

Rpt. 4.

REPORT ON MACHINERY.

No. 13651

Date of writing Report 3rd Sept 1924 When handed in at Local Office 6th Sept 1924 Port of Aberdeen
No. in Survey held at Aberdeen Date, First Survey February 28, 1920 Last Survey September 6, 1924
Reg. Book. on the Single Screw Tug "CULEX." (Number of Visits)

Master Built at Aberdeen By whom built Alex. Hall & Co Ltd Tons Gross 104.46 Net 1.34
Engines made at Aberdeen By whom made Alex. Hall & Co Ltd No. 2592 When built 1924
Boilers made at do By whom made do No. 2592 when made 1924
Registered Horse Power Owners Messrs Gaslee & Son Port belonging to London
Nom. Horse Power as per Section 28 86.8 87 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 13" - 21" - 35" Length of Stroke 24 Revs. per minute Dia. of Screw shaft as per rule 6.0" Material of screw shaft as fitted 7.5" Is the screw shaft fitted with a continuous liner the whole length of the stern tube no liner Is the after end of the liner made water tight
Is the propeller boss 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 2'-4"
Dia. of Tunnel shaft as per rule 6.34" Dia. of Crank shaft journals as per rule 6.6" Dia. of Crank pin 6.75" Size of Crank webs 10" x 4.5" Dia. of thrust shaft under collars 6.75" Dia. of screw 8'-6" Pitch of Screw 11'-6" No. of Blades 3 State whether moveable no Total surface 29.5 ft²
No. of Feed pumps 2 Diameter of ditto 2.5" Stroke 11" Can one be overhauled while the other is at work yes
No. of Bilge pumps 2 Diameter of ditto 2.5" Stroke 11" Can one be overhauled while the other is at work yes
No. of Donkey Engines one Sizes of Pumps 6" x 4.5" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room 1 @ 2" 1 @ 2" aft 1 @ 2" in stokehold In Holds, &c. 1 @ 2" in fore hold 1 @ 2" in fore peak.
No. of Bilge Injections one sizes 3" Connected to condenser, or to circulating pump or a separate Donkey Suction fitted in Engine room & size 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 no
Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks Both Valves & Cocks
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

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 no tunnel Is it fitted with a watertight door worked from

OILERS, &c.—(Letter for record S) Manufacturers of Steel Messrs David Colville & Sons Ltd
Total Heating Surface of Boilers 1604 Is Forced Draft fitted no No. and Description of Boilers one S.E. Cyl. Multitubular
Working Pressure 190 lbs. Tested by hydraulic pressure to 325 lbs. Date of test 20-8-24 No. of Certificate 1032

Can each boiler be worked separately Area of fire grate in each boiler 42.6 ft² No. and Description of Safety Valves to each boiler 2 direct spring loaded Area of each valve 4.908 ft² Pressure to which they are adjusted 195 lbs. Are they fitted with easing gear yes
Smallest distance between boilers or uptakes and bunkers or woodwork 10" Mean dia. of boilers 13'-0" Length 10'-8" Material of shell plates steel
Thickness 1.5" Range of tensile strength 28-32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams D.R. Lap

Long. seams T.R.D.B.S. Diameter of rivet holes in long. seams 1.3" Pitch of rivets 8" Lap of plates or width of butt straps 18"
Per centages of strength of longitudinal joint rivets 89.1% Working pressure of shell by rules 191.1 Size of manhole in shell 16" x 12"
Size of compensating ring 30" x 34" x 1.5" No. and Description of Furnaces in each boiler 2 plain Material steel Outside diameter 48"
Length of plain part top 10.5" bottom 10.2" Thickness of plates crown 5.3" bottom 6.4" Description of longitudinal joint weld No. of strengthening rings four

Working pressure of furnace by the rules 193 Combustion chamber plates: Material steel Thickness: Sides 4.5" Back 4.75" Top 3.5" Bottom 4.5"
Pitch of stays to ditto: Sides 10" x 9" Back 10" x 9.5" Top 10" x 10" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 191.5
Material of stays steel Area at smallest part 2.04 ft² Area supported by each stay 95 ft² Working pressure by rules 191 End plates in steam space:

Material steel Thickness 1.3" Pitch of stays 16" x 15.5" How are stays secured D. nuts & W Working pressure by rules 199.8 Material of stays steel
Area at smallest part 6.1 ft² Area supported by each stay 328 ft² Working pressure by rules 190 Material of Front plates at bottom steel
Thickness 1.3" Material of Lower back plate steel Thickness 2.5" Greatest pitch of stays 14" x 7.5" Working pressure of plate by rules 193.4

Diameter of tubes 3.5" Pitch of tubes 4.5" x 4.5" Material of tube plates steel Thickness: Front 1.3" Back 1.3" Mean pitch of stays 9.5"
Pitch across wide water spaces 14.5" Working pressures by rules 195.4 Girders to Chamber tops: Material steel Depth and
Thickness of girder at centre 8.5" x 3.5" Length as per rule 2'-7.25" Distance apart 10" Number and pitch of stays in each 2 @ 10"

Working pressure by rules 200 Steam dome: description of joint to shell none % 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

PERHEATER. Type none 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

W1104-0326

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IS A DONKEY BOILER FITTED? ☒ No

If so, is a report now forwarded? ☒

SPARE GEAR. State the articles supplied:— 2 top end, 2 bottom end + 2 main bearing bolts & nuts.
1 set of shaft coupling bolts & nuts. 20 condenser tubes & glands. one set each of Air, Air,
Feed & Bilge pump glands. one each Main & donkey feed Check Valve. 6 gauge
glasses & packing rings. 6 pump ring bolts. 2 sets firebars. 3 Boiler tubes. Cast iron
propeller. Assorted bolts & nuts and a quantity of bar iron.

The foregoing is a correct description,

For ALEXANDER HALL & CO., L.L.

A. Comda

SECRETARY.

Manufacturer.

Dates of Survey while building { During progress of work in shops -- 1920 Feb 28, Mar 1, 25, 31, Apr 8, 14, 22, 28, May 8, 26, Jun 8, 14, 19, 29, Jul 6, 14, Aug 10, 16, 26, Sep 1, 16, Oct 15, Nov 10, Dec 21
During erection on board vessel -- 1921 Jan 19, 1924 May 7, 28, Jun 6, 18, 20, 24, Jul 1, 8, 15, 24, Aug 11, 15, 19.
Total No. of visits Aug 20, 21, 25, 29, Sep 2, 3, 4, 5, 6.
47

Is the approved plan of main boiler forwarded herewith ☒ Yes

" " " donkey " " " ☒

Dates of Examination of principal parts—Cylinders 10-10-20 Slides 10-10-20 Covers 28-4-20 Pistons 14-6-20 Rods 14-6-20
Connecting rods 26-3-20 Crank shaft 14-6-20 Thrust shaft 7-8-24 Tunnel shafts 7-8-24 Screw shaft 7-8-24 Propeller 7-8-24
Stern tube 11-8-24 Steam pipes tested 3-9-24 Engine and boiler seatings 15-8-24 Engines holding down bolts 1-9-24
Completion of pumping arrangements 2-9-24 Boilers fixed 21-8-24 Engines tried under steam 2-9-24
Completion of fitting sea connections 19-8-24 Stern tube 15-8-24 Screw shaft and propeller 19-8-24
Main boiler safety valves adjusted 2-9-24 Thickness of adjusting washers Port Valve $\frac{1}{2}$ " Stars Valve $\frac{13}{32}$ "

Material of Crank shaft *I. Steel* Identification Mark on Do. *1319 ARF* Material of Thrust shaft *Steel* Identification Mark on Do. *1451 ACEW*
Material of Tunnel shafts *Steel* Identification Marks on Do. *1452 ACEW* Material of Screw shafts *Steel* Identification Marks on Do. *1453 ACEW*
Material of Steam Pipes *solid drawn Copper* Test pressure *380 lbs* ☒

Is an installation fitted for burning oil fuel ☒ No

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 ☒ No If so, state name of vessel ☒

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

These Engines & Boiler have been constructed under special survey and in accordance with the Secretary's letter, the rules and approved plan.

The Materials and Workmanship are good, when completed and properly fitted on board, they were tried under steam at moorings with satisfactory results, and are now in good order, and in my opinion entitled to the record of *LMC 9.24* ^{in Red} in the Register Book.

The tail shaft is without liner and is fitted with a Cedervall's self adjusting oil gland.

An Electric light installation has been fitted a report on which is forwarded herewith.

It is submitted that
this vessel is eligible for
THE RECORD. + LMC 9.24. OG.

The amount of Entry Fee ... £ 2 : 0 : 0 When applied for,
Special ... £ 21 : 14 : 0 6th Sept 1924
Donkey Boiler Fee ... £ : : :
Travelling Expenses (if any) £ : : :
When received, 20th Sept 1924

B. E. Wilkey
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUES. 16 SEP 1924

Assigned

+ LMC 9.24
C.C.

CERTIFICATE WRITTEN



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