Rpt. 4.

REPORT ON MACHINERY.

No. 30020.

Received at London Office WED. 3 MAY 1911

Date of writing Report ____ 19__ When handed in at Local Office 27/4/ 1911. Port of Glasgow.

No. in Reg. Book. ____ Survey held at ____ Date, First Survey 16th March/10 Last Survey 25th April 1911.

(Number of Visits 63)

on the S/S "Haildar" Tons Gross 4911. Net 3086.

Master J. Clingan Built at Glasgow By whom built C. Connell & Co. When built 1911

Engines made at Glasgow By whom made Denny Bros & Jackson Ld (365) when made 1911

Boilers made at ditto By whom made ditto when made 1911

Registered Horse Power ____ Owners ~~Anglo Eastern Nav Co Ltd~~ Messrs Turner & Co Port belonging to Liverpool

Nom. Horse Power as per Section 28 455 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 14.8 No. of Cranks 3

Dia. of Cylinders 25"- 42"- 70" Length of Stroke 48" Revs. per minute 65 Dia. of Screw shaft as per rule 14" as fitted 16" Material of screw shaft Iron

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 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 — Length of stern bush 64"

Dia. of Tunnel shaft as per rule 13.33/32 as fitted 13 1/2" Dia. of Crank shaft journals as per rule 13.9 as fitted 14" Dia. of Crank pin 14" Size of Crank webs 27" x 9 1/2" Dia. of thrust shaft under collars 14" Dia. of screw 18'-0" Pitch of Screw 19'-0" No. of Blades 4 State whether moveable Yes Total surface 99 sq ft

No. of Feed pumps 2. Diameter of ditto Weirs 7 & 9 1/2" Stroke — Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2. Diameter of ditto 4 1/2" Stroke 24" Can one be overhauled while the other is at work Yes

No. of Donkey Engines 3 Sizes of Pumps Ball 9+6+10, Donkey 5"+7"+12" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 4 at 3 1/2" Tunnel Well 2 1/2 In Holds, &c. 2 at 3 1/2" in each Hold.

No. of Bilge Injections 1 sizes 8" Connected to condenser or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size Yes 3 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 —

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 both

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 — 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

Dates of examination of completion of fitting of Sea Connections 8-3-11 of Stern Tube 8-3-11 Screw shaft and Propeller 8-3-11

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper Engine Room Platform

BOILERS, &c.—(Letter for record A.T.) Manufacturers of Steel Colville & James Dunlop Ltd

Total Heating Surface of Boilers 6324 sq ft Is Forced Draft fitted Yes No. and Description of Boilers 2 Single ended

Working Pressure 200 Tested by hydraulic pressure to 400 Date of test 24-11-10 No. of Certificate 10645

Can each boiler be worked separately Yes Area of fire grate in each boiler 57.5 sq ft No. and Description of Safety Valves to each boiler 2 Direct Spring Area of each valve 8.29 sq in Pressure to which they are adjusted 205 Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 12" Mean dia. of boilers 16'-1 9/16" Length 12'9" Material of shell plates S

Thickness 19/16" Range of tensile strength 29/32" Are the shell plates welded or flanged — Descrip. of riveting: cir. seams DR long. seams TRIPLES Diameter of rivet holes in long. seams 19/16" Pitch of rivets 10 1/2" ~~Lap of plates~~ or width of butt straps 1'-11"

Per centages of strength of longitudinal joint rivets 83.95 plate 85 1/2 Working pressure of shell by rules 225 Size of manhole in shell 16"x12"

Size of compensating ring McNeils No. and Description of Furnaces in each boiler 3 Corrugated Material S Outside diameter 4'-2"

Length of plain part top — bottom — Thickness of plates crown 23/32" bottom 23/32" Description of longitudinal joint welded No. of strengthening rings —

Working pressure of furnace by the rules 219 Combustion chamber plates: Material S Thickness: Sides 11/16" Back 11/16" Top 11/16" Bottom 1 1/16"

Pitch of stays to ditto: Sides 8 1/16" x 9 3/8" Back 8 7/8 x 8 7/16" Top 4 1/2 x 8 3/4" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 215

Material of stays Iron. ~~Diameter~~ area at smallest part 2.309 3.142 sq in Area supported by each stay 75-0" Working pressure by rules 223 End plates in steam space: ~~Material of stays Iron~~ Steel

Material S Thickness 15/32" Pitch of stays 18" x 15 3/4" How are stays secured DN Working pressure by rules 210 Material of stays S

~~Diameter~~ area. at smallest part 6.33 sq in Area supported by each stay 283.5 sq in Working pressure by rules 215 Material of Front plates at bottom S

Thickness 31/32" Material of Lower back plate S Thickness 31/32" Greatest pitch of stays 14 1/4" Working pressure of plate by rules 230

Diameter of tubes 2 1/2" Pitch of tubes 3 5/8" x 3 11/16" Material of tube plates S Thickness: Front 31/32 + 15/32" Back 27/32" Mean pitch of stays 8 5/8"

Pitch across wide water spaces 13 1/2" Working pressures by rules 215 Girders to Chamber tops: Material Iron Depth and thickness of girder at centre 11" x 1" (2) Length as per rule 3'-6" Distance apart 8 3/4" Number and pitch of stays in each 4 at 4 1/2"

Working pressure by rules 210 Superheater or Steam chest; how connected to boiler — Can the superheater be shut off and the boiler worked separately — Diameter — Length — Thickness of shell plates — Material — Description of longitudinal joint — Diam. of rivet holes — Pitch of rivets — Working pressure of shell by rules — Diameter of flue — Material of flue plates — Thickness — If 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 —

Rpt. 5a.

A.

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* *Rivets* *Plates*

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* *Stayed by*

Diameter of uptake *Thickness of uptake plates* *Thickness of water tubes* *Dates of survey*

SPARE GEAR. *State the articles supplied :—*

2 Connecting Rod bolts & Nuts for top End, ditto for bottom 2 Main Bearing bolts 1 Set of coupling bolts. 1 Set of Feed & Bilge Pump Valves. 1 Set of Piston Rings. a quantity of assorted bolts & nuts & Iron of various sizes. Tail Shaft. & Number of Propellor blades

The foregoing is a correct description,

For DUNSMUIR & JACKSON, Limited

James Fletcher *Manufacturer.*

Manager

Dates of Survey while building — *During progress of work in shops* — *During erection on board vessel* — *Total No. of visits* 63.

1910 Mar 16. 22. 31. Apr 7. 11. 14. 22. 25. May 2. 4. 13. 17. 26. June 7. 15. 22. July 4. 6. 11. 26. 30. Aug 8. 10. 15. 19. 23. 28. 30. Sept 7. 15. 20. 23. Oct. 1. 5. 10. 17. 21. 26. 28. 31. Nov 8. 15. 22. 24. Dec 7. 20. 1911 Jan 11. 11. 25. Feb. 9. Mar 2. 8. 17. 21. 24. 28. 30. Apr. 6. 10. 12. 14. 19. 28.

Is the approved plan of main boiler forwarded herewith Yes ✓

" " " *donkey* " " " Yes

***Dates of Examination of principal parts*—** *Cylinders* 15-8-10 *Slides* 23-8-10 *Covers* 23-8-10 *Pistons* 23-8-11 *Rods* 7-6-10

Connecting rods 7-6-10 *Crank shaft* 26-7-10 *Thrust shaft* 15-9-10 *Tunnel shafts* 20-9-10 *Screw shaft* 19-8-10 *Propeller* 1-10-10

Stern tube 1-10-10 *Steam pipes tested* 28-3-11 *Engine and boiler seatings* 8-3-11 *Engines holding down bolts* 12-4-11

Completion of pumping arrangements 14-4-11 *Boilers fixed* 6-4-11 *Engines tried under steam* 25-4-11

Main boiler safety valves adjusted 19-4-11 *Thickness of adjusting washers* St Bd PY 13/32 SY 3/8. PF Bds PF 7/16 SY 15/32 FY 1/2" Donkey Boiler AY 7/32"

Material of Crank shaft S *Identification Mark on Do* LLOYDS 365 WGM *Material of Thrust shaft* S *Identification Mark on Do* LLOYDS 365 WGM

Material of Tunnel shafts S *Identification Marks on Do* LLOYDS 366 WGM *Material of Screw shafts* S *Identification Marks on Do* LLOYDS 365 WGM

Material of Steam Pipes Iron *Test pressure* 600lbs

General Remarks *(State quality of workmanship, opinions as to class, &c.* These Engines & Boilers have been built under Special Survey in accordance with the Approved plans, & the workmanship & material are of good quality The Machinery of this Vessel is eligible in my opinion for the record of ✠ L.M.C 4-11

Glasgow

(The Surveyors are requested not to write on or below the space for Committee's Minute.)

Certificate (if required) to be sent to

It is submitted that this vessel is eligible for THE RECORD. ✠LMC 4-11

F.D.

J.S.M. 4/5/11.

The amount of Entry Fee	£ 3 : - :	When applied for,	27/4/11
Special	£ 42. : 15 :	When received,	29/4/11
Donkey Boiler Fee	£ : :		
Travelling Expenses (if any)	£ : :		

Wm Gordon-Dunclin

Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute Glasgow 2 - MAY. 1911

MACHINERY CERTIFICATE WRITTEN. 3/5/11

Assigned ✠LMC 4, 11.

Note Shaft. F.D.

Form No. 1A