

REPORT ON MACHINERY.

No. 7177.

WED. 14 AUG. 1918

Received at London Office
NEWCASTLE-ON-TYNE

Date of writing Report 9th Aug 18 When handed in at Local Office 9th Aug 18 Port of

No. in Survey held at
Reg. Book.

Date, First Survey 16 Jan 1917 Last Survey 8th Aug 1918

(Number of Visits 16)

Gross 8656

Net 5458

Master Built at Farron By whom built Palmers & Co When built 1918

Engines made at Farron By whom made Palmers & Co when made 1918

Boilers made at Farron By whom made Palmers & Co when made 1918

Registered Horse Power 4500 Owners Federal Steam Nav Co Ltd Port belonging to London

Shaft Horse Power at Full Power 5000 Is Refrigerating Machinery fitted for cargo purposes yes Is Electric Light fitted yes

973.

TURBINE ENGINES, &c.—Description of Engines H.P. & L.P. Palmers & Co astern engines turbines No. of Turbines Two

Diameter of Rotor Shaft Journals, H.P. 7 1/2" L.P. 7 1/2" Diameter of Pinion Shaft 7 1/2" (16.3) rule

Diameter of Journals 7 1/2" Distance between Centres of Bearings 3-7 3/4" Diameter of Pitch Circle 9.208"

Diameter of Wheel Shaft 16 1/4" Distance between Centres of Bearings 8-3" Diameter of Pitch Circle of Wheel 146.082"

Width of Face 4-3" Diameter of Thrust Shaft under Collars 16 7/8" Diameter of Tunnel Shaft as per rule 13.79"

No. of Screw Shafts one Diameter of same as per rule 16.89" Diameter of Propeller 19-3" Pitch of Propeller 17-9"

No. of Blades 4 State whether Moveable yes Total Surface 118 sq ft Diameter of Rotor Drum, H.P. 30" L.P. 54" astern 2"

Thickness at Bottom of Groove, H.P. Solid L.P. 3/4" min Astern 5/8" min Revs. per Minute at Full Power, Turbine 1270 Propeller 80

PARTICULARS OF BLADING.

	H.P. Rotor	L.P. Rotor	ASTERN Rotor
	HEIGHT OF BLADES.	HEIGHT OF BLADES.	HEIGHT OF BLADES.
	DIAMETER AT TIP.	DIAMETER AT TIP.	DIAMETER AT TIP.
	NO. OF ROWS.	NO. OF ROWS.	NO. OF ROWS.
1ST EXPANSION	1 5/8"	1 3/4"	1 3/4"
	25 1/2"	57 1/2"	45 1/2"
2ND	1 5/16"	2 3/16"	2 1/2"
	25 7/8"	58 3/8"	47"
3RD	2 5/16"	2 3/4"	3 1/2"
	29 7/8"	59 1/2"	49"
4TH	2 3/4"	3 7/16"	3 1/2"
	30 1/2"	60 7/8"	49"
5TH	2 3/8"	4 1/4"	3 1/2"
	34 3/4"	62 1/2"	49"
6TH	2 7/8"	5 1/4"	
	35 3/4"	64 1/2"	
7TH	3 7/16"	6 1/2"	
	36 7/8"	67"	
8TH	4 1/16"	8"	
	38 1/8"	70"	

No. and size of Feed pumps One pair H.P. 13 1/2" x 10" x 24"

No. and size of Bilge pumps One duplex 6" x 4 1/2" x 6"

No. and size of Bilge suction in Engine Room Two 3 1/2" and two 3 1/2" in boiler room

In Holds, &c. Two 3 1/2" diameter in Nos 1 & 2.

3, 4 & 5 holds and one 2 1/2" in tunnel well

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 3 1/2"

Are all the bilge suction pipes fitted with roses yes Are the roses in Engine room always accessible yes

Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks Both yes

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 Below

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 yes Is it fitted with a watertight door yes worked from deck

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

Total Heating Surface of Boilers 13752 sq ft Forced Draft fitted yes No. and Description of Boilers Four Single Ended

Working Pressure 180 lb per sq in Tested by hydraulic pressure to 360 lb per sq in Date of test 3/12/17, 21/12/17 No. of Certificate 9025 & 9035

Can each boiler be worked separately yes Area of fire grate in each boiler 80 sq ft No. and Description of Safety Valves to

each boiler 2 direct spring Area of each valve 11.04 sq in Pressure to which they are adjusted 185 lb Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 36" dia. of boilers 17-6" Length 12-0" Material of shell plates Steel

Thickness 1 1/32" Range of tensile strength 29 & 32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 2 R 20 x 16

long. seams 5 R Butt Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 9/16" Top of plates or width of butt straps 20 1/2"

Per centages of strength of longitudinal joint rivets 86.5 Working pressure of shell by rules 182 lb Size of manhole in shell 16" x 12"

Size of compensating rings 37 x 33 x 1 1/16 No. and Description of Furnaces in each Boiler 4 Doughton Material Steel Outside diameter 46 3/4"

Length of plain part top Thickness of plates crown 5/8" Description of longitudinal joint Welded No. of strengthening rings

bottom Thickness of plates bottom 1 1/8" Working pressure of furnace by the rules 215 Combustion chamber plates: Material Steel Thickness: Sides 1/16" Back 1/16" Top 1/16" Bottom 1 1/8"

Pitch of stays to ditto: Sides 9/16" x 9/16" Back 5/8" x 5/8" Top 1/2" x 3/4" If stays are fitted with nuts or riveted heads But Working pressure by rules 182 lb

Material of stays Steel at smallest part 2 3/8" Area supported by each stay 112 sq in Working pressure by rules 185 End plates in steam space

Material Steel Thickness 1 3/16" Pitch of stays 21-17 1/4 How are stays secured But Working pressure by rules 182 Material of stays Steel

at smallest part 6-67 sq in Area supported by each stay 362 sq in Working pressure by rules 192 Material of Front plates at bottom Steel

Thickness 1" Material of Lower back plate Steel Thickness 15/16" Greatest pitch of stays 14" x 10" Working pressure of plate by rules 204

Diameter of tubes 3" Pitch of tubes 4 1/4" Material of tube plates Steel Thickness: Front 1/16" x 1" Back 25/32" Mean pitch of stays 10 5/8"

Pitch across wide water spaces 14" Working pressures by rules 197 lb Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 8 1/4" x 1 3/4" Length as per rule 30 3/8 Distance apart 10 1/2 Number and pitch of stays in each No. 8

Working pressure by rules 180 lb Steam dome: description of joint to shell None % of strength of joint Diameter

Thickness of shell plates Material Description of longitudinal joint Diameter of rivet holes Pitch of rivets

Working pressure of shell by rules Crown plates: Thickness How stayed

002260-002268-0024

Tested by Hydraulic Pressure to 440 lb per

Diameter of Safety Valve 2" ✓ Pressure to which each is adjusted 185 lb per sq in Is Fasing Gear fitted Yes

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR.

State the articles supplied:—

SPARE GEAR. State the articles supplied:—Two sets of blading material, 2 sets of bolts for turbine covers, 2 turbine bearing bushes, 2 gear wheel shaft bushes, 3 pinion shaft bushes, 1 set of coupling bolts & nuts, 2 set gland strips for each seat, 8 liners for adjusting blocks, 4 bars iron, 100 assorted bolts & nuts, 1 set feed donkey valves, 3 plates of iron, 1 set ballast donkey valves, 2 cast iron propeller blades, one set studs for propeller blades, 2 check valve lids, 1 set valves & seats for feed pumps, 1 piston rod for fan engine, 1 pair crank pin bushes & bolts and 1 valve spindle for fan engine, 1 pair crank pin bushes & connecting rod, 1 impeller & shaft, 1 set main bearing bushes and valve spindle for circulating pump, 2 safety valve springs etc.

The foregoing is a correct description,

The foregoing is a correct description,

Palmers Shipbuilding & Iron Co., Ltd., *Manufacturers.*

L Kemp
Manager, Engine Dept.

Dates of Survey while building	During progress of work in shops --	¹⁹¹⁷ ^{an} 16. 26. 28. 7. 5. Mar. 8. 28. Apr. 2. 12. 16. 26. 30 May 7. 11. 14. 16. 29. 31. Jun 4. 7. 9. 13. 14. 20. 21. 29. Jul 6. 19. 20. 23. 25. 30. Aug 3. 16. 23. 27. 28. 29. Sept. 4. 7. 19. 18. 20. 21. 27. 28. Oct. 15. 8. 9. 11. 16. 19. 23. 31. Nov. 2. 6. 7. 9. 13. 14. 16. 19. 21. 27. 28. 29. 30. Dec. 3. 5. 16. 10. 13. 14. 15. 19. 20. 27. 28. 31. 1918 Jan. 7. 8. 10. 16. 21. 25. 29. 31. Feb. 4. 6. 8. 13. 14. 19. 28. Mar. 6. 12. 14. 18. 27. Apr. 4. 10. 12. 17. 19.
	During erection on board vessel --	24. 29. 30. May 3. 10. 17. 18. 22. 23. 28. 30 Jun 1. 10. 11. 12. 14. 17. 21. 27. Jul 3. 4. 5. 8. 10. 11. 17. 18. 22. 26. 30. Aug 2. 6. 8.
	Total No. of visits	136

Is the approved plan of main boiler forwarded herewith yes

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

31/5, 4/6, 20/6, 29/6 " donkey " 27/9, 5/10, 11/10, 7/11
 20/7, 25/7, 27/8 31/8, 29/6, 25/7 27/8, 4/9, 19/10, 1/11
 4/9, 14/9, 17 Rotors 11/12/17, 21/1/18 Gearing 27/8, 21/9/17
 3/8, 27/8, 4/9, 14/9 5/1, 15/1, 31/1 Tunnel shafts 5/1, 16/1
 14/10, 7/11, 13/12/17 Thrust shaft 25/1/18 Screw shaft 8/1, 21/1/18 Propeller 13/12, 14/12/18
 5/2, 14/12, 22/5, 0/6
 30/11, 4/12, 14/12/17 Stern tube Steam pipes tested 27/6, 4/7/18 Engine and boiler seatings 25/1/18 Engines holding down bolts 14/6, 3/7/18
 6/11, 9/11, 14/11, 20/11/17
 Completion of pumping arrangements 26/7/18 Boilers fixed 30/4/18 Engines tried under steam 5th & 8th July

Main boiler safety valves adjusted 5/7/18 Thickness of adjusting washers 1/20"
Material and tensile strength of Rotor shafts S M Steel 36.6 & 34.4 tons Identification Mark on /Do. 9484

Material and tensile strength of Pinion shaft *nickel steel - 45 tons per sq. in.* Identification Mark on Do. *2412 D.*
Material of Wheel shaft *nickel steel* Identification Mark on Do. *2462 D.*
Material of Thrust shaft *nickel steel* Identification Mark on Do. *12/3/18 G.M.*

Material of Tunnel shafts *SM Steel* Identification Marks on Do. *2462 D 12/3/86 M.* Material of Screw shafts *SM Steel* Identification Marks on Do. *2462 D 12/3/86 M.*
Material of Shafts *Steel & Copper* Test pressure *540 + 360 lbs per sq. inch*

Is an installation fitted for burning oil fuel ☒ Is the flash point of the oil to be used over 150°F. ☒

Have the requirements of Section 49 of the Rules been complied with ✓

Is this machinery a duplicate of a previous case? No *If so, state name of vessel.*

General Remarks (State quality of workmanship, opinions as to class, &c.) The machinery of this vessel has been constructed under special survey. The materials and workmanship are of good quality, it has been securely fitted on board and satisfactorily tested under full steam pressure.

The machinery of this vessel is now in my opinion eligible for record of U. S. M. C 8-18 (in red) in the register book. 2 boiler plans, steel test pieces - 15 forging castings & steam pipe invoices now forwarded.

The amount of Entry Fee	...	£	3 : 0 :	} When applied for, 13 AUG 1918
Special	...	£	70 : 7 :	
Donkey Boiler Fee	...	£	68 : 13 :	
Travelling Expenses (if any)	£	✓	:	
				When received, 13-7-1918

George Hurdoch
Engineer Surveyor to Lloyd's Register of Shipping

It is submitted that
this vessel is eligible for
THE RECORD. + LMC 8.18.F.
team Turbines geared to 1 screw shaft

Committee's Minute TUE. 20. AUG. 1978

Assigned + Lkn 6 8 18

© 2020
16/8/18 WDA

Lloyd's Register
Foundation