

Abn. 12448

No. 8196

## REPORT ON MACHINERY.

Received at London Office

4.

Writing Report 19.12.19.10 When handed in at Local Office 22.12.1910 Port of DUNDEE

Survey held at Dundee Date, First Survey 24-5-1918 Last Survey 19.12.1919  
Book. on the Wood lighter "GREY SKY" (Number of Visits 24)

Built at Sandhaven By whom built J. G. Forbes. Tons } Gross  
When built 1919

Lines made at Dundee By whom made Cooper & Co. Ltd (No. 219/D. 151) when made 1919.  
Engines made at Glasgow By whom made A. W. Walglish when made 1919.  
Registered Horse Power Owners The Admiralty Port belonging to

Horse Power as per Section 28 43 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

FINES, &c.—Description of Engines Simple Expanding, Surface Condensing No. of Cylinders 3 No. of Cranks 3  
No. of Cylinders 9 1/2 15 1/2 36 Length of Stroke 18 Revs. per minute 140 Dia. of Screw shaft as per rule 5.45 Material of screw shaft as fitted 6

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  
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  
When the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive If two  
If two are fitted, is the shaft lapped or protected between the liners Length of stern bush 2'-0"

No. of Tunnel shaft as per rule 48 Dia. of Crank shaft journals as per rule 5.04 Dia. of Crank pin 5 1/4 Size of Crank webs 16 x 3 1/2 Dia. of thrust shaft under  
as fitted 5 1/4 Dia. of screw 6'-9" Pitch of Screw 8'-6" No. of Blades 4 State whether moveable No Total surface 18 sq. ft.

No. of Feed pumps One Diameter of ditto 2 1/2 Stroke 9 Can one be overhauled while the other is at work  
No. of Bilge pumps One Diameter of ditto 2 1/2 Stroke 9 Can one be overhauled while the other is at work  
No. of Donkey Engines One 1/2 hp Sizes of Pumps 5 1/4 x 3 1/2 x 5 + 2 1/2 hp No. and size of Suctions connected to both Bilge and Donkey pumps  
Engine Room One 2" In Holds, &c. One, forward, 2" One, aft, 2"

No. of Bilge Injections One size 2 1/2 Connected to condenser or to circulating pump Yes 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  
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  
How are they protected

How are pipes carried through the bunkers  
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 9.6.19. of Stern Tube 9.6.19. Screw shaft and Propeller 9.6.19.  
Is the Screw Shaft Tunnel watertight Is it fitted with a watertight door worked from

PLERS, &c.—(Letter for record) Manufacturers of Steel

Cal Heating Surface of Boilers 814 sq ft Is Forced Draft fitted No No. and Description of Boilers 1. S. E. Marine.  
Working Pressure 180 lb Test by hydraulic pressure to Date of test No. of Certificate

Can each boiler be worked separately Area of fire grate in each boiler No. and Description of Safety Valves to  
No boiler 2 lifting loaded Area of each valve 3.98 sq ft Pressure to which they are adjusted 185 lb Are they fitted with easing gear Yes  
Greatest distance between boilers on uptakes and bunkers or woodwork 7 1/2 Mean dia. of boilers Length Material of shell plates  
Thickness Range of tensile strength Are the shell plates welded or flanged Descrip. of riveting: cir. seams  
No. of seams Diameter of rivet holes in long. seams Pitch of rivets Lap of plates or width of butt straps  
Percentages of strength of longitudinal joint rivets Working pressure of shell by rules Size of manhole in shell  
No. of compensating ring plate No. and Description of Furnaces in each boiler Material 398 Outside diameter  
Length of plain part top Thickness of plates crown Description of longitudinal joint No. of strengthening rings  
bottom Thickness of plates bottom Working pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Top Bottom  
Working pressure of furnace by the rules Working pressure by rules Working pressure by rules End plates in steam space  
Pitch of stays to ditto: Sides Back Top If stays are fitted with nuts or riveted heads Working pressure by rules Material of stays  
Material of stays Diameter at smallest part Area supported by each stay Working pressure by rules Material of Front plates at bottom  
Material Thickness Pitch of stays How are stays secured Working pressure by rules Working pressure of plate by rules  
Diameter at smallest part Area supported by each stay Greatest pitch of stays Working pressure of plate by rules  
Thickness Material of Lower back plate Thickness Material of tube plates Thickness: Front Back Mean pitch of stays  
Diameter of tubes Pitch of tubes Working pressures by rules Girders to Chamber tops: Material Depth and  
Pitch across wide water spaces Length as per rule Distance apart Number and pitch of stays in each  
Thickness of girder at centre Superheater or Steam chest; how connected to boiler Can the superheater be shut off and the boiler worked  
Working pressure by rules Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet  
Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness  
Stiffened with rings Distance between rings Working pressure by rules End plates: Thickness How stayed  
Working pressure of end plates Area of safety valves to superheater Are they fitted with easing gear



IS A DONKEY BOILER FITTED? ☒

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. One set coupling bolts + nuts. One set valves for air, circulating feed + bilge pumps. 6 condenser tubes + ferrules. 6 cylinder cover studs + nuts. 6 junk ring bolts + nuts. 4 Assorted bolts + nuts.*

The foregoing is a correct description,  
For COOPER & GREIB LIMITED.

*James Greib*  
SECRETARY

Manufacturer.

Dates of Survey while building { During progress of work in shops - - 1918 MAY 24. JUNE 21. JULY 11. AUG 1. 6. 29. SEP 4. 11. 16. 24. OCT 11. NOV 4 DEC 6. 24.  
During erection on board vessel - - - 1919 JAN. 8. 10. 14. 22. 28. FEB. 10. 18. SEP 11.  
Total No. of visits 24. Is the approved plan of main boiler forwarded herewith ☒

Dates of Examination of principal parts—Cylinders 22.1.19 Slides 22.1.19 Covers 22.1.19 Pistons 22.1.19 Rods 17.1.19  
Connecting rods 17.1.19 Crank shaft 8.1.19 Thrust shaft 8.1.19 Tunnel shafts ☒ Screw shaft 8.1.19 Propeller 8.1.19  
Stern tube 8.1.19 Steam pipes tested 15.11.19 Engine and boiler seatings 6.11.19 Engines holding down bolts 13.11.19  
Completion of pumping arrangements 2.12.19 Boilers fixed 10.11.19 Engines tried under steam 2.12.19  
Main boiler safety valves adjusted 2.12.19 Thickness of adjusting washers  $\frac{7}{16}$  Port and Starboard.

Material of Crank shaft *Steel* Identification Mark on Do. 857 J.H.M. Material of Thrust shaft *Steel* Identification Mark on Do. 857 J.H.M.  
Material of Tunnel shafts ☒ Identification Marks on Do. ☒ Material of Screw shafts *Steel* Identification Marks on Do. 857 J.H.M.  
Material of Steam Pipes *S.D. Copper, 2 1/4" Bore x 9 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 *"Glacier" under Rpt. 8158.*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The engines of this vessel have been built under special survey, & in accordance with the specification. The materials and workmanship are sound & good.*

*The engines & boiler have been satisfactorily completed on board, the spare part checked and the pumping arrangements found in order. The machinery worked well under full working conditions, and is eligible in my opinion to have record of L.M.C. 12.19.*

It is submitted that  
this vessel is eligible for  
THE RECORD. + L.M.C. 12.19

The machinery of this vessel has now  
been tried under steam, in accordance with  
the Admiralty Specification, with satisfactory  
results & is eligible, in my opinion,  
to have record of L.M.C. 7.20 in the  
Register Book.

*M. H. Fraser*

\* £20.00 of installing fee due to Abn. %.

The amount of Entry Fee ... £	:	:	When applied for,
Special <i>Admiralty</i> ... £	9.0	:	22.12.19.19.
Donkey Boiler Fee ... £	4.10	:	When received,
Travelling Expenses (if any) £	:	:	27.1.19.20

*John H. Mackenzie*  
Engineer-Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

Assigned

+ L.M.C. 12.19

FRI JUL 30 1920

CERTIFICATE WRITTEN 30.7.20



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Foundation