

REPORT ON MACHINERY.

No. 7975

Received at London Office

Surveying Report 7th June 18 When made at Local Office Port of Belfast

Survey held at Belfast Date, First Survey 1-3-17 Last Survey 4-6-1918
on the H.M.S. "Windflower" (Number of Visits 143)

Built at Belfast By whom built Warkman Clark & Coy When built 1918

Engines made at Belfast By whom made - when made -

Horse Power 372 ³⁹³ Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted Yes

OWNERS, &c.—Description of Engines 4 Cylinder Triple Expansion No. of Cylinders 4 No. of Cranks 4

of Cylinders 23"-37"-42"-42" Length of Stroke 30" Revs. per minute 170 Dia. of Screw shaft 10.99 Material of S. 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 Yes

Is 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 Yes

between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive Yes If two Yes

shafts are fitted, is the shaft lapped or protected between the liners Length of stern bush 4'-6"

Dia. of Tunnel shaft 10.28 Dia. of Crank shaft journals 10.99 Dia. of Crank pin 11.37 Size of Crank web 20 1/2" Dia. of thrust shaft under

of Bilge pumps } Diameter of ditto None on Main Engines Stroke None Can one be overhauled while the other is at work

of Donkey Engines See Sizes of Pumps on Sheet No. and size of Suctions connected to both Bilge and Donkey pumps 9-2 1/2"

of Bilge Injections 1 sizes 8" Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room of size 2-3 1/2"

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

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

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 except one

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

all pipes are carried through the bunker ducts to Fore-Compartment How are they protected Wood casing

all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes

the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges Yes

the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door No - Trunks from deck worked from

MANUFACTURERS, &c.—(Letter for record 3) Manufacturers of Steel Spencer Sons & Co

Heating Surface of Boilers 6884 sq. ft. Forced Draft fitted Yes No. and Description of Boilers 2 - Single End Cylindrical

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 11-10-17 No. of Certificate 572

each boiler be worked separately Yes Area of fire grate in each boiler 86 sq. ft. No. and Description of Safety Valves to 2 - Direct Spring

Area of each valve 14'1" sq. Pressure to which they are adjusted 185 lbs Are they fitted with easing gear Yes

least distance between boilers or uptakes and bunkers or woodwork about 14" Mean dia. of boilers 16'-6" Length 11'-6" Material of shell plates Steel

Thickness 1 1/2" Range of tensile strength 31 3/4 to 35 3/4 Are the shell plates welded or flanged No Descrip. of riveting: cir. seam Lap & J.

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

percentages of strength of longitudinal joint 93.4 Working pressure of shell by rules 208 lbs Size of manhole in shell 16" x 12"

of compensating ring None No. and Description of Furnaces in each boiler 4 - Right Hand Material Steel Outside diameter 47 1/4"

Height of plain part 4" Thickness of plates 3 3/16" Description of longitudinal joint Weld No. of strengthening rings 0

Working pressure of furnace by the rules 192 lbs Combustion chamber plates: Material Steel Thickness: Sides 4 3/16" Back 4 1/16" Top 4 3/16" Bottom 1 3/16"

of stays to ditto: Sides 9 1/2" x 9 1/2" Back 9 1/2" x 9 1/2" Top 9 1/2" x 9 1/2" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 195 lbs

Material of stay Steel Area at smallest part 48 to 2 3/4 sq. in. supported by each stay 8 1/2 sq. in. Working pressure by rules 184 lbs End plates in steam space:

Material Steel Thickness 1 1/8" Pitch of stays 20 3/4" x 15 1/4" How are stays secured Nuts & Washers Working pressure by rules 181 lbs Material of stays Steel

at smallest part 9 5/8" x 6 1/4" sq. in. supported by each stay 3 1/6 sq. in. Working pressure by rules 202 lbs Material of Front plates at bottom Steel

Thickness 1 5/16" Material of Lower back plate Steel Thickness 3 3/16" Greatest pitch of stays 13 1/2" x 8" Working pressure of plate by rules 230 lbs

Material of tubes Steel Pitch of tubes 3 1/2" x 3 1/2" Material of tube plate Steel Thickness: Front 1 5/16" Back 3/4" Mean pitch of stays 10 1/2" x 7"

across wide water spaces 13 1/2" Working pressures by rules 185 lbs Girders to Chamber tops: Material Steel Depth and

Width of girder at center 7 1/4" x 6 3/4" x (3/4" x 2) Length as per rule 29 5/8" Distance apart 9'6 1/2" Number and pitch of stays in each 2-9"

Working pressure by rules 181 lbs Steam dome: description of joint to shell % of strength of joint

Material Steel Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes

Material of rivets Working pressure of shell by rules Crown plates Thickness How stayed

SUPERHEATER. 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

Material of Safety Valve Pressure to which each is adjusted Is Easing Gear fitted

12/ 9510-1571 M



IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— *See other sheet*

The foregoing is a correct description,
FOR WORKMAN, CLARK & CO., LIMITED.

M H Bell

Manufacturer.

Dates of Survey while building
During progress of work in shops -- *1st March 1917 to 4th June 1918*
During erection on board vessel ---
Total No. of visits *143*

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

Dates of Examination of principal parts—Cylinders *13* Slides *—* Covers *17* Pistons *—* Rods *—*
Connecting rods *31* Crank shaft *31* Thrust shaft *8* Tunnel shafts *6* Screw shaft *31* Propeller *4-2*
Stern tube *4-2-18* Steam pipes tested *17-5-18* Engine and boiler seatings *8-5-17* Engines holding down bolts *8-5-17*
Completion of pumping arrangements *8-7-17* Boilers fixed *8-5-17* Engines tried under steam *30-5-18*
Completion of fitting sea connections *6-4-18* Stern tube *11-4-18* Screw shaft and propeller *11-4-18*
Main boiler safety valves adjusted *29-5-18* Thickness of adjusting washers *15-20*
Material of Crank shaft *Steel* Identification Mark on Do. *LLOYDS* Material of Thrust shaft *Steel* Identification Mark on Do. *LLOYDS*
Material of Tunnel shafts *Steel* Identification Marks on Do. *LLOYDS* Material of Screw shafts *Steel* Identification Marks on Do. *LLOYDS*
Material of Steam Pipes *Steel* Test pressure *600 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 *Yes* If so, state name of vessel *H. M. S. "Springs"*

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

The machinery of this vessel has been constructed under Special Survey, and in accordance with the Rules; also to the approved Specifications. The materials and the workmanship are of good description, and on trial in Belfast Lough the machinery worked satisfactorily, when the Horse Power required by the Specification was obtained.

In my opinion, it is eligible for record + L.M.C. 6-18, with notation "Forced Draft" + "Electric Light"

It is submitted that
this vessel is eligible for
THE RECORD + L.M.C. 6.18. F.D.

The amount of Entry Fee ... £ *Inclusive* When applied for, *6/11 1918*
Special ... £ *19/0*
Donkey Boiler Fee ... £ *2/6* When received, *25/11/18*
Travelling Expenses (if any) £ *Report*

Committee's Minute *TUE JUN. 25. 1918*

Assigned *+ L.M.C. 6.18 F.D.*

MACHINERY CERTIFICATE
WRITTEN

Rpt. 9a.

Port of *Belfast*

Continuation of Report No. *7975* dated *4th June 1918* on the

H. M. S. "Bendflower"

1 *News Mono Air Pump* *13" x 28" x 15"*
2 *Main Feed* *10 1/2" x 8" x 21"*
1 *aux* *7" x 5" x 12"*
2 *Fire Bilge* *10" x 8" x 18"*
1 *aux* *4 1/2" x 5" x 12"*
1 *centrif. Circulating* *13" suction pipe*

Spare Gear

1 *Bronze Solid Propeller*
1 *set top end braces & bolts*
1 *bottom*
1 *pair main bearings*
1 *eccentric rod & strap*
1 *set thrust collars*
2 *piston rods & slippers*
1 *set lignum vitae strips, each size*
1 *slide valve spindle, each size*
36 *Condenser tubes*
2 *Main stop valve discs*
1 *set rings for each piston*
1 *set braces for link motion*
1 *set furnace beams for 1 boiler*
1/2 *firebars*
1 *set safety valve springs*
24 *plain tubes*
2 *stay*
1 *complete set gear for each auxiliary engine*
1 *set evaporator coils*
1 *set distiller coils, etc.*
and all gear to Lloyd's Rules.

R. F. Bennett

R. F. Bennett
27/6/18
Engineer Surveyor to Lloyd's Register of Shipping.