

REPORT ON MACHINERY.

No. 4087

WED. FEB. 2 1921

REC'D NEW YORK JAN 15 1921

Date of writing Report Jan 8 1921 When handed in at Local Office Jan 12 1921 Port of Philadelphia

No. in Survey held at Chester Date, First Survey 10-6-20 Last Survey 3rd January 1921

Reg. Book. on the Tug S.S. "SUNOCO" (Number of Visits 33)

Master E. THIRIAR Built at Chester By whom built Sun Shipbuilding Co Tons Gross 6998
Net 5025 When built 1921

Engines made at Chester By whom made Sun Shipbuilding Co when made 1921

Boilers made at Chester By whom made Sun Shipbuilding Co when made 1921

Registered Horse Power _____ Owners Societe d'Armenement d'Industrie et de Commerce Port belonging to Antwerp

Nom. Horse Power as per Section 28 612 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

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

Dia. of Cylinders 27-45 1/2-76 Length of Stroke 51 Revs. per minute 72 Dia. of Screw shaft as per rule 15.45 Material of Steel
as fitted 18.75 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

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 Yes If two

liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 5'-4"

Dia. of Tunnel shaft as per rule 13.96 Dia. of Crank shaft journals as per rule 14.66 Dia. of Crank pin 15.5 Size of Crank webs 5/4 x 56 Dia. of thrust shaft under

collars 15 Dia. of screw 15 Pitch of Screw 16.6 No. of Blades 4 State whether moveable Yes Total surface 98 sq

No. of Feed pumps 2 Diameter of ditto over Stroke _____ Can one be overhauled while the other is at work Yes

No. of Bilge pumps over Diameter of ditto _____ Stroke _____ Can one be overhauled while the other is at work Yes

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

In Engine Room 50 3/2 125 In Holds, &c. Inchhold 20 3/2 one pump room 12 2/2

Offendams 20 3/2 Cargo pump room 20 2/2

No. of Bilge Injections 1 sizes 10 Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size Yes 3/2

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 Yes

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 Yes

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 _____

BOILERS, &c.—(Letter for record Yes) Manufacturers of Steel Lukens Steel & Iron Co

Total Heating Surface of Boilers 9195 sq Is Forced Draft fitted Yes No. and Description of Boilers 3 S. E. Scotch

Working Pressure 190 Tested by hydraulic pressure to 285 Date of test 14-10-20 No. of Certificate 490

Can each boiler be worked separately Yes Area of fire grate in each boiler 69 sq No. and Description of Safety Valves to

each boiler 3/2 Lever Area of each valve 9.62 sq Pressure to which they are adjusted 190 Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 20 Mean dia. of boilers 15.11 7/32 Length 12.0 3/4 Material of shell plates Steel

Thickness 1 7/32 Range of tensile strength 60000 to 70000 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams DRL

long. seams TRDBS Diameter of rivet holes in long. seams 1 9/16 Pitch of rivets 9 5/16 Lap of plates or width of butt straps 22 3/4

Per centages of strength of longitudinal joint rivets 93.4 Working pressure of shell by rules 208 Size of manhole in shell 12 x 16

Size of compensating ring Flanged No. and Description of Furnaces in each boiler 3 Morrison Material Steel Outside diameter 52 1/4

Length of plain part top Thickness of plates bottom 5/8 Description of longitudinal joint Weld No. of strengthening rings Yes

Working pressure of furnace by the rules 192.7 Combustion chamber plates: Material Steel Thickness: Sides 2 1/32 Back 3/4 Top 2 1/32 Bottom 1

Pitch of stays to ditto: Sides 8 1/2 x 6 1/2 Back 8 3/4 x 5 7/8 Top 8 3/4 x 5 1/2 If stays are fitted with nuts or riveted heads Both Working pressure by rules 190.9

Material of stays W1 Area at smallest part 1.999 Area supported by each stay 75.465 Working pressure by rules 195 End plates in steam space:

Material Steel Thickness 1 1/8 Pitch of stays 16 7/8 x 16 How are stays secured D nuts Working pressure by rules 210 Material of stays Steel

Area at smallest part 6.2126 Area supported by each stay 270 sq Working pressure by rules 239 Material of Front plates at bottom Steel

Thickness 1 Material of Lower back plate Steel Thickness 1 1/16 Greatest pitch of stays 13 Working pressure of plate by rules 245

Diameter of tubes 2 1/2 Pitch of tubes 3 3/4 x 3 1/2 Material of tube plates Steel Thickness: Front 1 Back 3/4 Mean pitch of stays 9

Pitch across wide water spaces 13 Working pressures by rules 212 Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 10 1/2 x 2 Length as per rule 3.4 Distance apart 8 3/8 Number and pitch of stays in each 4 @ 8 1/2

Working pressure by rules 247 Steam dome: description of joint to shell _____ % of strength of joint _____

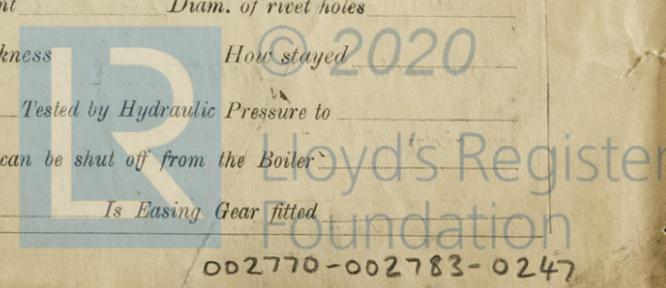
Diameter _____ Thickness of shell plates _____ Material _____ Description of longitudinal joint _____ Diam. of rivet holes _____

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 _____



002770-002783-0247

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— 2 Connecting Rod top & bottom end bolts & nuts
 2 Main bearing bolts; 1 Propeller shaft; Section of Crank Shaft; 2 Propeller blades
 1 Eccentric Rod; 1 set of Piston springs for each piston; 1 set of top and bottom
 end braces; 1 set of valves for feed & bilge pumps; 1 bucket and rod for circular
 pumps, a quantity of assorted bolts and nuts of various sizes; plates of iron
 & mild steel of various sizes

The foregoing is a correct description,

Robert. A. H. G.

Manufacturer.

Dates of Survey while building: During progress of work in shops -- 1920. June 10, 15, 24, 29, July 20, Aug 23-26, Sept. 2, 7, 17, 24, Oct. 1, 4, 8, 12, 14, 22, 26, 28, Nov. 5, 17, 23, 29, Dec 6, 7, 10, 14, 21, 23, 28, 29, 1921 Jan 3.
 During erection on board vessel ---
 Total No. of visits 33

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

" " " donkey " " " "

Dates of Examination of principal parts—Cylinders 2-9-20 Slides 12-10-20 Covers 2-9-20 Pistons 4-10-20 Rods 4-10-20
 Connecting rods 4-10-20 Crank shaft 26-8-20 Thrust shaft 28-10-20 Tunnel shafts 28-10-20 Screw shaft 22-10-20 Propeller 23-11-
 Stern tube 22-10-20 Steam pipes tested 10-12-20 Engine and boiler seatings 4-12-20 Engines holding down bolts 14-12-20
 Completion of pumping arrangements 29-12-20 Boilers fixed 6-12-20 Engines tried under steam 29-12-20
 Completion of fitting sea connections 4-12-20 Stern tube 29-11-20 Screw shaft and propeller 29-11-20
 Main boiler safety valves adjusted 23-12-20 Thickness of adjusting washers *Lock nuts*
 Material of Crank shaft *Steel* Identification Mark on Do. *F.W.T.* Material of Thrust shaft *Steel* Identification Mark on Do. *F.W.T.*
 Material of Tunnel shafts *Steel* Identification Marks on Do. *F.W.T.* Material of Screw shafts *Steel* Identification Marks on Do. *R.S.*
 Material of Steam Pipes *Steel* Test pressure *650 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 *Yes* If so, state name of vessel *SS "AGWIMARS"*

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

Pumps: 2 Padojets: 2 Feed pumps 12x8x24: Donkey 14x10 1/4 x 12: Sanitary 6x5 3/4 x 6
 Condensate 7 1/2 x 8 x 16. Aqua Condensate 10x14x14x12: Bilge 6x5 3/4 x 6 Ind bilge 6x5 3/4 x 6: 2 Fuel oil
 Service 6x4x6: Cargo bilge 6x5 3/4 x 6: Transfer 6x5 3/4 x 6: 2 Cargo pumps 16x14x18: Ind pump. 16x6x1
 Fresh water 5 1/4 x 4 3/4 x 5

The Machinery of this Vessel has been built under Special Survey and in accordance with the approved plans. The workmanship and materials all good
 The Machinery has been tried under steam and proved satisfactory
 It is submitted that the vessel be eligible for a record of +LMC 1-21 and to have notation fitted for oil fuel 1-21 Flash point above 150°F in the Register Book

It is submitted that this vessel is eligible for THE RECORD. +LMC 1.21. F.D.

FITTED FOR OIL FUEL 1.21. FP ABOVE 150°F.

Recll 8/2/21

J. Adamson

Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... £ 15.00 :
 Special ... £ 253.00 :
 Donkey Boiler Fee ... £ :
 Travelling Expenses (if any) £ 20.00 :

When applied for,

19

When received,

2/17/21

Committee's Minute New York JAN 18 1921

Assigned

+ L.M.C. 1.21

MACHINERY CERT. WRITTEN 2.2.21



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