

Rpt. 4.

REPORT ON MACHINERY.

No. 3045

MON 30 DEC 1918

Received at London Office

Date of writing Report 2nd Dec 1918 When handed in at Local Office 2nd Dec 1918 Port of Philadelphia
No. in Survey held at Camden N. J. Date, First Survey 23rd Nov 1916 Last Survey 29th Nov 1918
Reg. Book. on the S. S. E. L. Doherty Ship (Number of Visits 6.5)

Master Built at Camden By whom built New York P. B. Corp (No 190) When built 1918
Engines made at Camden By whom made New York P. B. Corp. when made 1918
Boilers made at Do By whom made Do when made 1918

Registered Horse Power Owners Emergency Steel Corporation Port belonging to Camden
Nom. Horse Power as per Section 28 568 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

NGINES, &c.—Description of Engines Quadruple Expansion No. of Cylinders 4 No. of Cranks 4
Dia. of Cylinders 24, 35, 51, 75 Length of Stroke 51 Revs. per minute 80 Dia. of Screw shaft as per rule 15.69 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 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 13.48 Dia. of Crank shaft journals as per rule 14.15 Dia. of Crank pin 15 Size of Crank webs 10 1/2 Dia. of thrust shaft under
collars 14 3/4 Dia. of screw 19.6 Pitch of Screw 14.6 No. of Blades 4 State whether moveable Yes Total surface 113.5 sq ft

No. of Feed pumps 2 Diameter of ditto 12x8 Stroke 24 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 8 Sizes of Pumps see other side No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room & Blr Rm: 6-3 1/2, 1-3 1/2, 2-2 1/2 In Holds, &c. 2-3 1/2, 2-2 1/2, 3-2, 1-2
1-2 after pump room ejector & 1-6, 2-4 in fore & aft fuel tank: 2-4 in fore & aft after ejectors
No. of Bilge Injections 1 sizes 11 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 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 both
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 None Is it fitted with a watertight door Yes worked from Yes

BOILERS, &c.—(Letter for record (7)) Manufacturers of Steel Lukens & P. Co.
Total Heating Surface of Boilers 7804 sq ft Is Forced Draft fitted Yes No. and Description of Boilers 3 Single Ended
Working Pressure 220 lbs Tested by hydraulic pressure to 330 lbs Date of test 12.4.18 No. of Certificate 185

Can each boiler be worked separately Yes Area of fire grate in each boiler 59 sq ft No. and Description of Safety Valves to
each boiler Double spring loaded Area of each valve 9.62 sq in Pressure to which they are adjusted 220 lbs Are they fitted with easing gear Yes
Smallest distance between boilers or uptakes and bunkers or woodwork 2'-9" Mean dia. of boilers 4'-11 1/2" Length 11'-6" Material of shell plates steel

Thickness 19/32 Range of tensile strength 28/32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D. R.
Long. seams T. R. D. B. S. Diameter of rivet holes in long. seams 1 1/16 Pitch of rivets 10 1/4 Lap of plates or width of butt straps 24 3/4
Percentages of strength of longitudinal joint 94 Working pressure of shell by rules 238 Size of manhole in shell 16" x 12"

Size of compensating ring 3'-0 1/2" x 2'-8 1/2" x 1'-12" No. and Description of Furnaces in each boiler 3 corrugated Material steel Outside diameter 3'-11 1/2"
Length of plain part top 32" Thickness of plates bottom 32" Description of longitudinal joint weld No. of strengthening rings 1
Working pressure of furnace by the rules 226 Combustion chamber plates: Material steel Thickness: Sides 5/8 Back 5/8 Top 5/8 Bottom 1"

Pitch of stays to ditto: Sides 7 1/4" x 7 1/8" Back 7" x 7" Top 7 3/8" x 7 1/4" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 243
Material of stays iron Area at smallest part 1.99 sq in Area supported by each stay 55.3 Working pressure by rules 270 End plates in steam space:
Material steel Thickness 1 1/16 Pitch of stays 16 1/2" x 15 1/2" How are stays secured D. Nuts Working pressure by rules 246 Material of stays steel

Area at smallest part 6.49 sq in Area supported by each stay 255.7 Working pressure by rules 263 Material of Front plates at bottom steel
Thickness 1 1/16 Material of Lower back plate steel Thickness 1 1/32 Greatest pitch of stays 14 1/4" x 7" Working pressure of plate by rules 220
Diameter of tubes 2 1/2" Pitch of tubes 3 5/8" x 3 1/2" Material of tube plates steel Thickness: Front 1 1/16 Back 1 3/16 Mean pitch of stays 8 7/8"

Pitch across wide water spaces 12 3/4" Working pressures by rules 248 Girders to Chamber tops: Material steel Depth and
Thickness of girder at centre 9" x 2 @ 1" Length as per rule 2'-11" Distance apart 7 3/8" x 7 1/4" Number and pitch of stays in each 4 @ 7 1/4"
Working pressure by rules 268 Steam dome: description of joint to shell % of strength of joint

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
Tested by Hydraulic Pressure to

SUPERHEATER. Type Date of Approval of Plan Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler
Is Easing Gear fitted Pressure to which each is adjusted

Water Material of stays iron Area at smallest part 1.99 sq in Area supported by each stay 55.3 Working pressure by rules 270 End plates in steam space:
Material steel Thickness 1 1/16 Pitch of stays 16 1/2" x 15 1/2" How are stays secured D. Nuts Working pressure by rules 246 Material of stays steel

Area at smallest part 6.49 sq in Area supported by each stay 255.7 Working pressure by rules 263 Material of Front plates at bottom steel
Thickness 1 1/16 Material of Lower back plate steel Thickness 1 1/32 Greatest pitch of stays 14 1/4" x 7" Working pressure of plate by rules 220
Diameter of tubes 2 1/2" Pitch of tubes 3 5/8" x 3 1/2" Material of tube plates steel Thickness: Front 1 1/16 Back 1 3/16 Mean pitch of stays 8 7/8"

Pitch across wide water spaces 12 3/4" Working pressures by rules 248 Girders to Chamber tops: Material steel Depth and
Thickness of girder at centre 9" x 2 @ 1" Length as per rule 2'-11" Distance apart 7 3/8" x 7 1/4" Number and pitch of stays in each 4 @ 7 1/4"
Working pressure by rules 268 Steam dome: description of joint to shell % of strength of joint

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
Tested by Hydraulic Pressure to

SUPERHEATER. Type Date of Approval of Plan Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler
Is Easing Gear fitted Pressure to which each is adjusted

Water Material of stays iron Area at smallest part 1.99 sq in Area supported by each stay 55.3 Working pressure by rules 270 End plates in steam space:
Material steel Thickness 1 1/16 Pitch of stays 16 1/2" x 15 1/2" How are stays secured D. Nuts Working pressure by rules 246 Material of stays steel

Area at smallest part 6.49 sq in Area supported by each stay 255.7 Working pressure by rules 263 Material of Front plates at bottom steel
Thickness 1 1/16 Material of Lower back plate steel Thickness 1 1/32 Greatest pitch of stays 14 1/4" x 7" Working pressure of plate by rules 220
Diameter of tubes 2 1/2" Pitch of tubes 3 5/8" x 3 1/2" Material of tube plates steel Thickness: Front 1 1/16 Back 1 3/16 Mean pitch of stays 8 7/8"

Pitch across wide water spaces 12 3/4" Working pressures by rules 248 Girders to Chamber tops: Material steel Depth and
Thickness of girder at centre 9" x 2 @ 1" Length as per rule 2'-11" Distance apart 7 3/8" x 7 1/4" Number and pitch of stays in each 4 @ 7 1/4"
Working pressure by rules 268 Steam dome: description of joint to shell % of strength of joint

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
Tested by Hydraulic Pressure to

SUPERHEATER. Type Date of Approval of Plan Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler
Is Easing Gear fitted Pressure to which each is adjusted

Water Material of stays iron Area at smallest part 1.99 sq in Area supported by each stay 55.3 Working pressure by rules 270 End plates in steam space:
Material steel Thickness 1 1/16 Pitch of stays 16 1/2" x 15 1/2" How are stays secured D. Nuts Working pressure by rules 246 Material of stays steel

Area at smallest part 6.49 sq in Area supported by each stay 255.7 Working pressure by rules 263 Material of Front plates at bottom steel
Thickness 1 1/16 Material of Lower back plate steel Thickness 1 1/32 Greatest pitch of stays 14 1/4" x 7" Working pressure of plate by rules 220
Diameter of tubes 2 1/2" Pitch of tubes 3 5/8" x 3 1/2" Material of tube plates steel Thickness: Front 1 1/16 Back 1 3/16 Mean pitch of stays 8 7/8"

Pitch across wide water spaces 12 3/4" Working pressures by rules 248 Girders to Chamber tops: Material steel Depth and
Thickness of girder at centre 9" x 2 @ 1" Length as per rule 2'-11" Distance apart 7 3/8" x 7 1/4" Number and pitch of stays in each 4 @ 7 1/4"
Working pressure by rules 268 Steam dome: description of joint to shell % of strength of joint

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
Tested by Hydraulic Pressure to

SUPERHEATER. Type Date of Approval of Plan Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler
Is Easing Gear fitted Pressure to which each is adjusted

Water Material of stays iron Area at smallest part 1.99 sq in Area supported by each stay 55.3 Working pressure by rules 270 End plates in steam space:
Material steel Thickness 1 1/16 Pitch of stays 16 1/2" x 15 1/2" How are stays secured D. Nuts Working pressure by rules 246 Material of stays steel

Area at smallest part 6.49 sq in Area supported by each stay 255.7 Working pressure by rules 263 Material of Front plates at bottom steel
Thickness 1 1/16 Material of Lower back plate steel Thickness 1 1/32 Greatest pitch of stays 14 1/4" x 7" Working pressure of plate by rules 220
Diameter of tubes 2 1/2" Pitch of tubes 3 5/8" x 3 1/2" Material of tube plates steel Thickness: Front 1 1/16 Back 1 3/16 Mean pitch of stays 8 7/8"

Pitch across wide water spaces 12 3/4" Working pressures by rules 248 Girders to Chamber tops: Material steel Depth and
Thickness of girder at centre 9" x 2 @ 1" Length as per rule 2'-11" Distance apart 7 3/8" x 7 1/4" Number and pitch of stays in each 4 @ 7 1/4"
Working pressure by rules 268 Steam dome: description of joint to shell % of strength of joint

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
Tested by Hydraulic Pressure to

SUPERHEATER. Type Date of Approval of Plan Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler
Is Easing Gear fitted Pressure to which each is adjusted

Water Material of stays iron Area at smallest part 1.99 sq in Area supported by each stay 55.3 Working pressure by rules 270 End plates in steam space:
Material steel Thickness 1 1/16 Pitch of stays 16 1/2" x 15 1/2" How are stays secured D. Nuts Working pressure by rules 246 Material of stays steel

Area at smallest part 6.49 sq in Area supported by each stay 255.7 Working pressure by rules 263 Material of Front plates at bottom steel
Thickness 1 1/16 Material of Lower back plate steel Thickness 1 1/32 Greatest pitch of stays 14 1/4" x 7" Working pressure of plate by rules 220
Diameter of tubes 2 1/2" Pitch of tubes 3 5/8" x 3 1/2" Material of tube plates steel Thickness: Front 1 1/16 Back 1 3/16 Mean pitch of stays 8 7/8"

Pitch across wide water spaces 12 3/4" Working pressures by rules 248 Girders to Chamber tops: Material steel Depth and
Thickness of girder at centre 9" x 2 @ 1" Length as per rule 2'-11" Distance apart 7 3/8" x 7 1/4" Number and pitch of stays in each 4 @ 7 1/4"
Working pressure by rules 268 Steam dome: description of joint to shell % of strength of joint

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
Tested by Hydraulic Pressure to

SUPERHEATER. Type Date of Approval of Plan Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler
Is Easing Gear fitted Pressure to which each is adjusted

Water Material of stays iron Area at smallest part 1.99 sq in Area supported by each stay 55.3 Working pressure by rules 270 End plates in steam space:
Material steel Thickness 1 1/16 Pitch of stays 16 1/2" x 15 1/2" How are stays secured D. Nuts Working pressure by rules 246 Material of stays steel

Area at smallest part 6.49 sq in Area supported by each stay 255.7 Working pressure by rules 263 Material of Front plates at bottom steel
Thickness 1 1/16 Material of Lower back plate steel Thickness 1 1/32 Greatest pitch of stays 14 1/4" x 7" Working pressure of plate by rules 220
Diameter of tubes 2 1/2" Pitch of tubes 3 5/8" x 3 1/2" Material of tube plates steel Thickness: Front 1 1/16 Back 1 3/16 Mean pitch of stays 8 7/8"

Pitch across wide water spaces 12 3/4" Working pressures by rules 248 Girders to Chamber tops: Material steel Depth and
Thickness of girder at centre 9" x 2 @ 1" Length as per rule 2'-11" Distance apart 7 3/8" x 7 1/4" Number and pitch of stays in each 4 @ 7 1/4"
Working pressure by rules 268 Steam dome: description of joint to shell % of strength of joint

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
Tested by Hydraulic Pressure to

SUPERHEATER. Type Date of Approval of Plan Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler
Is Easing Gear fitted Pressure to which each is adjusted

Water Material of stays iron Area at smallest part 1.99 sq in Area supported by each stay 55.3 Working pressure by rules 270 End plates in steam space:
Material steel Thickness 1 1/16 Pitch of stays 16 1/2" x 15 1/2" How are stays secured D. Nuts Working pressure by rules 246 Material of stays steel

IS A DONKEY BOILER FITTED?

No

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— 2 connecting rod top end bolts & nuts: 2 connecting rod bottom end bolts & nuts: 2 main bearing bolts: 1 set of coupling bolts: 1 set of feed & bilge pump valves: a quantity of assorted bolts & nuts: iron of various sizes: 2 propeller blades: 1 eccentric strap & 2 bolts: 1 set of spare packing rings for pistons: 24 condenser tubes: 36 boiler tubes

The foregoing is a correct description,

New York Shipbuilding Corp. Manufacturer.

Dates of Survey while building: During progress of work in shops: 1916 1917 Nov 23 Jan 4. 18 Feb 7 Mar 6. 29. 27. 31 May 18 Jun 18 July 3. 13. Aug 6. 16. 23. 27 Sep 13. 18 up to Aug 13 1918
During erection on board vessel: Apr 3. 10. 16. 23. 27 Oct 2. 8. 14. 29 Nov 5. 15. 22. 29.
Total No. of visits: 65.
Is the approved plan of main boiler forwarded herewith: Yes

Dates of Examination of principal parts: Cylinders 27. 2. 18 Slides 14. 6. 18 Covers 14. 6. 18 Pistons 18. 7. 18 Rods 18. 7. 18
Connecting rods 28. 6. 18 Crank shaft 27. 5. 18 Thrust shaft 28. 6. 18 Tunnel shafts 23. 7. 18 Propeller 14. 5. 18
Stern tube 18. 4. 18 Steam pipes tested 3. 8. 18 Engine and boiler seatings 8. 8. 18 Engines holding down bolts 23. 11. 18
Completion of pumping arrangements 22. 11. 18 Boilers fixed 10. 9. 18 Engines tried under steam 29. 10. 18
Completion of fitting sea connections 13. 8. 18 Stern tube 8. 8. 18 Screw shaft and propeller 8. 8. 18
Main boiler safety valves adjusted 29. 10. 18 Thickness of adjusting washers 1 3/4" to 1 1/2"
Material of Crank shaft: Steel Identification Mark on Do. 190 Material of Thrust shaft: Steel Identification Mark on Do. 190
Material of Tunnel shafts: Steel Identification Marks on Do. ✓ Material of Screw shafts: Steel Identification Marks on Do. 190
Material of Steam Pipes: Steel Test pressure 660 lbs per sq in

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: No If so, state name of vessel: "Edward L. Doherty Junior"

General Remarks (State quality of workmanship, opinions as to class, &c. Donkey Engines: 2 @ 6" x 4" x 6": 6" x 4" x 6": 7 1/2" x 5" x 10": 10" x 10" x 12": 16" x 10" x 14": 12" x 14" x 14" x 12": 7 1/2" x 6" x 10".

The machinery has been built under Special Survey; the material and workmanship being good, and proved satisfactory on steam trial.

It is submitted that this vessel be eligible for a record of + L. M. C. 11. 18 in the Register Book, also a notation of "Fitted for oil fuel 11. 18 F. P. above 150°F."

It is submitted that this vessel is eligible for THE RECORD. + LMC 11-18. FD. FITTED FOR OIL FUEL 11-18 F.P. ABOVE 150°F

J.W.D. 3/1/19. G.P.R.

The amount of Entry Fee ... \$ 15 : 00 :
Special ... \$ 242 : 00 :
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) \$ 7 : 00 :
When applied for, 19
When received, 23/1/19

Committee's Minute New York DEC 10 1918

Assigned + LMC 11. 18 Fitted for oil fuel 11. 18 F.P. above 150°F