

## REPORT ON BOILERS.

No. 11342

Received at London Office

-1 OCT. 1934

Date of writing Report 28/9/1934 When handed in at Local Office 28/9/1934 Port of Belfast

No. in Reg. Book 75271 Survey held at Belfast Date, First Survey 17/9/1934 Visits included in F.E. Mch. Last Survey 17/9/1934

on the Twirl Screw M/V DURHAM (Number of Visits 5) Gross 10892.66 Tons Net 6260.72

Built at Belfast By whom built Workman Clark (1928) Ltd Yard No. 533 When built 1934

Engines made at Belfast By whom made Workman Clark (1928) Ltd Engine No. 533 When made 1934

Boilers made at Belfast By whom made Workman Clark (1928) Ltd Boiler No. 533 When made 1934

Federal Steam Navigation Co. Ltd Port belonging to London

## TICAL DONKEY BOILER.

at Belfast By whom made Workman Clark (1928) Ltd Boiler No. 533 When made 1934 Where fixed in motor room Shelter Deck

Manufacturers of Steel Bolvilles Ltd. Glasgow.

Heating Surface of Boilers 2600 sq. ft. Is forced draught fitted Yes Coal or Oil fired Oil fired and Exhaust gas

and Description of Boilers Two Clarkson Thimble Type Waste Heat Working pressure 120 lb sq. in.

Tested by hydraulic pressure to 230 lb sq. in. Date of test 21/7/34 No. of Certificate 988

of Firegrate in each Boiler — No. and Description of safety valves to each boiler Two spring loaded high lift

of each set of valves per boiler per rule 2 @ 3.55 sq. in. Pressure to which they are adjusted 120 lb sq. in. Are they fitted with easing gear Yes

whether steam from main boilers can enter the donkey boiler — Smallest distance between boiler or uptake and bunkers —

odorwork — Is oil fuel carried in the double bottom under boiler — Smallest distance between base of boiler and tank top plating —

Is the base of the boiler insulated — Largest internal dia. of boiler 8'-4 1/2" Height 24'-3" overall

plates: Material Steel Tensile strength 28-32 Tons Thickness 9/16"

the shell plates welded or flanged at butt ends Description of riveting: circ. seams Single Top Double bottom long. seams Double

of rivet holes in circ. seams 63" Pitch of rivets 2 1/4" and 3" Percentage of strength of circ. seams plate 58.3 rivets 44.8 of Longitudinal joint plate 77.0 rivets 75.5 combined

Working pressure of shell by rules 122 lb sq. in. Thickness of butt straps outer 1/2" inner 1/2"

Crown: Whether complete hemisphere, dished partial spherical, or flat Dished partial spherical Material Steel

ile strength 26-30 tons Thickness 1 5/16" Radius 7'-6" Working pressure by rules 125 lb sq. in.

ription of Furnace: Plain, spherical, or dished crown Dished Material Steel Tensile strength 26-30 tons

ness 1 3/16" External diameter top 7'-6" bottom 7'-6" Length as per rule — Working pressure by rules —

of support stays circumferentially — and vertically — Are stays fitted with nuts or riveted over —

eter of stays over thread — Radius of spherical or dished furnace crown 7'-6" Working pressure by rule 160 lb sq. in.

ness of Ogee Ring — Diameter as per rule — Working pressure by rule —

ustion Chamber: Material Steel Tensile strength 26-30 tons Thickness of top plate 1 3/16"

us if dished 5'-0" Working pressure by rule 160 lb sq. in. Thickness of chamber 3" Diameter if circular 5'-6" internal

th as per rule 12'-9 1/4" Pitch of stays 4 3/8 ver. Thimbles 3 Are stays fitted with nuts or riveted over —

Diameter of thimbles stays over thread 4" Thickness 5 BWG Working pressure of back plate by rules —

Tube Plates: Material — Tensile strength — Thickness — Mean pitch of stay tubes in nests —

If comprising shell, Dia. as per rule — Pitch in outer vertical rows — Dia. of tube holes FRONT — BACK —

Is each alternate tube in outer vertical rows a stay tube — Working pressure by rules —

Girders to combustion chamber tops: Material — Tensile strength —

Depth and thickness of girder at centre — Length as per rule —

Distance apart — No. and pitch of stays in each — Working pressure by rule —



Crown stays: Material \_\_\_\_\_ Tensile strength \_\_\_\_\_ Diameter { at body of stay, \_\_\_\_\_  
or  
over threads \_\_\_\_\_  
No. of threads per inch \_\_\_\_\_ Area supported by each stay \_\_\_\_\_ Working pressure by rules \_\_\_\_\_

Screw stays: Material \_\_\_\_\_ Tensile strength \_\_\_\_\_ Diameter { at turned off part, \_\_\_\_\_  
or  
over threads \_\_\_\_\_ No. of threads per inch \_\_\_\_\_  
Area supported by each stay \_\_\_\_\_ Working pressure by rules \_\_\_\_\_ Are the stays drilled at the outer ends \_\_\_\_\_

Tubes: Material \_\_\_\_\_ External diameter { plain \_\_\_\_\_  
stay \_\_\_\_\_ Thickness { \_\_\_\_\_  
No. of threads per inch \_\_\_\_\_ Pitch of tubes \_\_\_\_\_ Working pressure by rules \_\_\_\_\_

Manhole Compensation: Size of opening in shell plate 16" x 12" Section of compensating ring 4 3/4" x 1 1/16" No. of rivets and diameter  
of rivet holes 410 - 15/16" Outer row rivet pitch at ends 3.28" Depth of flange if manhole flanged Shell crown 3 1/2"

Uptake: External diameter 3'-5 1/2" Thickness of uptake plate 3/4"

Cross Tubes: No. \_\_\_\_\_ External diameters { \_\_\_\_\_ Thickness of plates \_\_\_\_\_

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with Yes

The foregoing is a correct description,  
pro WORKMAN CLARK (1928) LIMITED.

A. Penningham  
Secretary.

Dates of Survey { During progress of work in shops - - Visits included in First Entry Is the approved plan of boiler forwarded herewith 16/11/33  
while building { During erection on board vessel - - Machinery Report Total No. of visits \_\_\_\_\_  
(If not state date of approval.)

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers were constructed under Special Survey and to an approved design. They were tested by hydraulic pressure in accordance with the Rules, were efficiently installed and fastened on an upper deck in the main motor room. The safety valves were adjusted under steam. No appreciable accumulation was noted during the test under oil firing & exhaust gas firing conditions. The workmanship and materials are good and the boilers, in my opinion, are eligible for use on a classed vessel.

Survey Fee ... £ 17.6 When applied for, 28<sup>th</sup> Sept 1934  
Travelling Expenses (if any) £ 4.4 When received, 19

Committee's Minute  
Assigned

See other J.E. Bel. 11372

FRI. 12 OCT 1934

John Rundle  
Engineer Surveyor to Lloyd's Register of Shipping.



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Foundation