

REPORT ON BOILERS.

No. 17756

Received at London Office

OCT 28 1937

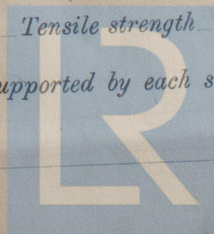
Date of writing Report 26-10-1937 When handed in at Local Office 27-10-1937 Port of West Hartlepool

No. in Survey held at West Hartlepool Date, First Survey 11th March, 1932 Last Survey 20th October, 1937
 Reg. Book. "G. S. Pivanos" (Number of Visits 69) Gross 4835
 on the Tons Net 2867

Master ✓ Built at West Hartlepool By whom built Wm. Gray & Co. Ltd. Yard No. 1078 When built 1937
 Engines made at West Hartlepool By whom made Benthal Marine Engine Works Engine No. 1078 When made 1937
 Boilers made at West Hartlepool By whom made Benthal Marine Engine Works Boiler No. 1078 When made 1937
 Nominal Horse Power 466 Owners S. P. Livanos & Livanos Maritime Co. Ltd. Port belonging to Ghios

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

Manufacturers of Steel Colvilles Ltd. Glasgow (Letter for Record S.)
 Total Heating Surface of Boilers 5368 sq. ft. Is forced draught fitted yes. Coal or Oil fired coal
 No. and Description of Boilers Two, single ended Working Pressure 225 lbs.
 Tested by hydraulic pressure to 388 lbs. Date of test 7-9-37 No. of Certificate 3874 Can each boiler be worked separately yes.
 Area of Firegrate in each Boiler 51.75 sq. ft. No. and Description of safety valves to each boiler 2. Lockburn's High Lift. 2 1/2" Dia.
 Area of each set of valves per boiler {per Rule 8.5 sq. ins. Pressure to which they are adjusted 230 lbs. Are they fitted with easing gear yes.
 {as fitted 9.8 sq. ins.
 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 Boilers 12" Uptakes 16" Is oil fuel carried in the double bottom under boilers no.
 Smallest distance between shell of boiler and tank top plating 30" Is the bottom of the boiler insulated yes.
 Largest internal dia. of boilers 15'6" Length 11'6" Shell plates: Material steel Tensile strength 31-35 tons
 Thickness 17/16" Are the shell plates welded or flanged ✓ Description of riveting: circ. seams {end D.R. Lap
 long. seams Y.R.D.B.S. Diameter of rivet holes in {circ. seams 1 1/2" Pitch of rivets {inter. single stake.
 {long. seams 19/16"
 Percentage of strength of circ. end seams {plate 62.5 Percentage of strength of circ. intermediate seam {plate
 {rivets 45.6
 Percentage of strength of longitudinal joint {plate 84.75 Working pressure of shell by Rules 226 lbs.
 {rivets 90.5
 {combined 87.61
 Thickness of butt straps {outer 1 1/8" No. and Description of Furnaces in each Boiler 3. Deighton type
 {inner 1 1/4" Tensile strength 26-30 tons Smallest outside diameter 46 5/16"
 Material steel Thickness of plates {crown 23/32 Description of longitudinal joint welded.
 Length of plain part {top ✓ {bottom 23/32 Working pressure of furnace by Rules 228 lbs.
 Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure by Rules 226.6 lbs.
 End plates in steam space: Material steel Tensile strength 26-30 tons Thickness 1 1/32 Pitch of stays 20 1/2" x 20"
 How are stays secured Double nuts & washers. Working pressure by Rules 226.6 lbs.
 Tube plates: Material {front steel Tensile strength 26-30 tons Thickness {7/8"
 {back 10 1/2" Pitch across wide water spaces 14" x 8 1/4" Working pressure {front 262 lbs.
 {back 251 lbs.
 Girders to combustion chamber tops: Material steel Tensile strength 28-32 tons Depth and thickness of girder
 at centre 9 1/4" 7/8" double plates Length as per Rule 33.4" Distance apart 9 1/4" No. and pitch of stays
 in each 3 8 3/8" Working pressure by Rules 230 lbs. Combustion chamber plates: Material steel
 Tensile strength 26-30 tons Thickness: Sides 23/32 Back 23/32 Top 23/32 Bottom 27/32
 Pitch of stays to ditto: Sides 8 3/4" x 8 3/4" Back 8 3/8" x 9 1/4" Top 8 3/8" x 9 1/4" Are stays fitted with nuts or riveted over nuts.
 Working pressure by Rules 237 lbs. 233 lbs. Front plate at bottom: Material steel Tensile strength 26-30 tons
 Thickness 1" Lower back plate: Material steel Tensile strength 26-30 tons Thickness 15/16"
 Pitch of stays at wide water space 14 1/4" x 9 1/4" Are stays fitted with nuts or riveted over nuts.
 Working Pressure 250 lbs. Main stays: Material steel Tensile strength 28-32 tons
 Diameter {At body of stay, 3 1/2" No. of threads per inch 6 Area supported by each stay 410 sq. ins.
 {Over threads 231.4 lbs. Screw stays: Material steel Tensile strength 26-30 tons
 Working pressure by Rules 231.4 lbs. No. of threads per inch 9 Area supported by each stay 77.5 sq. ins.
 Diameter {At turned off part, 1 3/4" No. of threads per inch 9 Area supported by each stay 77.5 sq. ins.
 {Over threads 1 3/4"



Working pressure by Rules 234 lbs Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, or Over threads 2"
No. of threads per inch 9 Area supported by each stay 104.64 sq ins Working pressure by Rules 236.2 lbs
Tubes: Material steel External diameter { Plain 3" Stay 3" Thickness { 8 W.G. 3/16" 1/4" 5/16" No. of threads per inch 9
Pitch of tubes 4 1/4" x 4 1/8" Working pressure by Rules 250 Manhole compensation: Size of opening in
end 16" x 12" Section of compensating ring ✓ No. of rivets and diameter of rivet holes ✓
Outer row rivet pitch at ends ✓ Depth of flange if manhole flanged Bolt 3 3/8" Top 4/8" 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 Engin
stays ✓ Inner radius of crown ✓ Working pressure by Rules ✓
How connected to shell ✓ Size of doubling plate under dome ✓ Diameter of rivet holes and pitc
of rivets in outer row in dome connection to shell ✓

Type of Superheater Smoke tube Manufacturers of { Tubes Stewart & Lloyd Glasgow
Steel forgings Colville's Ltd.
Steel castings Messrs Hopkinsons Ltd.
Number of elements 61 each boiler Material of tubes steel Internal diameter and thickness of tubes 17 mm. 2 1/2 mm.
Material of headers steel Tensile strength 26-30 tons Thickness 17/16" 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 1.76 sq ins Are the safety valves fitted with easing gear yes Working pressure as per
Rules approved drawing. 225 lbs Pressure to which the safety valves are adjusted 237 lbs Hydraulic test pressure:
tubes 1,200 lbs forgings and castings 675 lbs and after assembly in place 1,000 lbs Are drain ✓
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

The foregoing is a correct description,
FOR THE CENTRAL MARINE ENGINE WORKS,

(W. Gray & Co. Ltd.)

Manufacturer.

Dates { During progress of
of Survey { work in shops - - }
while { During erection on
building { board vessel - - }

Are the approved plans of boiler and superheater forwarded herewith no
(If not state date of approval.) 13-1-37.

Total No. of visits

Is this Boiler a duplicate of a previous case yes If so, state Vessel's name and Report No. "Profano Livanos" 10. Hpl Rpt No 17717

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These Boilers have been constructed under Special Survey and in accordance with the approved plans for a working pressure of 225 lbs per sq inch. The materials and workmanship have been found good. Upon completion the Boilers were tested in the presence of the undersigned with hydraulic pressure 388 lbs per sq inch, showed no signs of weakness and were found tight and sound in every respect at that pressure.

Survey Fee ... £ See accmpt.
Travelling Expenses (if any) £ Indy Rpt.

When applied for, 19
When received, 19

F. Brooke Smith

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE 2 NOV 1937

Assigned See accmpt F.B. report



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Foundation