

# REPORT ON BOILERS.

No. 31482

Received at London Office 11 SEP. 1934

Date of writing Report 6 Sep 1934 When handed in at Local Office Port of Sunderland.

No. in Survey held at Sunderland. Date, First Survey Last Survey 3rd Sep. 1934.

on the Steel Screw Steamer "WYCHWOOD" (Number of Visits 2494. Gross Tons 1558. Net 1558.)

Master Built at Sunderland By whom built S.P. Austin & Sons Ltd. Yard No. 333. When built 1934.

Engines made at Sunderland By whom made North Eastern Mar. Eng. Co. Ltd. Engine No. 2805 When made 1934.

Boilers made at Sunderland By whom made North Eastern Mar. Eng. Co. Ltd. Boiler No. 2805 When made 1934.

Indicated Horse Power 238. Owners Wm. Lance Lenwick & Co. Ltd. Port belonging to London.

## MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel The Steel Company of Scotland Ltd. (Letter for Record S)

Total Heating Surface of Boilers 3400 sq. ft. Is forced draught fitted Yes. Coal or Oil fired Coal.

No. and Description of Boilers Two single ended multitubular Working Pressure 200.

Tested by hydraulic pressure to 350 Date of test 4.5.34 No. of Certificate 4145 Can each boiler be worked separately Yes.

Area of Firegrate in each Boiler 32 1/2 sq. ft. No. and Description of safety valves to each boiler 2 direct spring.

Area of each set of valves per boiler (per Rule 9.88 as fitted 11.86 sq. ft.) Pressure to which they are adjusted 200 Are they fitted with easing gear Yes.

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler

Smallest distance between boilers or uptakes and bunkers or woodwork 2'-0" Is oil fuel carried in the double bottom under boilers No.

Smallest distance between shell of boiler and tank top plating 2'-9" Is the bottom of the boiler insulated Yes.

Largest internal dia. of boilers 12'-9 3/4" Length 11'-0" Shell plates: Material Steel Tensile strength 29.33.

Thickness 1 1/8" Are the shell plates welded or flanged No. Description of riveting: circ. seams end 3 1/2" inter. D.R. Lap.

g. seams T.R.D.B.S. Diameter of rivet holes in (circ. seams 13/16" long. seams 13/16" Pitch of rivets 8 3/8"

Percentage of strength of circ. end seams (plate 66 rivets 44.3 Percentage of strength of circ. intermediate seam (plate rivets 85.8

Percentage of strength of longitudinal joint (plate rivets 86.8 combined 88.9 Working pressure of shell by Rules 200.

Thickness of butt straps (outer 1/8" inner 1" No. and Description of Furnaces in each Boiler Three corrugated (Brighton).

Material Steel Tensile strength 26-30 Smallest outside diameter 2'-9 23/32"

Length of plain part (top bottom) Thickness of plates (crown 3 1/16" bottom 3/16" Description of longitudinal joint welded.

Dimensions of stiffening rings on furnace or flue bottom Working pressure of furnace by Rules 206.

Stays in steam space: Material Steel Tensile strength 26-30 Thickness 1 1/8" Pitch of stays 1'-4 1/2" x 1'-5 3/4"

How are stays secured Double nuts. Working pressure by Rules 200.

Stays plates: Material (front back) Steel Tensile strength 26-30 Thickness 15/16" 25/32"

Span pitch of stay tubes in nests 10.4 Pitch across wide water spaces 1'-2 1/2" Working pressure (front back) 204. 202.

Stays to combustion chamber tops: Material Steel Tensile strength 28-32 Depth and thickness of girder

Centre 3" x 1 1/2" Length as per Rule 2'-5 15/16" Distance apart 9" No. and pitch of stays

Each 2 @ 9 3/8" Working pressure by Rules 204. Combustion chamber plates: Material Steel

Tensile strength 26-30 Thickness: Sides 3/4" Back 25/32" Top 3/4" Bottom 3/4"

Pitch of stays to ditto: Sides 10 1/4" x 9 3/8" Back 10" x 9 3/8" Top 9" x 9 3/8" Are stays fitted with nuts or riveted over nuts.

Working pressure by Rules 205, 200, 233 Front plate at bottom: Material Steel Tensile strength 26-30

Thickness 15/16" Lower back plate: Material Steel Tensile strength 26-30 Thickness 1/8"

Pitch of stays at wide water space 1'-2 5/8" Are stays fitted with nuts or riveted over nuts.

Working Pressure 202. Main stays: Material Steel Tensile strength 28-32.

At body of stay, 2 5/8" No. of threads per inch 6 Area supported by each stay 14 3/4" x 16 1/2"

Over threads 3" Screw stays: Material Steel Tensile strength 26-30.

Working pressure by Rules 203. At turned off part, 2 1/8", 2", 1 7/8", 1 3/4" No. of threads per inch 9. Area supported by each stay 12.8 x 9.8

Over threads 2 1/8", 2", 1 7/8", 1 3/4" 10.9 x 9.8

10.35 x 9.34

9.0 x 9.34



Working pressure by Rules **225** Are the stays drilled at the outer ends **no.** Margin stays: Diameter { At turned off part, **2 1/8"** or Over threads **2 1/8"** ✓  
No. of threads per inch **9.** Area supported by each stay **12.8" x 9.8"** Working pressure by Rules **225.**  
Tubes: Material **S.D. Steel** External diameter { Plain **3 1/4"** Thickness **3/8" 5/16" 1/4"** No. of threads per inch **9.** ✓  
Pitch of tubes **4 1/2"** Working pressure by Rules **Manhole compensation: Size of opening**  
shell plate **1/6" x 12"** Section of compensating ring **2 1/2" x 2 1/2" x 1 1/2"** No. of rivets and diameter of rivet holes **32 @ 1 1/32"**  
Pitch at ends **9 1/4"** Depth of flange if manhole flanged ✓ **Steam Dome: Material none.** ✓  
Tensile strength Thickness of shell Description of longitudinal joint  
Diameter of rivet holes Pitch of rivets Percentage of strength of joint { Plate Rivets  
Internal diameter Working pressure by Rules Thickness of crown No. and diameter  
stays Inner radius of crown Working pressure by Rules  
How connected to shell Size of doubling plate under dome Diameter of rivet holes and  
of rivets in outer row in dome connection to shell

Type of Superheater **A.E.M. Smoke tube** Manufacturers of { Tubes **Slender & Lloyd Ltd** Steel castings **Leeds & Co Ltd**  
Number of elements **60** Material of tubes **Solid drawn Steel** Internal diameter and thickness of tubes **1 7/8" x 2 1/2"**  
Material of headers **Forged steel** Tensile strength **26-30** Thickness **1 1/8"** Can the superheater be shut off  
the boiler be worked separately **Yes.** Is a safety valve fitted to every part of the superheater which can be shut off from the boiler **Yes.**  
Area of each safety valve **3.1416 sq.** Are the safety valves fitted with easing gear **Yes.** Working pressure as  
Rules **200.** Pressure to which the safety valves are adjusted **200** Hydraulic test pressure  
tubes **1500 lbs/sq.** castings **600 lbs/sq.** and after assembly in place **500 lbs/sq.** Are drain cocks or valves  
to free the superheater from water where necessary **Yes.**

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with **Yes.**

FOR THE NORTH EASTERN MARINE ENGINEERING CO. LTD  
**Wm. K. Berry.** MANAGER

Dates of Survey { During progress of work in shops -- **Please see Machinery** Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)  
while building { During erection on board vessel -- **Report.** Total No. of visits

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

These boilers have been Constructed under Special Survey in accordance with the approved Plan & the Rules of the Society. The materials & workmanship are good. On completion the boilers have been Satisfactorily tested by hydraulic pressure in accordance with the Rules, found tight & sound, securely fixed on board the vessel, & run under steam, safety valves adjusted to working pressure & accumulation test carried out Satisfactorily. In recommendation please see Machinery Report.

Survey Fee ... **Charged a** When applied for, **192**  
Travelling Expenses (if any) **Machinery Rpt.** When received, **192**

**Wm. K. Berry.**  
Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute **FRI. 14 SEP 1934**

Assigned **See J. E. Rpt.**