

REPORT ON MACHINERY.

No. 8223.

Received at London Office

FRI. MAY 14 1920

Date of writing Report 10/5/1920 When handed in at Local Office 13/5/1920 Port of DUNDEE
 No. in Survey held at Dundee Date, First Survey Sept. 26th 1919 Last Survey May 4th 1920
 Reg. Book. on the S.S. "FIR PARK" (Number of Visits 334)
 Master By whom built Grampian By whom built Grampian By whom built Grampian By whom built Grampian
 Engines made at Dundee By whom made Cooper & Greig Ltd. when made 1920
 Boilers made at do By whom made do when made 1920
 Registered Horse Power 228 Owners Port belonging to
 Nom. Horse Power as per Section 28 228 Is Refrigerating Machinery fitted for cargo purposes ✓ Is Electric Light fitted ✓

ENGINES, &c.—Description of Engines Triple Expansion, Surface Condensing No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 21 35 54 Length of Stroke 36 Revs. per minute 118 Dia. of Screw shaft 11 8 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 ✓ 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 4' 1 1/2"
 Dia. of Tunnel shaft 10 29 Dia. of Crank shaft journals 10 8 1 Dia. of Crank pin 11 8 Size of Crank webs 8 1/4 Dia. of thrust shaft under
 collars 11 Dia. of screw 14 9 Pitch of Screw 15 6 No. of Blades 4 State whether moveable No Total surface 75
 No. of Feed pumps 2 Diameter of ditto 3 1/4 Stroke 18 Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 3 1/2 Stroke 18 Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 2 Sizes of Pumps 7 1/2 x 8 - General No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 2 @ 2 1/4" & 2 @ 2 1/4" In Holds, &c. F. pump 1 @ 2 1/2" For hold 2 @ 2 1/4"
 No. of Bilge Injections 1 sizes 4 1/2 Connected to condenser or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes - 3"
 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 ✓
 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 Bilge & Suction pipes How are they protected Wood sheathing
 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 in E.R.

BOILERS, &c.—(Letter for record) Manufacturers of Steel J. SPENSER & SONS, D. COLVILLE & SONS, THE STEEL CO. OF SCOTLAND.
 Total Heating Surface of Boilers 3496 Is Forced Draft fitted No No. and Description of Boilers Two single ended marine
 Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 25.10.19 No. of Certificate 780
 Can each boiler be worked separately Yes Area of fire grate in each boiler 56 3/8 No. and Description of Safety Valves to
 each boiler 2 Spring loaded Area of each valve 7 04 Pressure to which they are adjusted 180 Are they fitted with easing gear ✓
 Smallest distance between boilers 9" Mean dia. of boilers 4' 6" Length 10' 6" Material of shell plates Steel
 Thickness 1 1/2" Range of tensile strength 29 3/2 Tons Are the shell plates welded or flanged ✓ Descrip. of riveting: cir. seams D.R.
 long. seams T.R. Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8 1/2" Lap of plates or width of butt straps 1' 6 3/4"
 Per centages of strength of longitudinal joint 78 1/2 Working pressure of shell by rules 180 5 Size of manhole in shell 16" x 12"
 Size of compensating ring 3 1/2" No. and Description of Furnaces in each boiler 3 horizontal Material Steel Outside diameter 3' 9"
 Length of plain part top 14" Thickness of plates crown 3 1/2" Description of longitudinal joint welded No. of strengthening rings ✓
 Working pressure of furnace by the rules 183 Combustion chamber plates: Material Steel Thickness: Sides 7/8" Back 7/8" Top 7/8" Bottom 3/16"
 Pitch of stays to ditto: Sides 9 x 7 1/8" Back 8 1/4 x 8" Top 7 1/8 x 8 1/4" stays are fitted with nuts or riveted heads Nuts Working pressure by rules 192
 Material of stays Steel Area at smallest part 1 99 Area supported by each stay 40 8 Working pressure by rules 211 End plates in steam space:
 Material Steel Thickness 1 5/32" Pitch of stays 9 3/4 x 18" How are stays secured On Working pressure by rules 183 Material of stays Steel
 Area at smallest part 5 79 Area supported by each stay 330 Working pressure by rules 182 Material of Front plates at bottom Steel
 Thickness 1 1/32" Material of Lower back plate Steel Thickness 29 3/32" Greatest pitch of stays 8 3/4 x 15" Working pressure of plate by rules 189
 Diameter of tubes 3 1/2" Pitch of tubes 4 7/8 x 5" Material of tube plates Steel Thickness: Front 1 1/32" Back 29 3/32" Mean pitch of stays 12 3/8"
 Pitch across wide water spaces 14 1/2" Working pressures by rules 188 & 182 Girders to Chamber tops: Material Steel Depth and
 thickness of girder at centre 8' x 1" (2) Length as per rule 2-7 Distance apart 8 3/4" Number and pitch of stays in each Steel 7 3/8"
 Working pressure by rules 225 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 ✓
 UPPER HEATER. 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 ✓

W509-031

IS A DONKEY BOILER FITTED?

Yes

If so, is a report now forwarded?

Yes.

SPARE GEAR. State the articles supplied:— 2 Top end bolts & nuts. 2 Bottom end bolts & nuts. 2 main bearing bolts & nuts. 1 set coupling bolts & nuts. 1 set of valves for air, circulating, feed & bilge pumps. One propeller. Assorted bolts & nuts & iron of various sizes. 6 pump ring bolts. Spare check valve. One safety valve spring.

The foregoing is a correct description,

FOR DONKEY BOILER LIMITED.

Thos Croker

Manufacturer.

Dates of Survey while building { During progress of work in shops -- SEP. 26. OCT. 2. 9. 10. 14. 24. 25. NOV. 13. 20. 24. DEC. 4. 11. 1920 JAN. 4. 16. 21. 24. FEB. 9. 19. 24. MAR. 1. 8. 16. 25. 29. APR. 1. 4. During erection on board vessel -- APR. 8. 15. 16. 20. 22. 24. 30. MAY 5. 4. Total No. of visits 134.

Is the approved plan of main boiler forwarded herewith

" " " donkey " " "

Dates of Examination of principal parts—Cylinders 29/3/20. Slides 4/4/20. Covers 4/4/20. Pistons 4/4/20. Rods 29/3/20. Connecting rods 29/3/20. Crank shaft 9/2/20. Thrust shaft 19/2/20. Tunnel shafts 19/2/20. Screw shaft 29/3/20. Propeller 15/4/20. Stern tube 13/2/20. Steam pipes tested 5-5-20 27-4-20. Engine and boiler seatings 22-4-20. Engines holding down bolts 30-4-20. Completion of pumping arrangements. Boilers fixed 8-4-20. Engines tried under steam. Completion of fitting sea connections. Stern tube. Screw shaft and propeller 15-4-20. Main boiler safety valves adjusted. Thickness of adjusting washers.

Material of Crank shaft Steel Identification Mark on Do. 553 J-H-M. Material of Thrust shaft Steel Identification Mark on Do. 553 J-H-M.

Material of Tunnel shafts Steel Identification Marks on Do. 553 J-H-M. Material of Screw shafts Steel Identification Marks on Do. 553 J-H-M.

Material of Steam Pipes S.D. Cooper, 4 1/2" Bore x 6 lbs. Test pressure 360 lbs per sq in.

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 duplicate of a previous case. Yes. If so, state name of vessel "Ashpark".

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

These engines & boilers have been built under special survey, and accordance with the approved plans. The materials & workmanship sound & good.

The vessel has left for Frankmouth, where the safety valves will be adjusted, the engines tried under steam, & the spare has checked. Glasgow Surveyors advised.

The amount of Entry Fee ... £ 2 : 0 : When applied for, Special ... £ 31 : 8 : May 13 1920. Donkey Boiler Fee ... £ : : When received, Travelling Expenses (if any) £ : : 29/6/20 JLB 30

John Mackenzie

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 22 JUN 1920

Assigned See minute on Gls. Rpt. No. 40094



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