

# REPORT ON MACHINERY.

No. 11445

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Date of writing Report 1<sup>st</sup> Nov<sup>r</sup> 1922 When handed in at Local Office 20<sup>th</sup> Nov<sup>r</sup> 1922 Port of Middlesbrough

No. in Survey held at Middlesbrough Date First Survey 30<sup>th</sup> Sept 1920 Last Survey 18<sup>th</sup> Decem<sup>r</sup> 1922

Reg. Book. Y8882 on the Steel screw steamer "Egyptian Prince" (Rt. No. 2160) (Number of Visits 99)

Master [check] Built at Haverthill in Yks By whom built Yarwood & B. Co. Ld. Tons [check] Gross [check] Net [check] When built 1922

Engines made at Middlesbrough By whom made Richardsons Westgarth & Co. Ld. when made 1922

Boilers made at [check] By whom made [check] when made 1922

Registered Horse Power [check] Owners Prince Line Ld. (Yarwood & B. Co. Ld.) Port belonging to London

Nom. Horse Power as per Section 28 538 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 26", 43", 43" Length of Stroke 48" Revs. per minute 43 Dia. of Screw shaft 14.5" Material of Iron

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 one length 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 [check] If two liners are fitted, is the shaft lapped or protected between the liners [check] Length of stern bush 5' - 2 1/2"

Dia. of Tunnel shaft 13.76" Dia. of Crank shaft journals 13.41" Dia. of Crank pin 14 1/2" Size of Crank webs 24 1/2" x 9" Dia. of thrust shaft under collars 14 1/4" Dia. of screw 14' - 3" Pitch of Screw 18' - 0" No. of Blades 4 State whether moveable No Total surface 95 sq'

No. of Feed pumps 2 Diameter of ditto 4 1/2" 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 2 Sizes of Pumps 8 x 5 1/2 x 8" : 9" x 11" x 10" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 4 of 3 1/2" and 4 of 2 1/2" in Cofferdams. In Holds, &c. Forward: 6 of 3 1/2" and 1 of 2 1/2" in duct keel. 2 of 3 1/2" in H.O.H. 1 of 3 1/2" in H.O.S. 2 of 3 1/2" in Deep Tank: 1 of 2 1/2" in Tunnel Well.

No. of Bilge Injections one sizes 8" Connected to condenser, or to circulating pump in pumps 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 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 [check]

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 Top Platform

**BOILERS, &c.**—(Letter for record (S)) Manufacturers of Steel J. Spencer & Sons Ld.

Total Heating Surface of Boilers 8151 sq' Is Forced Draft fitted Yes No. and Description of Boilers 3 S. E. Cyl. Mult.

Working Pressure 180 lb. Tested by hydraulic pressure to 320 lb. Date of test 22. 2. 22 No. of Certificate 6265

Can each boiler be worked separately Yes Area of fire grate in each boiler 65 sq' No. and Description of Safety Valves to each boiler Two direct spring loaded Area of each valve 12.56 sq" Pressure to which they are adjusted 185 lb. Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers 2' - 6" Int. dia. of boilers 15' - 6 1/2" Length 12' - 0" Material of shell plates Steel

Thickness 1 1/4" Range of tensile strength 28 1/2' / 32 1/2' Are the shell plates welded or flanged No Descrip. of riveting: cir. seams SR lap long. seams VR ABS Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8 5/8" Lap of plates or width of butt straps 18 5/8"

Per centages of strength of longitudinal joint rivets 86.2 Working pressure of shell by rules 180.5 lb. Size of manhole in shell 16" x 12" plate 85.5

Size of compensating ring 8" x 1 1/8" No. and Description of Furnaces in each boiler 3 Brighton Material Steel Outside diameter 46 3/4"

Length of plain part top Thickness of plates bottom 2 1/32" Description of longitudinal joint Weld No. of strengthening rings [check]

Working pressure of furnace by the rules 205 lb. Combustion chamber plates: Material Steel Thickness: Sides 1 9/32" Back 1 9/32" Top 5 3/8" Bottom 1 3/16"

Pitch of stays to ditto: Sides 8" x 8" Back 8 1/4" x 8" Top 4 1/2" x 9 1/2" If stays are fitted with nuts or riveted heads None Working pressure by rules 182 lb.

Material of stays Steel Area at smallest part 1.42 sq" Area supported by each stay 41.25 sq" Working pressure by rules 212 lb. End plates in steam space: Material Steel Thickness 1 1/8" Pitch of stays 20" x 16" How are stays secured Hub & Washer Working pressure by rules 188 lb. Material of stays Steel

Area at smallest part 6.1 sq" Area supported by each stay 320 sq" Working pressure by rules 194 lb. Material of Front plates at bottom Steel Thickness 3 1/16" Material of Lower back plate Steel Thickness 1 3/16" Greatest pitch of stays 15" x 8" Working pressure of plate by rules 180 lb.

Diameter of tubes 2 1/2" Pitch of tubes 3 3/4" x 3 1/16" Material of tube plates Steel Thickness: Front 1 3/16" Back 3/4" Mean pitch of stays 11 1/4" x 4 1/8"

Pitch across wide water spaces 13 1/2" Working pressures by rules 189 lb. Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 8" x 1 3/4" Length as per rule 2' - 6 25/32" Distance apart 9 1/2" Number and pitch of stays in each 3 @ 4 1/2"

Working pressure by rules 192 lb. Steam dome: description of joint to shell None % of strength of joint [check]

Diameter [check] Thickness of shell plates [check] Material [check] Description of longitudinal joint [check] Diam. of rivet holes [check]

Pitch of rivets [check] Working pressure of shell by rules [check] Crown plates [check] Thickness [check] How stayed [check]

**SUPERHEATER.** Type None Date of Approval of Plan [check] Tested by Hydraulic Pressure to [check]

Date of Test [check] Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler [check]

Diameter of Safety Valve [check] Pressure to which each is adjusted [check] Is Easing Gear fitted [check]

IS A DONKEY BOILER FITTED? no

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— Screw shaft & propeller, 2 Top end bolts & nuts, 2 Bottom end bolts & nuts, 2 main bearing bolts & nuts, 1 set of Coupling bolts & nuts, 12 Condenser Tubes, 30 Tender Tubes, 2 Safety valve springs, 1 main and 1 Auxiliary Feed check valve, 1 Pair of Bottom end bushes, 1 Eccentric Strap, Ring & Spring for HP piston, 1 set of Filter buckets, 1 set of Bilge pump valves, 1 set of Feed pump valves, 1/2 set of Air pump tubes, Assorted bolts & nuts, Sheet and bar steel

The foregoing is a correct description,

RICHARDSONS, WESTGARTH & Co., Ltd.

*[Handwritten signature]*

Manufacturer.

Dates of Survey while building	During progress of work in shops --	1920. Sept. 30 Oct 5 Dec 16 20 23 1921 Jan 7. 12. 20. 24 Feb 9. 17. 21. 24. 28. Mar 2. 14. 30. Apr 15
		21. May 19. 23. 27. June 1. 9. 14. 22. 27. July 1. 12. Aug 8. 29. Sept 6. 9. 12. 16. 17. 28. Oct 1. 5. 10. 17. 19. 20. 21. 25. 26. 28.
		Nov 2. 5. 8. 10. 14. 15. 16. 21. 22. 25. 30 Dec 5. 7. 9. 20. 30 1922 Jan 5. 10. 13. 17. 20. 25. Feb 2. 6. 10. 13. 17. 22. 24. Mar 17. 21. 24. 27
	During erection on board vessel --	Apr 19. 26. May 25. June 1. 21. 28. July 7. Sept 1. 6. 8. 13. 14. 20. Oct 13. 18. 25. Nov 26. Dec 3. 12.
	Total No. of visits	98 + 1 = 99

Is the approved plan of main boiler forwarded herewith

“ “ “ donkey “ “ “

Dates of Examination of principal parts—Cylinders 28.10.21 Slides 4.12.21 Covers 28.10.21 Pistons 4.12.21 Rods 4.12.21  
 Connecting rods 30.12.21 Crank shaft 24.10.21 Thrust shaft 14.10.21 Tunnel shafts 6.2.22. Screw shaft 9.11.21 Propeller 19.10.21  
 Stern tube 4.12.21 Steam pipes tested 1.9.22. Engine and boiler seatings 22.11.21 Engines holding down bolts 28.6.22  
 Completion of pumping arrangements 25.10.22 Boilers fixed 28.6.22 Engines tried under steam 13.9.22 ✓  
 Completion of fitting sea connections 22.11.21 Stern tube 14.3.22 Screw shaft and propeller 14.3.22  
 Main boiler safety valves adjusted 13.9.22 ✓ Thickness of adjusting washers PV 3/32 SV 1/16. Port boiler PV 3/32 SV 3/8. Starboard boiler PV 3/8 SV 1/4

Material of Crank shaft Ingot Steel Identification Mark on Do. 6281 RAS Material of Thrust shaft Ingot Steel Identification Mark on Do. 50410 N. ✓  
 Material of Tunnel shafts Ingot Steel Identification Marks on Do. 5594 N. ✓ Material of Screw shafts Iron Identification Marks on Do. 6281 RAS  
 Material of Steam Pipes lap welded steel Test pressure 540 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 No If so, state name of vessel "Egyptiana" (Indb. Rep. No 11254)

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

The machinery of this vessel has been built under Special Survey; the workmanship and materials are good. It has been efficiently fitted on board, and proved satisfactory under working conditions.

The vessel is eligible in our opinion to have the notations of L.M.C. 12.22 and "Fitted for oil fuel 11.22 F.P. above 150°F" made in the Register Book.

The vessel examined in drydock prior to sailing. Attended official trials 12.12.22 and found everything satisfactory.

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.

*[Handwritten signature]*  
18/12/22  
Wm Morrison & Wm Cowie  
Engineer Surveyors to Lloyd's Register of Shipping.

The amount of Entry Fee ...	£ 6 : 0	When applied for,	8. 12. 19 22
Special ...	£ 10/ : 18	When received,	19. 12. 22
Donkey Boiler Fee ...	£ :		
Travelling Expenses (if any) £	:		

Committee's Minute TUE. 19 DEC. 1922

Assigned + L.M.C. 12.22 F.D. C.L.

Ltd for oil fuel 12.22 F.P. above 150°F.



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