

REPORT ON MACHINERY.

No. 32753

Date of writing Report 14/5/21 19 21 When handed in at Local Office 14/5/21 19 21 Port of Aull Received at London Office THU 21 JUL 1921
 No. in Survey held at Aull
 Reg. Book. 5646 on the S.S. WITHERNSEA ex APENRADE
 Date, First Survey 14/3/21 Last Survey 10/5/21 19 21
 (Number of Visits 12)
 Master Built at Flensburg By whom built Flensburger Schiffbau Ges. Tons { Gross 257 Net 93
 Engines made at Flensburg By whom made Flensburger Schiffbau Ges. When built 1918
 Boilers made at Flensburg By whom made Flensburger Schiffbau Ges. when made 1918
 Registered Horse Power 85 Owners Aull Steam Towing & Ice Co. Ltd. when made 1918
 Nom. Horse Power as per Section 28 85 Is Refrigerating Machinery fitted for cargo purposes No Port belonging to Aull
 Is Electric Light fitted Yes

Engines, &c.—Description of Engines Triple expansion
 Dia. of Cylinders 12 1/2 x 20 1/2 x 35 1/2 Length of Stroke 23 1/2 Revs. per minute 107 Dia. of Screw shaft 4 1/2 as per rule 4 1/2 Material of as fitted 4 1/2 screw shaft ✓
 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 31 1/2
 Dia. of Tunnel shaft 6 1/2 as per rule 6 1/2 Dia. of Crank shaft journals 6 1/2 as per rule 6 1/2 Dia. of Crank pin 4 1/2 Size of Crank webs 3 1/2 x 4 1/2 Dia. of thrust shaft under 6 1/2
 Collars 6 1/2 Dia. of screw 9 1/4 Pitch of Screw 10 1/2 No. of Blades 4 State whether moveable No Total surface 34 sq ft
 No. of Feed pumps One Diameter of ditto 2 1/2 Stroke 12 Can one be overhauled while the other is at work ✓
 No. of Bilge pumps One Diameter of ditto 2 1/2 Stroke 12 Can one be overhauled while the other is at work ✓
 No. of Donkey Engines One Sizes of Pumps 4 x 6 1/2 x 4 No. and size of Suctions connected to both Bilge and Donkey pumps In Holds, &c. 1-2 x 1-2 1/2 x 1-2 1/2 x 1-2 1/2
 Engine Room One 2' x one steam 4' x one 2 1/2'
 No. of Bilge Injections 1 sizes 3 1/2 Connected to condenser, or to circulating pump Cir. P. Is a separate Donkey Suction fitted in Engine room & size Yes 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 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
 That pipes are carried through the bunkers Main steam to waste How are they protected Shut in casing
 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 ✓ Is it fitted with a watertight door ✓ worked from ✓

Boilers, &c.—(Letter for record ✓) Manufacturers of Steel ✓
 Total Heating Surface of Boilers 1539 sq ft Is Forced Draft fitted No No. and Description of Boilers One single drum horizontal
 Working Pressure 200 lb Tested by hydraulic pressure to 400 lb Date of test 18/4/21 No. of Certificate ✓
 Can each boiler be worked separately ✓ Area of fire grate in each boiler 36 sq ft No. and Description of Safety Valves to ✓
 Each boiler Two spring loaded Area of each valve 4.64 sq ft Pressure to which they are adjusted 200 lb Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 9" Mean dia. of boilers 12' 9" Length 10' 6" Material of shell plates ✓
 Thickness 1 1/2" Range of tensile strength ✓ Are the shell plates welded or flanged Welded Descrip. of riveting: cir. seams double
 g. seams Q.R.D.B.S. Diameter of rivet holes in long. seams ✓ Pitch of rivets 14 1/2" Lap of plates or width of butt straps 26 1/4"
 Percentages of strength of longitudinal joint ✓ Working pressure of shell by rules ✓ Size of manhole in shell 16 x 12"
 No. of compensating ring 4 x 1 1/2" No. and Description of Furnaces in each boiler Two Cornish Material ✓ Outside diameter 3' 11"
 Length of plain part 6' 6" Thickness of plates ✓ Description of longitudinal joint Welded No. of strengthening rings ✓
 Working pressure of furnace by the rules ✓ Combustion chamber plates: Material ✓ Thickness: Sides 2 1/2" Back 2 1/2" Top 2 1/2" Bottom 1 1/2"
 Thickness of stays to ditto: Sides 8 1/2 x 7 1/2 Back 4 1/2 x 7 1/2 Top 8 1/2 x 8 1/2 If stays are fitted with nuts or riveted heads Not in use Working pressure by rules ✓
 Material of stays ✓ Area at smallest part ✓ Area supported by each stay ✓ Working pressure by rules ✓ End plates in steam space: ✓
 Material ✓ Thickness 1 1/4" Pitch of stays 14 1/2 x 15" How are stays secured DN. W. Working pressure by rules ✓ Material of stays ✓
 Area at smallest part ✓ Area supported by each stay ✓ Working pressure by rules ✓ Material of Front plates at bottom ✓
 Thickness 1 1/4" Material of Lower back plate ✓ Thickness 1 1/4" Greatest pitch of stays ✓ Working pressure of plate by rules ✓
 Diameter of tubes 8 1/2" Pitch of tubes 4 1/2 x 6 1/2" Material of tube plates ✓ Thickness: Front 1 1/2" Back 1 1/2" Mean pitch of stays 12 1/2 x 8 1/2"
 Pitch across wide water spaces 11" Working pressures by rules ✓ Girders to Chamber tops: Material ✓ Depth and ✓
 Thickness of girder at centre 8 1/2 x 1 1/2" Length as per rule ✓ Distance apart 8 1/2" Number and pitch of stays in each 2 at 8 1/2"
 Working pressure by rules ✓ Steam dome: description of joint to shell double riveted % of strength of joint ✓
 Diameter 25 1/2" Thickness of shell plates 2" Material ✓ Description of longitudinal joint D.R. lap Diam. of rivet holes ✓
 No. of rivets ✓ Working pressure of shell by rules ✓ Crown plates ✓ Thickness 2" How stayed ✓
 SUPERHEATER. Type Smith Date of Approval of Plan ✓ Tested by Hydraulic Pressure to 400 lb
 Date of Test 24/3/21 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 ✓

3 old boiler removed & demolished, new fitted hull 8.35

IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded? *✓*

SPARE GEAR. State the articles supplied:— *Two top end bolts & nuts, Two bottom end bolts & nuts
Two main bearing bolts & nuts, 1 set of coupling bolts, 1 set of feed pump valves, 1 set of
large pump valves 1 set each of main & donkey check valves 1 set of safety valve springs
One boiler tube expander One spare unit for Lunits Lubricator. A quantity of
assorted bolts nuts & washers, shut iron & shut brass*

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building { During progress of work in shops - - } *1921 :- 14th Mar to 10th May 1921*
{ During erection on board vessel - - - }
Total No. of visits *12*

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

" " " donkey " " " *✓*

Dates of Examination of principal parts—Cylinders *14/3/21* Slides *14/3/21* Covers *14/3/21* Pistons *14/3/21* Rods *14/3/21*

Connecting rods *14/3/21* Crank shaft *14/3/21* Thrust shaft *13/21* Tunnel shafts *22/3/21* Screw shaft *31/4/21* Propeller *31/4/21*

Stern tube *31/4/21* Steam pipes tested *4/3/21* Engine and boiler seatings *7/4/21* Engines holding down bolts *7/4/21*

Completion of pumping arrangements *15/4/21* Boilers fixed *✓* Engines tried under steam *✓*

Completion of fitting sea connections *✓* Stern tube *✓* Screw shaft and propeller *✓*

Main boiler safety valves adjusted *29/4/21* Thickness of adjusting washers *P 3/8" S 1/2"*

Material of Crank shaft *✓* Identification Mark on Do. *✓* Material of Thrust shaft *✓* Identification Mark on Do. *✓*

Material of Tunnel shafts *✓* Identification Marks on Do. *✓* Material of Screw shafts *✓* Identification Marks on Do. *✓*

Material of Steam Pipes *Steel* Test pressure *600 lb sq"*

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 *Yes* If so, state name of vessel *FLAMBOROUGH MURWIK*

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

The Machinery & Boilers of this vessel are stated to have been built under Germanischer Lloyd's Survey & Classed by them.

The present Owners Messrs The Hull Steam Towing & Ice Co Ltd. Hull. request that the Machinery & Boilers be surveyed with a view to being classed with Lloyd's Register of Shipping.

So far as could be ascertained from the examination made, the material & workmanship are good, the machinery & Boilers are properly fitted & secured & the safety valves adjusted under steam to a working pressure of 200 lb sq"

In my opinion the vessel is eligible for the record of L.M.C. 5-21.

The amount of Entry Fee ... £ : When applied for, *10*
Special ... £ : *See P 10*
Donkey Boiler Fee ... £ : When received, *10*
Travelling Expenses (if any) £ : *See P 10*

Committee's Minute *FRI 15 AUG. 1921*

Assigned *L.M.C. 5-21*

E. Wells
Engineer Surveyor to Lloyd's Register of Shipping.



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Foundation