia. of screw 18'-0" Pitch of Screw 17'-6" ✓ No. of Blades 4 State whether moveable Yes Total surface 96 ft ✓
 No. of Feed pumps Diameter of ditto Stroke Can one be overhauled while the other is at work Yes ✓
 To. 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 GEN. SERVICE 8x6x8" BALLAST 10x12x17" No. and size of Suctions connected to both Bilge and Donkey pumps
 in Engine Room S.H. 4 - 3 1/2" ✓ In Holds, &c. NONE
 No. of Bilge Injections 1 sizes 14" ✓ Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size Yes - 6" ✓
 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 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 none 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 NONE Is it fitted with a watertight door ✓ worked from ✓

BOILERS, &c.—(Letter for record 5) ✓ Manufacturers of Steel J. Spencer & Sons Ltd.
 Total Heating Surface of Boilers 7896 ft ✓ Is Forced Draft fitted Yes ✓ No. and Description of Boilers 3 S.E. CYLINDRICAL MULTITUBULAR ✓
 Working Pressure 180 LBS. □ Tested by hydraulic pressure to 320 LBS. □ Date of test 27.7.22 No. of Certificate 9674
 22.8.22 9677
 22.9.22 9684
 Can each boiler be worked separately Yes ✓ Area of fire grate in each boiler OIL FUEL No. and Description of Safety Valves to
 each boiler TWO- SPRING LOADED Area of each valve 11.0450" Pressure to which they are adjusted Are they fitted with easing gear Yes ✓
 Smallest distance between boilers or uptakes and bunkers or woodwork 1'-6" ✓ INTER. Mean dia. of boilers 15'-6 9/16" ✓ Length 12'-0" ✓ Material of shell plates STEEL
 Thickness 17/32" Range of tensile strength 30/34 ft ✓ Are the shell plates welded or flanged No ✓ Descrip. of riveting: cir. seams D.R. LAP
 Long. seams T.R. D.B.S. ✓ Diameter of rivet holes in long. seams 1 5/16" Pitch of rivets 8 5/16" Lap of plates or width of butt straps 19 1/2" ✓
 Percentages of strength of longitudinal joint rivets 89.6 Working pressure of shell by rules 185 LBS. Size of manhole in shell 16" x 12" ✓
 plate 85.3
 Size of compensating ring 35 3/8" x 33 1/2" ✓ No. and Description of Furnaces in each boiler 3 DEIGHTON Material STEEL Outside diameter 48 3/8" ✓
 Length of plain part top 5/8" Thickness of plates crown 5/8" Description of longitudinal joint WELD ✓ No. of strengthening rings ✓
 bottom 5/8" Working pressure of furnace by the rules 202 LBS. Combustion chamber plates: Material STEEL Thickness: Sides 5/8" Back 5/8" Top 5/8" Bottom 27/32" ✓
 Pitch of stays to ditto: Sides 8 7/8" x 8 3/8" Back 8 7/8" x 8 1/2" Top 8 1/4" x 8 1/2" If stays are fitted with nuts or riveted heads NUTS ✓ Working pressure by rules 184 LBS.
 Material of stays STEEL Area at smallest part 2.030" Area supported by each stay 78.760" Working pressure by rules 230 LBS. End plates in steam space:
 Material STEEL Thickness 17/16" Pitch of stays 23 1/2" x 22 1/2" How are stays secured D.N. ✓ Working pressure by rules 184 LBS. Material of stays STEEL
 Area at smallest part 9.820" Area supported by each stay 528.750" Working pressure by rules 208.9 LBS. Material of Front plates at bottom STEEL
 Thickness 1" Material of Lower back plate STEEL Thickness 7/8" Greatest pitch of stays 13 3/4" x 8 5/8" Working pressure of plate by rules 238 LBS.
 Diameter of tubes 2 1/2" Pitch of tubes 3 3/4" x 3 1/16" Material of tube plates STEEL Thickness: Front 1" Back 13/16" Mean pitch of stays 9 3/32" ✓
 Pitch across wide water spaces 13 3/4" Working pressures by rules 205 LBS. Girders to Chamber tops: Material STEEL Depth and
 thickness of girder at centre 8 7/8" x 1 5/8" Length as per rule 35.5" Distance apart 8 1/4" Number and pitch of stays in each 3 - 8 3/8" ✓
 Working pressure by rules 191 LBS. Steam dome: description of joint to shell NONE % 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 NONE 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 ✓

W491-0057



IS A DONKEY BOILER FITTED? NONE If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— SCREW SHAFT - 2 C. PROPELLER BLADES - PAIR BOTTOM END BRASSES - 2 TOP & 2 BOTTOM END BOLTS - 2 MAIN BEARING BOLTS - SET OF COUPLING BOLTS - 12 STUDS & NUTS FOR JUNK RINGS - SLIDE VALVE SPINDLE - ECCENTRIC STRAP COMPLETE - 2 ESCAPE VALVE SPRINGS - 50 CONDENSER TUBES & 100 FERRULES - AIR PUMP ROD - SET AIR PUMP VALVES - SET VALVES & SEATS FOR ONE HOTWELL AND ONE BILGE PUMP ON MAIN ENGINE - 1 STAY & 20 PLAIN BOILER TUBES - VALVE LIDS FOR MAIN & AUX. FEED CHECK VALVES - 2 SAFETY VALVE SPRINGS FOR BOILERS - SET VALVES & SEATS FOR WEIR'S FEED PUMP ALSO SET OF BUCKET RINGS - 4 VALVES & SEATS FOR EACH OF AUXILIARY FEED, GENERAL SERVICE, AND BALLAST PUMPS ASSORTED IRON, BOLTS & NUTS.

The foregoing is a correct description,
 For *Palmer Shipbuilding & Iron Co., Ltd.* Manufacturer.
D. Kemp

General Manager, Engine Works 1922
 Dates of Survey while building: During progress of work in shops -- 1922 Aug 15, 31, Sep 12, Nov 15, 16, 30, Dec 2, 12, 14, 16, 19, Jan 5, 20, 24, Feb 3, 6, 8, 10, 21, 23, Mar 1, 3, 4, 16, 20, 21, 22, 27, 28, 29, Apr 4, 5, 6, 7, 11, 20, 24, 25, 27, May 1, 4, 10, 11, 12, 26, 31, June 2, 6, July 3, 10, 18, 19, 27, Aug 1, 3, 11, 15, 22, 22, Sep 1, 11, 17, 22, 25, 28, Oct 2, 4, 6, 7, 11, 13, 16, 15, 20, 24, 25, 27, Nov 1, 3, 6, 9, 13, 15, 17, 22, 24, Dec 6.
 Total No. of visits **89**

Is the approved plan of main boiler forwarded herewith **YES**
 " " " donkey " " " **YES**

Dates of Examination of principal parts—Cylinders 15.8.22 Slides 21.3.22 Covers 10.5.22 Pistons 6.6.22 Rods 10.5.22
 Connecting rods 10.5.22 Crank shaft 18.7.22 Thrust shaft 1.9.22 Tunnel shafts Screw shaft 1.9.22 Propeller 2.4.22
 Stern tube 27.4.22 Steam pipes tested 17.11.22 Engine and boiler seatings 15.8.22 Engines holding down bolts 9.10.22
 Completion of pumping arrangements 24.11.22 Boilers fixed 9.11.22 Engines tried under steam 22.11.22
 Completion of fitting sea connections 19.9.22 Stern tube 15.8.22 Screw shaft and propeller 19.9.22
 Main boiler safety valves adjusted 22.11.22 Thickness of adjusting washers FORW. BLR. P 1/2" S 3/4" PORT BLR. P 1/2" S 3/4" STAR BLR. P 3/8" S 3/8"

Material of Crank shafts S.M. STEEL Identification Mark on Do. 6165N Material of Thrust shaft S.M. STEEL Identification Mark on Do. 6165N
 Material of Tunnel shafts Identification Marks on Do. Material of Screw shafts S.M. STEEL Identification Marks on Do. 6165N
 Material of Steam Pipes SOLID DRAWN STEEL Test pressure 600 LBS Q"
 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 **SAN MACEDONIO No 927**

General Remarks (State quality of workmanship, opinions as to class, &c.)
This machinery of this vessel has been constructed under Special Survey. The workmanship and materials are sound and good. The Engines and Boilers have been efficiently installed. The Boilers' safety valves were adjusted under steam. The main and Auxiliary Engines have been tried out under steam with satisfactory results. In my opinion the machinery of this vessel is eligible for notation in the Society's Register.
 Book **L.M.C. 12.22 C.L. BOILERS' PRESSURE 180 LBS Q" F.D. FITTED FOR OIL FUEL 12.22 F.P. ABOVE 150°**

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 12.22, F.D. C.L. "Fitted for Oil Fuel" 12.22 F.P. above 150°F.

A.H.D.
 19/12/22
A.P.S.

The amount of Entry Fee ... £ 6 : — :
 Special ... £ 102 : 9 :
 Donkey Boiler Fee ... £ : :
 Travelling Expenses (if any) £ : :
 When applied for, 14/12/22
 When received, 5.1.1923

R. Lee Ames
 Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute TUE 19 DEC 1922
 Assigned **+ L.M.C. 12.22 F.D. C.L. Fitted for oil fuel 12.22 F.P. above 150°F**



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