

## REPORT ON MACHINERY.

No. 25196

Received at London Office

Date of writing Report 5-7-12 When handed in at Local Office 10.7 1912 Port of Hull THU JUL 11 1912

No. in Survey held at Hull & Goole Date, First Survey Dec 21<sup>st</sup> Last Survey 5-7-12 19  
 Reg. Book. 499 on the steel screw trawler Vireo VIREO (Number of Visits 40)

Master Built at Goole By whom built Goole J.B. & Rpp 602<sup>h</sup> Tons { Gross 192  
 Net 72.78  
 When built 1912

Engines made at Hull By whom made Parlin 602<sup>h</sup> when made 1912-7

Boilers made at " By whom made " when made 1912-7

Registered Horse Power Owners Kelsall Bros & Bushing Ltd Port belonging to Hull

Nom. Horse Power as per Section 28 55 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders three No. of Cranks 3

Dia. of Cylinders 12"-21"-33" Length of Stroke 21" Revs. per minute Dia. of Screw shaft as per rule 7.88" Material of screw shaft iron  
 as fitted 7 3/4"

Is the screw shaft fitted with a continuous liner the whole length of the stern tube no, two liners 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 shaft painted Length of stern bush 36"

Dia. of Tunnel shaft as per rule 5.74" Dia. of Crank shaft journals as per rule 6.02" Dia. of Crank pin 6 1/2" Size of Crank webs 12 1/4 x 4 1/2" Dia. of thrust shaft under collars 6 1/8" Dia. of screw 9-6" Pitch of Screw 7'-0" No. of Blades 4 State whether moveable no Total surface 82 ft<sup>2</sup>

No. of Feed pumps one Diameter of ditto 2 1/2" Stroke 10" Can one be overhauled while the other is at work

No. of Bilge pumps one Diameter of ditto 2 1/2" Stroke 10" Can one be overhauled while the other is at work

No. of Donkey Engines one & 2 1/2" Sizes of Pumps 4 1/2 x 2 3/4 x 4" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room one 2" In Holds, &c. one 2" to fore hold, two 2" to tanks

& 2 1/2" yds. connected to all spaces

No. of Bilge Injections one sizes 3 1/2" Connected to condenser, to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size 2 1/2" Ejector

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 hold suction How are they protected wood 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

Dates of examination of completion of fitting of Sea Connections 18.5.12 of Stern Tube 22.5.12 Screw shaft and Propeller 22-5-12

Is the Screw Shaft Tunnel watertight Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Steel 6' of Scotland

Total Heating Surface of Boilers 900 Is Forced Draft fitted no No. and Description of Boilers one single ended

Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs Date of test 23-3-12 No. of Certificate 1886

Can each boiler be worked separately Area of fire grate in each boiler 24.5 ft<sup>2</sup> No. and Description of Safety Valves to each boiler two spring loaded Area of each valve 3.14 ft<sup>2</sup> Pressure to which they are adjusted 165 lbs Are they fitted with easing gear yes

Smallest distance between boilers and bunkers or woodwork 12" Mean dia. of boilers 126" Length 9'-6" Material of shell plates steel

Thickness 27/82 Range of tensile strength 28-32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams double

long. seams R.R. & B. 1 Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 5 3/8" Lap of plates on width of butt straps 11 1/2"

Per centages of strength of longitudinal joint rivets 87.6 plate 80.2 Working pressure of shell by rules 161 lbs Size of manhole in shell 16" x 12"

Size of compensating ring 8" x 27/32 No. and Description of Furnaces in each boiler two plain Material steel Outside diameter 34"

Length of plain part top 6 1/4" Thickness of plates crown 32/32 Description of longitudinal joint welded No. of strengthening rings

bottom 6 1/2" Working pressure of furnace by the rules 177 Combustion chamber plates: Material steel Thickness: Sides 9/8" Back 2 1/8" Top 9/8" Bottom 5/8"

Pitch of stays to ditto: Sides 9" x 4 1/2" Back 10" x 9" Top 9" x 7 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 165 lbs

Material of stays steel Diameter at smallest part 1.76" Area supported by each stay 76.5" Working pressure by rules 184 End plates in steam space:

Material steel Thickness 7/8" Pitch of stays 15" x 15" How are stays secured R. & W. Working pressure by rules 161 Material of stays steel

Diameter at smallest part 4.22" Area supported by each stay 225" Working pressure by rules 195 Material of Front plates at bottom steel

Thickness 7/8" Material of Lower back plate steel Thickness 7/8" Greatest pitch of stays 14 3/4 x 9" Working pressure of plate by rules 178

Diameter of tubes 3" Pitch of tubes 4 3/8" x 4 3/8" Material of tube plates steel Thickness: Front 7/8" Back 13/16" Mean pitch of stays 9"

Pitch across wide water spaces 14" Working pressures by rules 160 Girders to Chamber tops: Material steel Depth and thickness of girder at centre 7 1/4" x 1 1/2" Length as per rule 2-3 3/32 Distance apart 7 1/2" Number and pitch of stays in each two 9"

Working pressure by rules 225 Superheater or Steam chest; how connected to boiler riv Can the superheater be shut off and the boiler worked separately no Diameter 30" Length 30" Thickness of shell plates 5/8" Material steel Description of longitudinal joint riv Diam. of rivet holes 1" Pitch of rivets 3 1/4" Working pressure of shell by rules 370 Diameter of flue Material of flue plates Thickness

If stiffened with rings Distance between rings Working pressure by rules End plates: Thickness 5/8" How stayed dishes

Working pressure of end plates 160 Area of safety valves to superheater Are they fitted with easing gear



VERTICAL DONKEY BOILER— Manufacturers of Steel

No.	Description				
Made at	By whom made		When made	Where fixed	
Working pressure	tested by hydraulic pressure to	Date of test	No. of Certificate	Fire grate area	Description of Safety
Valves	No. of Safety Valves	Area of each	Pressure to which they are adjusted		Date of adjustment
If fitted with easing gear	If steam from main boilers can enter the donkey boiler		Dia. of donkey boiler		Length
Material of shell plates	Thickness	Range of tensile strength	Descrip. of riveting long seams		
Dia. of rivet holes	Whether punched or drilled	Pitch of rivets	Lap of plating	Per centage of strength of joint	
Working pressure of shell by rules	Thickness of shell crown plates	Radius of do.	No. of stays to do.	Dia. of stays	
Diameter of furnace Top	Bottom	Length of furnace	Thickness of furnace plates	Description of joint	
Working pressure of furnace by rules	Thickness of furnace crown plates	Radius of do.	Stayed by		
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey		

SPARE GEAR. State the articles supplied: Two top end bolts, Two bottom end bolts, Two main bearing bolts, one set of coupling bolts, one set of air, circulating, feed valve pump valves, Iron of various sizes & a quantity of bolts & nuts.

FOR EARLE'S  
SHIPBUILDING & ENGINEERING CO. LIMITED

The foregoing is a correct description,  
J. A. L. Thorpe  
SECRETARY Manufacturer.

Dates of Survey while building  
During progress of work in shops -- 1911: Dec 21. 1912: Jan 4, 6, 9, 16, 19, 22, 25, 29, Feb 2, 5, 8, 9, 16, 20, 21, 22, 23, 26, 27, Mar 5, 8, 9  
During erection on board vessel --- Mar 18, 21, 23, 27, 30, Apr 10, 11, 26, May 18, 21, 22, Jun 13, 15, 19, 20, July 2, 3.  
Total No. of visits 40

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

Dates of Examination of principal parts—Cylinders 22-2-12 Slides 22-2-12 Covers 22-2-12 Pistons 30-3-12 Rods 22-2-12  
Connecting rods 22-2-12 Crank shaft 27-3-12 Thrust shaft 10-4-12 Tunnel shafts / Screw shaft 10-4-12 Propeller 1-5-12  
Stern tube 10-4-12 Steam pipes tested 15-6-12 Engine and boiler seatings 18-5-12 Engines holding down bolts 15-6-12  
Completion of pumping arrangements 3-7-12 Boilers fixed 15-6-12 Engines tried under steam 3-7-12  
Main boiler safety valves adjusted 20-6-12 Thickness of adjusting washers *Pat 3/8 Starbed 3/8*  
Material of Crank shaft *steel* Identification Mark on Do. *2949WDH* Material of Thrust shaft *steel* Identification Mark on Do. *2975WDH*  
Material of Tunnel shafts / Identification Marks on Do. / Material of Screw shafts *iron* Identification Marks on Do. *2975WDH*  
Material of Steam Pipes *copper* Test pressure *400 lbs.*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The machinery of this vessel has been constructed under special survey in accordance with the approved plans & the rules of this Society, the material has been tested & the workmanship is good. The Boiler was tested by hydraulic pressure & found sound & tight. The machinery has been properly fitted on board & on completion was tested under steam & found to work satisfactorily. The safety valves adjusted under steam & tried for accumulation. In my opinion the vessel is eligible for the record + L.M.C. 7-12.*

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 7. 12. *J.A.L.*

The amount of Entry Fee .. £ 1 : 0 :  
Special .. £ 8 : 5 :  
Donkey Boiler Fee .. £ - : - :  
Travelling Expenses (if any) £ - : - :  
When applied for, 10/7 1912  
When received, 9/8 1912

Committee's Minute  
Assigned + L.M.C. 7/12  
FRI JUL 12 1912

*Frank L. Sturgeon*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.