Rpt. 4.

# REPORT ON MACHINERY.

No. _____

see Sld Rpt 25533

Received at London Office MON. DEC. 16. 1912

Date of writing Report _____ 19__ When handed in at Local Office _____ 19__ Port of Leith

No. in Reg. Book. Survey held at Alloa Date, First Survey _____ Last Survey _____ 19__

on the S/S ETHEL DUNCAN (Number of Visits _____)

Master _____ Built at ALLOA By whom built Mackay Bros. Tons { Gross / Net } When built

Engines made at Sunderland By whom made W.E Marine Eng. Co Ltd when made 1912.

Boilers made at _____ By whom made _____ when made _____

Registered Horse Power _____ Owners Messrs J.T Duncan & Co Ltd Port belonging to _____

Nom. Horse Power as per Section 28 _____ Is Refrigerating Machinery fitted for cargo purposes _____ Is Electric Light fitted _____

ENGINES, &c.—Description of Engines _____ No. of Cylinders _____ No. of Cranks _____

Dia. of Cylinders _____ Length of Stroke _____ Revs. per minute _____ Dia. of Screw shaft as per rule _____ as fitted _____ Material of screw shaft _____

Is the screw shaft fitted with a continuous liner the whole length of the stern tube _____ Is the after end of the liner made water tight in 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 _____

Dia. of Tunnel shaft as per rule _____ as fitted _____ Dia. of Crank shaft journals as per rule _____ as fitted _____ Dia. of Crank pin _____ Size of Crank webs _____ Dia. of thrust shaft under collars _____ Dia. of screw _____ Pitch of Screw _____ No. of Blades _____ State whether moveable _____ Total surface _____

No. of Feed pumps _____ Diameter of ditto _____ Stroke _____ Can one be overhauled while the other is at work _____

No. of Bilge pumps _____ Diameter of ditto _____ Stroke _____ Can one be overhauled while the other is at work _____

No. of Donkey Engines _____ Sizes of Pumps _____ No. and size of Suctions connected to both Bilge and Donkey pumps in Engine Room _____ In Holds, &c. _____

No. of Bilge Injections _____ sizes _____ Connected to condenser, or to circulating pump _____ Is a separate Donkey Suction fitted in Engine room & size _____

Are all the bilge suction pipes fitted with roses _____ Are the roses in Engine room always accessible _____ Are the sluices on Engine room bulkheads always accessible _____

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

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates _____ Are the Discharge Pipes above or below the deep water line _____

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel _____ 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 _____

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

Dates of examination of completion of fitting of Sea Connections 9/10/12 of Stern Tube _____ Screw shaft and Propeller _____

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 _____ Is Forced Draft fitted _____ No. and Description of Boilers _____

Working Pressure _____ Tested 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 each boiler _____ Area of each valve _____ Pressure to which they are adjusted _____ Are they fitted with easing gear _____

Shortest distance between boilers or uptakes and bunkers or woodwork _____ 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 _____

long. 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 _____ plate _____ Working pressure of shell by rules _____ Size of manhole in shell _____

Size of compensating ring _____ No. and Description of Furnaces in each boiler _____ Material _____ Outside diameter _____

Length of plain part top _____ bottom _____ Thickness of plates crown _____ bottom _____ Description of longitudinal joint _____ No. of strengthening rings _____

Working pressure of furnace by the rules _____ Combustion chamber plates: Material _____ Thickness: Sides _____ Back _____ Top _____ Bottom _____

Pitch of stays to ditto: Sides _____ Back _____ Top _____ If stays are fitted with nuts or riveted heads _____ Working pressure by rules _____

Material of stays _____ Diameter at smallest part _____ Area supported by each stay _____ Working pressure by rules _____ End plates in steam space: Material _____ Thickness _____ Pitch of stays _____ How are stays secured _____ Working pressure by rules _____ Material of stays _____

Diameter at smallest part _____ Area supported by each stay _____ Working pressure by rules _____ Material of Front plates at bottom _____

Thickness _____ Material of Lower back plate _____ Thickness _____ Greatest pitch of stays _____ Working pressure of plate by rules _____

Number of tubes _____ Pitch of tubes _____ Material of tube plates _____ Thickness: Front _____ Back _____ Mean pitch of stays _____

Stays across wide water spaces _____ Working pressures by rules _____ Girders to Chamber tops: Material _____ Depth and breadth of girder at centre _____ Length as per rule _____ Distance apart _____ Number and pitch of stays in each _____

Working pressure by rules _____ 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 _____

Stayed 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 _____

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W904-0184

## VERTICAL DONKEY BOILER— Manufacturers of Steel

No. Description When made Where fixed

Made at By whom made

Working pressure tested by hydraulic pressure to Date of test No. of Certificate Fire grate area Description of Safe

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 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 :—

*The foregoing is a correct description,*

Manufacturer.

Dates of Survey while building { During progress of work in shops - - / During erection on board vessel - - - / Total No. of visits

Is the approved plan of main boiler forwarded herewith

" " " donkey " " "

**Dates of Examination of principal parts**—Cylinders Slides Covers Pistons Rods

Connecting rods Crank shaft Thrust shaft Tunnel shafts Screw shaft Propeller

Stern tube Steam pipes tested Engine and boiler seatings 9/10/12 Engines holding down bolts

Completion of pumping arrangements Boilers fixed Engines tried under steam

Main boiler safety valves adjusted Thickness of adjusting washers

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 Test pressure

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

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

Certificate (if required) to be sent to

| | | | |
|---|---|---|---|
| The amount of Entry Fee .. £ | : | : | When applied for, 2/11/ 1912 |
| Special .. .. .. £ | . | : | |
| Donkey Boiler Fee .. .. £ | : | : | When received, 22/11/1912 |
| Travelling Expenses (if any) £ | : 12 | : | |

W. Dennis Engineer Surveyor to Lloyd's Register of British & Foreign S

**Committee's Minute** TUE. DEC. 17. 1912. TUE. JAN. 21. 1913

**Assigned** See minute on See Rpt. 255-33

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