

## REPORT ON WATER TUBE BOILERS.

No. 8299

Received at London Office 23 FEB 1943

Date of writing Report 1 Nov 1942 When handed in at Local Office 10 Nov 1942 Port of Philadelphia & Cleveland

No. in Survey held at Barbarton Ohio & Chester Pa Date, First Survey Dec 9 1941 Last Survey 29 Sept 1942

Reg. Bk. on the S/S MARKAY Hull 232 (Number of Visits 9) Gross 10342 Tons Net

Master Built at Chester Pa By whom built Sam SB & DD Co When built 1942

Engines made at Lynn Mass By whom made General Electric Co When made

Boilers made at Barbarton Ohio By whom made Babcock & Wilcox Co When made 1942

Registered Horse Power 1726 Owners Keystone Shipping Corp Port belonging to Wilmington Del

WATER TUBE BOILERS—MAIN, AUXILIARY, OR DONKEY.—Manufacturers of Steel North & Carnegie Steel Co

(Letter for Record) Date of Approval of plan June 1941 Number and Description of Type 1000

of Boilers 2 - Two Drum type Working Pressure 500 lbs Tested by Hydraulic Pressure to 750 Date of Test Jan 15 1942

No. of Certificate 742 Can each boiler be worked separately Yes Total Heating Surface of Boilers 10500

Is forced draught fitted Yes Area of fire grate (coal) in each Boiler 4. B7W. Total grate area of boilers in vessel including Main and Auxiliary No. and type of burners (oil) in each boiler 4. B7W. No. and description of safety valves on each boiler 2. Spring loaded High Lift Area of each valve 4.90" Pressure to which they are adjusted 500 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 30" Height of Boiler 21'-0" Width and Length 14'-11" - 12'

Steam Drums:—Number in each boiler 1 Inside Diameter 24 5/16" W.P. 5" Material of plates O H Steel Thickness 15 3/8" W.P. 3-3/8 inch

Range of Tensile Strength 7000 to 8200 lbs Are drum shell plates welded or flanged Fusion Welded Description of riveting:—

Cir. seams long. seams Diameter of rivet holes in long. seams Pitch of Rivets

Lap of plate or width of butt straps Thickness of straps Percentage strength of long. joint:—Plate 90% Rivet

Diameter of tube holes in drum 1 1/4" - 2" - 3 1/4" Pitch of tube holes 1 3/4" - 3 1/4" - 5" Percentage strength of shell in way of tubes 27.14%

If Drum has a flat side state method of staying Depth and thickness of girders at centre (if fitted) Distance apart Number and pitch of stays in each Working pressure by rules

Steam Drum Heads or Ends:—Material O H Steel Thickness 1 9/16" Radius or how stayed 38" R 15 3/8" W.S.

Size of Manhole or Handhole 12" X 16" Water Drums:—Number in each boiler 1 Inside Diameter 14 5/8" TS

Material of plates O H Steel Thickness 7/8" - 2 1/8" Range of tensile strength 70 to 8200 lbs Are drum shell plates welded or flanged Fusion Welded Description of riveting:—Cir. seams long. seams Diameter of Rivet Holes in long. seams Pitch of rivets Lap of plates or width of butt straps Thickness of straps

Percentage strength of long. joint:—Plate 90% Rivet Diameter of tube holes in drum 1 1/4" - 2" - 3 1/4" Pitch of tube holes 1 3/4" - 3 1/4" - 5"

Percentage strength of drum shell in way of tubes 27.14% Water Drum Heads or Ends:—Material O H Steel Thickness 1"

Radius or how stayed 24" Size of manhole or handhole 12" X 16" Headers or Sections:—Number

Material Thickness Tested by Hydraulic Pressure to Material of Stays

Area at smallest part Area supported by each stay Working Pressure by Rules Tubes:—Diameter 1 1/4" - 2" - 3 1/4"

Thickness .095 - .134 - .250 Number 1089. 111. 4 Steam Dome or Collector:—Description of Joint to Shell

Percentage strength of Joint Diameter Thickness of shell plates Material

Description of longitudinal joint Diameter of Rivet Holes Pitch of Rivets Working Pressure of shell by Rules

Crown or End Plates:—Material Thickness How stayed

SUPERHEATER Type B7W Date of Approval of Plan June 1941 Tested by Hydraulic Pressure to 750 lbs

Date of Test 14 Sept 1942 Is a safety valve fitted to each section of the superheater which can be shut off from the Boiler Yes

Diameter of Safety Valve 2" Pressure to which each is adjusted 495 lbs Is easing gear fitted Yes

Is a drain cock or valve fitted at lowest point of superheater Yes Number, diameter, and thickness of tubes

Spare Gear. Tubes Rule Requirements Gaskets or joints Manhole Handhole Handhole plates

The foregoing is a correct description,

Manufacturer.

Dates of Survey } During progress of Dec 9. 12. 15. 26. 29. 1941. Is the approved plan of boiler forwarded herewith No

while } During erection on 24 July. 12 Aug. 14 & 29 Sept 1942 Total No. of visits 9

building } board vessel - - -

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) The above boilers have been satisfactorily installed on board the vessel, tested by hydraulic pressure to 750 lbs & found sound & tight. The safety valves have been adjusted under steam on 2 boilers to 500 lbs per sq. inch. In my opinion the boilers are eligible to receive the record of 2 WTBs 500 lbs sq.

Survey Fee ... \$286.30 When applied for, 30<sup>th</sup> Nov. 1942

Travelling Expenses (if any) \$35.00 When received, 19

See Clor. Report 1083 A/c Cleveland Office

MORRIS R. HAM & SONS  
Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute NEW YORK JAN 13 1943

Assigned 2 WTB (Clt) 500 lbs.