

## REPORT ON BOILERS.

No. 34834

Received at London Office.

12 FEB 1948

Date of writing Report.....19..... When handed in at Local Office.....6th February 1948..... Port of.....Sunderland.....  
 No. in Survey held at.....SUNDERLAND..... Date, First Survey.....see Rpt 4..... Last Survey.....19.....  
 Reg. Book.....S/S "BRANKSOME"..... (Number of Visits.....) Tons { Gross.....1438.03  
 on the..... Net.....733.33  
 Master..... Built at.....SUNDERLAND..... By whom built.....S.P. AUSTIN & SON LTD...... Yard No.....391..... When built.....1948.....  
 Engines made at.....SUNDERLAND..... By whom made.....NORTH EASTERN MARINE ENG. CO. LD...... Engine No.....4169..... When made.....1948.....  
 Boilers made at.....SUNDERLAND..... By whom made.....NORTH EASTERN MARINE ENG. CO. LD...... Boiler No.....4169..... When made.....1948.....  
 Nominal Horse Power.....230..... Owners.....STEPHENSON CLARKE..... Port belonging to.....LONDON.....

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

Manufacturers of Steel.....COLNIBLES LTD...... (Letter for Record.....S.....)  
 Total Heating Surface of Boilers.....2666 sq. ft...... Is forced draught fitted.....YES..... Coal or Oil fired.....COAL.....  
 No. and Description of Boilers.....TWO SINGLE ENDED MULTITUBULAR..... Working Pressure.....220 lbs./sq. in.  
 Tested by hydraulic pressure to.....380 lbs./sq. in...... Date of test.....14.10.47..... No. of Certificate.....4667..... Can each boiler be worked separately.....YES.....  
 Area of Firegrate in each Boiler.....28.25 sq. ft...... No. and Description of safety valves to each boiler.....TWO - DOUBLE ENCLOSED SPRING.....  
 Area of each set of valves per boiler { per Rule.....7.22 sq. ft.  
 as fitted.....7.94 sq. ft...... Pressure to which they are adjusted.....220 lbs./sq. in...... 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.....4'-2"..... Is oil fuel carried in the double bottom under boilers.....NO.....  
 Smallest distance between shell of boiler and tank top plating.....1'-6"..... Is the bottom of the boiler insulated.....YES.....  
 Largest internal dia. of boilers.....11'-9 1/16"..... Length.....11'-0"..... Shell plates: Material.....STEEL..... Tensile strength.....29/33 T.  
 Thickness.....1 5/32"..... Are the shell plates welded or flanged.....NO..... Description of riveting: circ. seams { end.....D.R. L.P.  
 inter.....3'-3"  
 long. seams.....TR. DBS..... Diameter of rivet holes in { circ. seams.....1 5/32"  
 long. seams.....1 5/32"..... Pitch of rivets { .....7'-5"  
 Percentage of strength of circ. end seams { plate.....64.8%  
 rivets.....43.6%..... Percentage of strength of circ. intermediate seam { plate.....  
 rivets.....  
 Percentage of strength of longitudinal joint { plate.....84.73%  
 rivets.....89.2%..... Working pressure of shell by Rules.....220.7 lbs./sq. in.  
 combined.....87.3%  
 Thickness of butt straps { outer.....29/32"  
 inner.....1 1/32"..... No. and Description of Furnaces in each Boiler.....3 - DEIGHTON TYPE.....  
 Material.....STEEL..... Tensile strength.....26/30 T...... Smallest outside diameter.....2'-8 1/4"  
 Length of plain part { top.....5 1/4"  
 bottom.....5 1/4"..... Thickness of plates { crown.....1/2"  
 bottom.....1/2"..... Description of longitudinal joint.....FIRE WELD  
 Dimensions of stiffening rings on furnace or c.c. bottom.....  
 Working pressure of furnace by Rules.....223 lbs./sq. in.  
 End plates in steam space: Material.....STEEL..... Tensile strength.....26/30 T...... Thickness.....1 1/16"..... Pitch of stays.....14 3/4" x 10"  
 How are stays secured.....NUTS INTERNAL & EXTERNAL..... Working pressure by Rules.....220.7 lbs./sq. in.  
 Tube plates: Material { front.....STEEL  
 back.....STEEL..... Tensile strength { .....26/30 T.  
 Thickness { .....25/32"  
 Mean pitch of stay tubes in nests.....9'-7"..... Pitch across wide water spaces.....14" x 8 1/4"..... Working pressure { front.....227 lbs./sq. in.  
 back.....232 lbs./sq. in.  
 Girders to combustion chamber tops: Material.....STEEL..... Tensile strength.....29/33 T...... Depth and thickness of girder  
 at centre.....8'-5" x 2 @ 29/32"..... Length as per Rule.....32"..... Distance apart.....9 1/2"..... No. and pitch of stays  
 in each.....2 @ 10"..... Working pressure by Rules.....240 lbs./sq. in...... Combustion chamber plates: Material.....STEEL  
 Tensile strength.....26/30 T...... Thickness: Sides.....25/32"..... Back.....3/4"..... Top.....25/32"..... Bottom.....25/32"  
 Pitch of stays to ditto: Sides.....9 1/2" x 10"..... Back.....9 1/2" x 9 1/4"..... Top.....9 1/2" x 10"..... Are stays fitted with nuts or riveted over.....SIDE STAYS NUTTED INTERNALLY ONLY  
 Working pressure by Rules.....225 lbs./sq. in...... Front plate at bottom: Material.....STEEL..... Tensile strength.....26/30 T.  
 Thickness.....1 1/16"..... Lower back plate: Material.....STEEL..... Tensile strength.....26/30 T...... Thickness.....1 1/16"  
 Pitch of stays at wide water space.....14 1/2" x 9 1/2"..... Are stays fitted with nuts or riveted over.....NUTS  
 Working pressure.....311 lbs./sq. in...... Main stays: Material.....STEEL..... Tensile strength.....28/32 T.  
 Diameter { At body of stay.....2 3/4"  
 Over threads.....3 1/2"..... No. of threads per inch.....6..... Area supported by each stay.....271 sq. in.  
 Working pressure by Rules.....241 lbs./sq. in...... Screw stays: Material.....STEEL..... Tensile strength.....26/30 T.  
 Diameter { At turned off part.....2 1/8"  
 Over threads.....2 1/8"..... No. of threads per inch.....9..... Area supported by each stay.....9 1/2" x 9 1/4"



Working pressure by Rules. 243 LBS/IN<sup>2</sup> Are the stays drilled at the outer ends. NO Margin stays: Diameter { At turned off part, 2 1/8" Over threads 2 1/8"  
No. of threads per inch 9 Area supported by each stay 11.625" x 9.5" Working pressure by Rules 258 LBS/IN<sup>2</sup>  
Tubes: Material Steel External diameter { Plain 3" Stay 3" Thickness { 3/8" 5/16" 1/4" No. of threads per inch 9  
Pitch of tubes 8 1/2" x 8 1/4" Working pressure by Rules 236 LBS/IN<sup>2</sup> Manhole compensation: Size of opening in  
shell plate ✓ Section of compensating ring ✓ No. of rivets and diameter of rivet holes ✓  
Outer row rivet pitch at ends ✓ Depth of flange if manhole flanged ✓ Steam Dome: Material ✓  
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 of  
stays ✓ Inner radius of crown ✓ Working pressure by Rules ✓  
How connected to shell ✓ Size of doubling plate under dome ✓ Diameter of rivet holes and pitch  
of rivets in outer row in dome connection to shell ✓

Type of Superheater N.E.M. SMOKE TUBE TYPE Manufacturers of { Tubes TUBES LTD. Steel forgings APPLEBY, FRODINGHAM, STEEL & CO. Steel castings ✓  
Number of elements 34 IN EACH BOILER Material of tubes SOLID DRAWN STEEL Internal diameter and thickness of tubes 1 5/8" x 2 1/2" M.  
Material of headers MILD STEEL Tensile strength 26/30T. Thickness 1 1/4" x 1 1/8" Can the superheater be shut off and  
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 5.14 IN<sup>2</sup> Are the safety valves fitted with easing gear YES Working pressure as per  
Rules 220 LBS/IN<sup>2</sup> Pressure to which the safety valves are adjusted 220 LBS/IN<sup>2</sup> Hydraulic test pressure  
tubes 1500 LBS/IN<sup>2</sup> forgings and castings 660 LBS/IN<sup>2</sup> and after assembly in place 440 LBS/IN<sup>2</sup> Are drain cocks on  
valves fitted 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 THE NORTH EASTERN MARINE ENGINEERING CO. (1938) LTD.

The foregoing is a correct description,

W. H. HARRIS MANUFACTURER  
RESIDENT MANAGER

Dates of Survey while building { During progress of work in shops - - See Rpx 4 Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)  
During erection on board vessel - - -  
Total No. of visits ✓

Is this Boiler a duplicate of a previous case NO If so, state Vessel's name and Report No. ✓

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

These boilers have been constructed under Special Survey, and in accordance with the Society's Rules.  
Approved plans and Secretary's Letter.  
The workmanship and materials are good.  
These boilers have been efficiently fitted on board the vessel, examined under steam, and their safety valves  
adjusted to working pressure 220 LBS/IN<sup>2</sup>; accumulation test carried out with satisfactory results.

Survey Fee See Mch 4 Report £ : ✓ : } When applied for, 19  
Travelling Expenses (if any) £ : ✓ : } When received, 19

W. H. HARRIS  
Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute FRI. 12 MAR 1948

Assigned For minute see J.E. Rpb



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Foundation