No. 2026

THE BRITISH CORPORATION FOR THE SURVEY

AND

REGISTRY OF SHIPPING.

Report No. 1843 No. in Register Book 3153.

E.L. See judge Kenfick

S.S. "SHELTON WEED"

Makers of Engines EARLES S & E Co LTD.

Works No. 650

Makers of Main Boilers EARLES S & E Co LTD.

Works No. 650.

Makers of Donkey Boiler ✓

Works No. ✓

MACHINERY.

No.

THE BRITISH CORPORATION FOR THE SURVEY AND REGISTRY OF SHIPPING.

Report No. 1843. No. in Register Book 3153.

Received at Head Office 5 MAY 1925

Surveyor's Report on the New Engines, Boilers, and Auxiliary Machinery of the ~~Twin Quadrupl.~~ Single Triple Screw "SHELTON. WEED"

Official No. 148453 Port of Registry Hull.

Registered Owners Eastern Steamship Co Ltd. Port Colborne. Ontario

Engines Built by Earles S & E Co Ltd.

at Hull.

Main Boilers Built by Earles S & E Co Ltd.

" at Hull.

Donkey " "

at

Date of Completion 29. 4. 25

First Visit 22. 8. 24 Last Visit 29. 4. 25 Total Visits 59.

RECIPROCATING ENGINES.

Works No. 650 No. of Sets 1 Description Triple expansion Surface condensing.

No. of Cylinders each Engine 3 No. of Cranks 3

Diars of Cylinders 17" 28" 46" Stroke 33"

Cubic feet in each L.P. Cylinder 31·7

Are Spring-loaded Relief Valves fitted to Top and Bottom of each Cylr.?

" " " each Receiver ?

Type of H.P. Valves,

" 1st I.P. "

" 2nd I.P. "

" L.P. "

" Valve Gear

" Condenser Cooling Surface sq. ft.

Diameter of Piston Rods (plain part) Screwed part (bottom of thread)

Material "

Diar. of Connecting Rods (smallest part) Material 2 Iron 1 Steel.

" Crosshead Gudgeons Length of Bearing Material

No. of Crosshead Bolts (each) Diar. over Thrd. Thrds. per inch Material

" Crank Pin " " " " "

" Main Bearings Lengths

" Bolts in each Diar. over Thread Threads per inch Material

" Holding Down Bolts, each Engine Diar. No. of Metal Chocks

Are the Engines bolted to the Tank Top or to a Built Seat ?

Are the Bolts tapped through the Tank Top and fitted with Nuts Inside ?

If not, how are they fitted ?

See book 2023 pg 5 Geo Kempick

Connecting Rods, Forged by " 1 by Darlington Forge.

Piston " "

Crossheads, "

Connecting Rods, Finished by

Piston " "

Crossheads, " See book 2028 1 by Darlington

Date of Harbour Trial 23. 4. 25

" Trial Trip 29. 4. 25

Trials run at River Humber.

Were the Engines tested to full power under Sea-going conditions ?

If so, what was the I.H.P.? Revols. per min.

Pressure in 1st I.P. Receiver, lbs., 2nd I.P., lbs., L.P., lbs., Vacuum, ins.

Speed on Trial

If the Conditions on Trial were such that full power records were not obtained give the following estimated data:—

Builders' estimated I.H.P. 950 Revols. per min. 86

Estimated Speed 9½ knots.

TURBINE ENGINES.

Works No. Type of Turbines

No. of H.P. Turbines No. of I.P. No. of L.P. No. of Astern

Are the Propeller Shafts driven direct by the Turbines or through Gearing?

Is Single or Double Reduction Gear employed?

Diar. of 1st Reduction Pinion } Width Pitch of Teeth
" 1st " Wheel }

Estimated Pressure per lineal inch

Diar. of 2nd Reduction Pinion } Width Pitch of Teeth
" 2nd " Wheel }

Estimated Pressure per lineal inch

Revols. per min. of H.P. Turbines at Full Power S.H.P.

" " I.P. " "

" " L.P. " "

" " 1st Reduction Shaft

" " 2nd "

" " Propeller Shaft

Total Shaft Horse Power

Date of Harbour Trial

" Trial Trip

Trials run at

Speed on Trial Knots. Propeller Revols. per min. S.H.P.

Turbine Spindles forged by

" Wheels forged or cast by

Reduction Gear Shafts forged by

" Wheels forged or cast by

DESCRIPTION OF INSTALLATION.

TURBO-ELECTRIC PROPELLING MACHINERY.

No. of Turbo-Generating Sets Capacity of each

Type of Turbines employed

Description of Generators

No. of Motors driving Propeller Shafting

Are the Propeller Shafts driven direct by the Motors or through Gearing?

Is Single or Double Reduction Gear employed?

Description of Motors

Diar. of 1st Reduction Pinion } Width Pitch of Teeth
„ 1st „ Wheel

Estimated Pressure per lineal inch

Diar. of 2nd Reduction Pinion } Width Pitch of Teeth
„ 2nd „ Wheel

Estimated Pressure per lineal inch

Revols. per min. of Generators at Full Power

„ Motors „

„ „ 1st Reduction Shaft

„ „ 2nd „

„ „ Propellers at Full Power

Total Shaft Horse Power

Date of Harbour Trial

„ Trial Trip

Trials run at

Speed on Trial Knots. Propeller Revols. per min. S.H.P.

Makers of Turbines

„ Generators

„ Motors

„ Reduction Gear

Turbine Spindles forged by

„ Wheels forged or cast by

Reduction Gear Shafts forged by

„ Wheels forged or cast by

DESCRIPTION OF INSTALLATION.

SHAFTING.

Are the Crank Shafts Built or Solid ?

No. of Lengths in each — Angle of Cranks

Diar. by Rule — Actual — In Way of Webs

„ of Crank Pins — Length between Webs

Greatest Width of Crank Webs — Thickness

Least „ „ — „

Diar. of Keys in Crank Webs — Length

„ Dowels in Crank Pins — Length — Screwed or Plain

No. of Bolts each Coupling — Diar. at Mid Length — Diar. of Pitch Circle

Greatest Distance from Edge of Main Bearing to Crank Web

See Rect. 2023

Type of Thrust Blocks

No. „ Rings

Diar. of Thrust Shafts at bottom of Collars — No. of Collars

„ „ Forward Coupling — At Aft Coupling

Diar. of Intermediate Shafting by Rule — Actual — No. of Lengths

No. of Bolts, each Coupling — Diar. at Mid Length — Diar. of Pitch Circle

Diar. of Propeller Shafts by Rule — Actual — At Couplings

Are Propeller Shafts fitted with Continuous Brass Liners ?

Diar. over Liners — Length of After Bearings

Of what Material are the After Bearings composed ?

Are Means provided for lubricating the After Bearings with Oil ?

„ „ to prevent Sea Water entering the Stern Tubes ?

If so, what Type is adopted?

SKETCH OF CRANK SHAFT.

No. of Blades each Propeller Fitted or Solid ?

Material of Blades Boss

Diar. of Propellers Pitch Surface (each S. ft.

Coefficient of Displacement of Vessel at ⅔ Moulded Depth

See Book 2023

Crank Shafts Forged by Material

„ Pins „ „

„ Webs „ „

Thrust Shafts „ „

Intermed. „ „ „

Propeller „ „ Darlington Forge Co Ltd. „ Ingot steel.

Crank „ Finished by Charles S & Co Co Ltd.

Thrust „ „ " "

Intermed. „ „ " "

Propeller „ „ " "

STAMP MARKS ON SHAFTS.

Crank	Thrust	Tail
BC	BC	BC
No 7871	No 7865	No 7870
GAN.	GAN	GAN.
6. 4. 25	27. 1. 25	3. 4. 25

SKETCH OF PROPELLER SHAFT.

PUMPS, ETC.

No. of Air Pumps Diar. Stroke

Worked by Main or Independent Engines?

No. of Circulating Pumps Diar. Stroke

Type of „

Diar. of „ Suction from Sea

Has each Pump a Bilge Suction with Non-return Valve? Diar.

What other Pumps can circulate through Condenser?

No. of Feed Pumps on Main Engine Diar. Stroke

Are Spring-loaded Relief Valves fitted to each Pump?

Can one Pump be overhauled while the others are at work?

No. of Independent Feed Pumps Diar. Stroke

What other Pumps can feed the Boilers?

No. of Bilge Pumps on Main Engine Diar. Stroke

Can one Pump be overhauled while the others are at work?

No. of Independent Bilge Pumps

What other Pumps can draw from the Bilges?

Are all Bilge Suctions fitted with Roses?

Are the Valves, etc., so arranged as to prevent unintentional connection between Sea and Bilges?

Are all Sea Connections made with Valves or Cocks next the Ship's sides?

Are they placed so as to be easily accessible?

Are the Discharge Chests placed above or below the Deep Load Line?

Are they fitted direct to the Hull Plating and easily accessible?

Are all Blow-off Cocks or Valves fitted with Spigots through the Hull Plating and Covering Plates or Flanges on the Outside?

BOILERS.

Works No. 650

No. of Boilers 2 Type Cylindrical Multitubular

Single or Double-ended Single ended

No. of Furnaces in each 2

Type of Furnaces Deighton's

Date when Plan approved 11. 9. 24.

Approved Working Pressure 180 lbs □"

Hydraulic Test Pressure 320 " "

Date of Hydraulic Test 31. 3. 25.

" when Safety Valves set 23. 4. 25

Pressure at which Valves were set 180 + 5 lbs.

Date of Accumulation Test 23. 4. 25

Maximum Pressure under Accumulation Test 193.

System of Draught

Can Boilers be worked separately?

Makers of Plates

" Stay Bars

" Rivets

" Furnaces

Greatest Internal Diar. of Boilers

" " Length "

Square Feet of Heating Surface each Boiler

" " Grate " "

No. of Safety Valves each Boiler Rule Diar. Actual

Are the Safety Valves fitted with Easing Gear?

No. of Pressure Gauges, each Boiler No. of Water Gauges

" Test Cocks " " Salinometer Cocks

Sly Foot 2023
Judge Kenefick

BC TEST
No 2804
320 lbs
W.P. 180 "
GAN.
31-3-25

Port + Starbd
main boilers.

Are the Water Gauges fitted direct to the Boiler Shells or mounted on Pillars?

Are the Water Gauge Pillars fitted direct to the Boiler Shells or connected by Pipes?

Are these Pipes connected to Boilers by Cocks or Valves?

Are Blow-off Cocks or Valves fitted on Boiler Shells?

No. of Strakes of Shell Plating in each Boiler

,, Plates in each Strake

Thickness of Shell Plates Approved

,, ,, in Boilers

Are the Rivets Iron or Steel?

Are the Longitudinal Seams Butt or Lap Joints?

Are the Butt Straps Single or Double?

Are the Double Butt Straps of equal width?

Thickness of outside Butt Straps

,, inside ,,

Are Longitudinal Seams Hand or Machine Riveted?

Are they Single, Double, or Treble Riveted?

No. of Rivets in a Pitch

Diar. of Rivet Holes Pitch

No. of Rows of Rivets in Centre Circumferential Seams

Are these Seams Hand or Machine Riveted?

Diar. of Rivet Holes Pitch

No. of Rows of Rivets in Front End Circumferential Seams

Are these Seams Hand or Machine riveted?

Diar. of Rivet Holes Pitch

No. of Rows of Rivets in Back End Circumferential Seams

Are these Seams Hand or Machine Riveted?

Diar. of Rivet Holes Pitch

Size of Manholes in Shell

Dimensions of Compensating Rings

See Book 2023

Thickness of End Plates in Steam Space Approved

„ „ „ „ „ in Boilers

Pitch of Steam Space Stays

Diar. „ „ „ „ Approved Threads per Inch

„ „ „ „ „ in Boilers „

Material of „ „ „

How are Stays Secured ?

Diar. and Thickness of Loose Washers on End Plates

„ „ Riveted „ „ „

Width „ „ Doubling Strips „

Thickness of Middle Back End Plates Approved

„ „ „ „ „ in Boilers

Thickness of Doublings in Wide Spaces between Fireboxes

Pitch of Stays at „ „ „ „

Diar. of Stays Approved Threads per Inch

„ „ in Boilers „

Material „

Are Stays fitted with Nuts outside ?

Thickness of Back End Plates at Bottom Approved

„ „ „ „ „ in Boilers

Pitch of Stays at Wide Spaces between Fireboxes

Thickness of Doublings in „ „

Thickness of Front End Plates at Bottom Approved

„ „ „ „ „ in Boilers

No. of Longitudinal Stays in Spaces between Furnaces

See Rule 2023

Diar. of Stays Approved Threads per Inch

,, ,, in Boilers

Material ,,

Thickness of Front Tube Plates Approved

,, ,, ,, ,, in Boilers

Pitch of Stay Tubes at Spaces between Stacks of Tubes

Thickness of Doublings in ,, ,, ,,

,, Stay Tubes at ,, ,, ,,

Are Stay Tubes fitted with Nuts at Front End ?

Thickness of Back Tube Plates Approved

,, ,, ,, in Boilers

Pitch of Stay Tubes in Back Tube Plates

,, Plain ,,

Thickness of Stay Tubes

,, Plain ,,

External Diar. of Tubes

Material ,,

See Book 20 23

Thickness of Furnace Plates Approved

,, ,, ,, in Boilers

Smallest outside Diar. of Furnaces

Length between Tube Plates

Width of Combustion Chambers (Front to Back)

Thickness of ,, ,, Tops Approved

,, ,, in Boilers

Pitch of Screwed Stays in C.C. Tops

Diar. of Screwed Stays Approved — Threads per Inch

" " " in Boilers

Material " "

Thickness of Combustion Chamber Sides Approved

" " " " in Boilers

Pitch of Screwed Stays in C.C. Sides

Diar. " " Approved — Threads per Inch

" " " in Boilers

Material " "

Thickness of Combustion Chamber Backs Approved

" " " " in Boilers

Pitch of Screwed Stays in C.C. Backs

Diar. " " Approved — Threads per Inch

" " " in Boilers

Material " "

See book 2023

Are all Screwed Stays fitted with Nuts inside C.C.?

Thickness of Combustion Chamber Bottoms

No. of Girders over each Wing Chamber

" " " Centre "

Depth and Thickness of Girders

Material of Girders

No. of Stays in each

No. of Tubes, each Boiler

Size of Lower Manholes

VERTICAL DONKEY BOILERS.

None fitted

No. of Boilers Type

Greatest Int. Diar. Height

Height of Boiler Crown above Fire Grate

Are Boiler Crowns Flat or Dished ?

Internal Radius of Dished Ends Thickness of Plates

Description of Seams in Boiler Crowns

Diar. of Rivet Holes Pitch Width of Overlap

Height of Firebox Crowns above Fire Grate

Are Firebox Crowns Flat or Dished ?

External Radius of Dished Crowns Thickness of Plates

No. of Crown Stays Diar. Material

External Diar. of Firebox at Top Bottom Thickness of Plates

No. of Water Tubes Ext. Diar. Thickness

Material of Water Tubes

Size of Manhole in Shell

Dimensions of Compensating Ring

Heating Surface, each Boiler Grate Surface

SUPERHEATERS.

Description of Superheaters

Where situated ?

Which Boilers are connected to Superheaters?

Can Superheaters be shut off while Boilers are working ?

No. of Safety Valves on each Superheater Diar.

Are „ „ fitted with Easing Gear ?

Date of Hydraulic Test Test Pressure

Date when Safety Valves set Pressure on Valves

MAIN STEAM PIPES.

No. of Lengths	2			
Material	Steel			
Brazed, Welded or Seamless	Seamless.			
Internal Diar.	4"			
Thickness	¼"			
How are Flanges secured?	Expanded in forgn.			
Date of Hydraulic Test	22.4.25.			
Test Pressure	540 lbs.			

No. of Lengths				
Material				
Brazed, Welded or Seamless				
Internal Diar.				
Thickness				
How are Flanges secured?				
Date of Hydraulic Test				
Test Pressure				

No. of Lengths				
Material				
Brazed, Welded or Seamless				
Internal Diar.				
Thickness				
How are Flanges secured?				
Date of Hydraulic Test				
Test Pressure				

EVAPORATORS.

No. Type Tons per Day

Makers

Working Pressure Test Pressure Date of Test

Date of Test of Safety Valves under Steam

FEED WATER HEATERS.

No. 1 Type Surface 24 ft

Makers Henry Watson & Co.

Working Pressure 180 lbs Test Pressure Tubes 432 lbs Shell 150 " Date of Test 18.3.25 24.3.25 29.4.25

FEED WATER FILTERS.

No. 1 Type Sedeton Size

Makers Henry Watson & Co. Filter surface 1180 □"

Working Pressure — Test Pressure — Date of Test 29.4.25

LIST OF DONKEY PUMPS.

See book 20223

SPARE GEAR.

No. of Top End Bolts.	No. of Bot. End Bolts.	No. of Cylinder Cover Studs
„ Coupling Bolts	„ Main Bearing Bolts	„ Valve Chest „
„ Junk Ring Bolts	„ Feed Pump Valves	„ Bilge Pump Valves
„ H.P. Piston Rings	„ I.P. Piston Rings	„ L.P. Piston Rings
„ „ Springs	„ „ Springs	„ „ Springs
„ Safety Valve „	„ Fire Bars	„ Feed Check Valves
„ Piston Rods	„ Connecting Rods	„ Valve Spindles
„ Air Pump Rods	„ Air Pump Buckets	„ Air Pump Valves
„ Cir. „	„ Cir. „	„ Cir. „
„ Crank Shafts	„ Crank Pin Bushes	„ Crosshead Bushes
„ Propeller Shafts	„ Propellers	„ Propeller Blades
„ Boiler Tubes	„ Condenser Tubes	„ Condenser Ferrules

OTHER ARTICLES OF SPARE GEAR:—

See Book 223

REFRIGERATORS.

No. of Machines Capacity of each

Makers

Description

No. of Steam Cylinders, each Machine No. of Compressors No. of Cranks

Particulars of Pumps in connection with Refrigerating Plant and whether worked by Refrigerating Machines or Independently

System of Refrigeration

,, Insulation

Are Brine and other Regulating Valves placed so as to be accessible without entering the Insulated Spaces?

Are all Pipes, Air Trunks, &c., well secured and protected from risk of damage?

Are all Bilge, Sounding, and Air Pipes in Insulated Spaces properly insulated?

Are Thermometer Tubes so arranged that Water cannot enter and freeze in them?

Date of Test under Working Conditions

RESULTS OF TRIALS.

COMPARTMENT.	Temp. at beginning of Trial.	Temp. at end of Trial.	Time required to obtain this Result.	Rise of Temp. after hours.

Articles of Spare Gear for Refrigerating Plant carried on board:—

ELECTRIC LIGHTING.

Installation Fitted by Earles S & E Co Ltd.

No. and Description of Dynamos

Makers of Dynamos

Capacity ,, Amperes, at Volts, Revols. per Min.

Current Alternating or Continuous

Single or Double Wire System

Position of Dynamos

,, Main Switch Board

No. of Circuits to which Switches are provided on Main Switch Board

Particulars of these Circuits:—

Circuit.	Number of Lights.	Candle Power.	Current Required. Amps.	Size of Conductor.	Current Density.	Conductivity of Conductor.	Insulation Resistance per Mile.

See book No 2

Total No. of Lights No. of Motors driving Fans, &c. No. of Heaters

Current required for Motors and Heaters

Positions of Auxiliary Switch Boards, with No. of Switches on each

See book 2023.

Are Cut-outs fitted as follows ?—

On Main Switch Board, to Cables of Main Circuits

On Aux. ,, ,, each Auxiliary Circuit

Wherever a Cable is reduced in size

To each Lamp Circuit

To both Flow and Return Wires of all Circuits when the Double-Wire System is adopted

Are the Fuses of Standard Sizes ?

Are all Switches and Cut-outs constructed of Non-inflammable Material ?

Are they placed so as to be always and easily accessible ?

Smallest Single Wire used, No. S.W.G., Largest, No. S.W.G.

How are Conductors in Engine and Boiler Spaces protected ?

,, Saloons, State Rooms, &c., ,, ?

What special protection is provided in the following cases ?—

(1) Conductors exposed to Heat or Damp

(2) ,, passing through Bunkers or Cargo Spaces

(3) ,, ,, Deck Beams or Bulkheads

Are all Joints in Cables properly soldered and thoroughly Insulated so that the efficiency of the Cables is unimpaired ?

See book 2023.

Are all Joints in accessible positions, none being made in Bunkers or Cargo Spaces ?

Are all Hull Connections for Single-Wire Systems made with Screws of large Surface ?

Are the Dynamos, Motors, Main and Branch Cables, so placed that the Compasses are not injuriously affected by them ?

Have Tests been made to prove that this condition has been satisfactorily fulfilled ? Yes.

Has the Insulation Resistance over the whole system been tested ? Yes.

What does the Resistance amount to ? 100000 Ohms.

Is the Installation supplied with a Voltmeter ? Yes.

,, ,, ,, an Ampere Meter? Yes.

Date of Trial of complete Installation 29. 4. 25 Duration of Trial 6 hours

Have all the requirements of Section 42 been satisfactorily carried out ? Yes.

GENERAL CONSTRUCTION.

Have the Machinery and Boilers been constructed in accordance with the requirements of the Rules and the Approved Plans? Yes.

If not, give details of the points of difference, and state when these were sanctioned by the Chief Surveyor. —

Are the Materials used in the Construction of Engines and Boilers, so far as could be seen, sound and trustworthy? Yes.

Is the Workmanship throughout thoroughly satisfactory? Yes.

The above correctly describes the Machinery of the S.S. "SHELTON WEED"

as ascertained by ~~me~~ me from personal examination

Thos. Lees

Engineer Surveyor to the British Corporation for the Survey and Registry of Shipping.

Fees—

			£	s.	d.
MAIN BOILERS.					
H.S. 2940	Sq. ft.		:	:	
G.S. 76	,,		:	:	
DONKEY BOILERS.					
H.S. ✓	Sq. ft.		:	:	
G.S. ✓	,,		:	:	
		£	:	:	
ENGINES.					
L.P.C. 31.7	Cub. ft.		:	:	
		£	:	:	
Testing, &c.			:	:	
		£	:	:	
Expenses			:	:	
	Total ...	£	:	:	

It is submitted that this Report be approved,

Chief Surveyor.

Approved by the Committee for the Class of **M.B.S.*** on the 20th May 1925.

Fees advised

Fees paid

Secretary.

Visits paid.

22. 8. 24	3. 2. 25	29. 4. 25.
9. 9. 24	5. 2. 25	
11. 9. 24	9. 2. 25	
16. 9. 24	13. 2. 25	
24. 9. 24	17. 2. 25	
25. 9. 24	18. 2. 25	
1. 10. 24	23. 2. 25	
3. 10. 24	27. 2. 25	
7. 10. 24	2. 3. 25	
10. 10. 24	4. 3. 25	
24. 10. 24	9. 3. 25	
28. 10. 24	13. 3. 25	
5. 11. 24	16. 3. 25	
10. 11. 24	20. 3. 25	
14. 11. 24	27. 3. 25	
21. 11. 24	28. 3. 25	
25. 11. 24	30. 3. 25	
3. 12. 24	31. 3. 25	
9. 12. 24	3. 4. 25	
15. 12. 24	6. 4. 25	
22. 12. 24	7. 4. 25	
29. 12. 24	8. 4. 25	
2. 1. 25	14. 4. 25	
6. 1. 25	15. 4. 25	
8. 1. 25	16. 4. 25	
12. 1. 25	18. 4. 25	
16. 1. 25	20. 4. 25	
22. 1. 25	23. 4. 25	
27. 1. 25	28. 4. 25	