

REPORT ON BOILERS.

OCT 28 1937

Received at London Office

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 Reg. Book. Date, First Survey 11th March, 1937 Last Survey 20th October, 1937

on the "G. S. Livanos" (Number of Visits 69) Tons { Gross 4835 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 Central Marine Engine Works. Engine No. 1078 When made 1937

Boilers made at West Hartlepool By whom made Central Marine Engine Works. Boiler No. 1078 When made 1937.

Nominal Horse Power 466 Owners G. S. Livanos & Livanos Maritime Co Ltd Port belonging to Chios.

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

Manufacturers of Steel Colvilles Ltd. Glasgow. (Letter for Record S.)

Total Heating Surface of Boilers 1747 sq ft Is forced draught fitted No. Coal or Oil fired Coal.

No. and Description of Boilers One, 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 42.5 sq ft No. and Description of safety valves to each boiler 2, Bockburn's High Lift 2" Dia.

Area of each set of valves per boiler { per Rule 4.659 ins. as fitted 6.28 sq ins. Pressure to which they are adjusted 230 lbs. 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 19" Is oil fuel carried in the double bottom under boilers No.

Smallest distance between shell of boiler and tank top plating 42" Is the bottom of the boiler insulated Yes.

Largest internal dia. of boilers 13' 6" Length 10' 6" Shell plates: Material steel Tensile strength 29-33 tons

Thickness 1 1/32" Are the shell plates welded or flanged No. Description of riveting: circ. seams { end D.R. lap, inter. single shake.

long. seams Y. R. D. B. S Diameter of rivet holes in { circ. seams 1 3/8" long. seams 1 3/8" Pitch of rivets { 4" 9 1/16"

Percentage of strength of circ. end seams { plate 65.6 rivets 43.8 Percentage of strength of circ. intermediate seam { plate 85.8 rivets 84.8

Percentage of strength of longitudinal joint { plate 85.8 rivets 84.8 combined 88.56 Working pressure of shell by Rules 226.3 lbs.

Thickness of butt straps { outer 1 1/32" inner 1 5/32" No. and Description of Furnaces in each Boiler 3, Deighton type.

Material steel Tensile strength 26-30 tons Smallest outside diameter 37 13/16"

Length of plain part { top bottom Thickness of plates { crown 19/32" bottom Description of longitudinal joint welded.

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 228.5 lbs.

End plates in steam space: Material steel Tensile strength 26-30 tons Thickness 1 1/4" Pitch of stays 19" x 16 7/8"

How are stays secured Double nuts & washers Working pressure by Rules 226.1 lbs.

Tube plates: Material { front steel back Tensile strength { 26-30 tons Thickness { 31/32" 7/8"

Mean pitch of stay tubes in nests 11 1/16" Pitch across wide water spaces 14 1/4" x 8 3/4" Working pressure { front 231.6 lbs. back 226.5 lbs.

Girders to combustion chamber tops: Material steel Tensile strength 28-32 tons Depth and thickness of girder

at centre 7 1/2" 2, 7/8" plates Length as per Rule 30.4" Distance apart 8 3/16" No. and pitch of stays

in each 2 x 9 1/16" Working pressure by Rules 226.7 lbs. Combustion chamber plates: Material steel

Tensile strength 26-30 tons Thickness: Sides 23/32" Back 23/32" Top 23/32" Bottom 23/32"

Pitch of stays to ditto: Sides 10 1/8" x 7 5/8" Back 8 1/2" x 9 3/8" Top 8 3/16" x 9 1/16" Are stays fitted with nuts or riveted over nuts.

Working pressure by Rules 226.5 lbs. 225.6 lbs. Front plate at bottom: Material steel Tensile strength 26-30 tons

Thickness 31/32" Lower back plate: Material steel Tensile strength 26-30 tons Thickness 1 5/16"

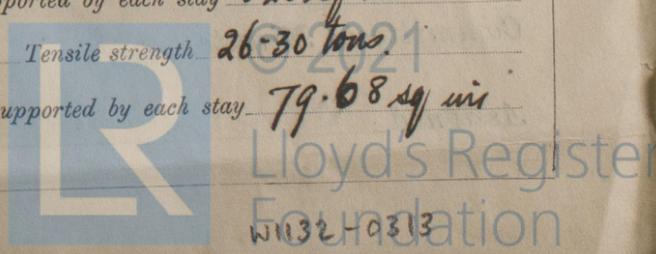
Pitch of stays at wide water space 14 1/4" x 9 3/8" Are stays fitted with nuts or riveted over nuts.

Working Pressure 248.6 lbs. Main stays: Material steel Tensile strength 28-32 tons

Diameter { At body of stay, or Over threads 3 1/8" No. of threads per inch 6. Area supported by each stay 320 sq ins.

Working pressure by Rules 229.8 lbs. Screw stays: Material steel Tensile strength 26-30 tons

Diameter { At turned off part, or Over threads 1 3/4" No. of threads per inch 9. Area supported by each stay 79.68 sq ins.



Working pressure by Rules 227.8 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 106.759 in Working pressure by Rules 232.4 lbs

Tubes: Material steel External diameter { Plain 3 1/4" Stay 3 1/4" Thickness { 8 w.g. 3/16" 1/4" 5/16" No. of threads per inch 9

Pitch of tubes 4 1/2" x 4 3/8" Working pressure by Rules 230 lbs Manhole compensation: Size of opening in shell plate 16 K 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 Butt 3 3/8" Top 3 7/8" 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 stays

How connected to shell Inner radius of crown Working pressure by Rules

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 None fitted Manufacturers of { Tubes _____ Steel forgings _____ Steel castings _____

Number of elements _____ Material of tubes _____ Internal diameter and thickness of tubes _____

Material of headers _____ Tensile strength _____ Thickness _____ Can the superheater be shut off and the boiler be worked separately _____

Is a safety valve fitted to every part of the superheater which can be shut off from the boiler _____

Area of each safety valve _____ Are the safety valves fitted with easing gear _____ Working pressure as per Rules _____

Pressure to which the safety valves are adjusted _____ Hydraulic test pressure: tubes _____ forgings and castings _____ and after assembly in place _____ Are drain cocks or valves fitted to free the superheater from water where necessary _____

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 of Survey { During progress of work in shops - - } Are the approved plans of boiler and superheater forwarded herewith no
 while building { During erection on board vessel - - } (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. "Stepano Livanos" W Hpl Rpt No 17717

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This Auxiliary Boiler has 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 Boiler was tested in the presence of the undersigned with hydraulic pressure 388 lbs per sq inch, showed no signs of weakness and was found tight and sound in every respect at that pressure.

Survey Fee £ : : } When applied for, 19
 Travelling Expenses (if any) £ : : } When received, 19

J. Brooke Smith
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE 2 NOV 1937
 Assigned See above P.B. report

