

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office

MAY - 3 1940

Date of writing Report

When handed in at Local Office

4 MAY 1940

Port of

Sunderland.

No. in Survey held at

Sunderland

Date, First Survey

Sep. 14 '39

Last Survey

May 1 1940

Reg. Book.

on the Steel Deck Steamer "GRAIGLAS"

(Number of Visits 52)

Gross 4312

Net 2549

Built at

Sunderland

By whom built J. L. Thompson & Sons Ld.

Yard No. 598

When built

1940

Engines made at

Sunderland

By whom made

G. Clark (1938) Ld.

Engine No. 1219

When made

1940

Boilers made at

Sunderland

By whom made

G. Clark (1938) Ld.

Boiler No. 1219

When made

1940.

Registered Horse Power

Owners

Graig Shipping Co. Ld.

Port belonging to

Cardiff

Nom. Horse Power as per Rule

348

Is Refrigerating Machinery fitted for cargo purposes

No.

Is Electric Light fitted

Yes.

Trade for which Vessel is intended

ENGINES, &c.—Description of Engines

Triple Expansion (NEM Reheater) Poppet valve Revs. per minute 60

Dia. of Cylinders

21 1/2" - 36" - 62"

Length of Stroke

39"

No. of Cylinders

3

No. of Cranks

3

Crank shaft, dia. of journals

as per Rule 11.98"

as fitted 12.5"

Crank pin dia. 12 1/2"

Crank webs

Mid length breadth 22"

MP 3" MP L.P. 4 5/8" shrunk

Thickness parallel to axis

3" MP 8" MP L.P. 7 1/8"

Thickness around eye-hole 6 1/4" 6 1/4"

Intermediate Shafts, diameter

as per Rule 11.41"

as fitted 11 3/4"

Thrust shaft, diameter at collars

as per Rule 11.98"

as fitted 12 1/2"

Tube Shafts, diameter

as per Rule 11.98"

as fitted 11 3/4"

Screw Shaft, diameter

as per Rule 12.495"

as fitted 13 1/8"

Is the Yes. shaft fitted with a continuous liner

Is the after end of the liner made watertight in the

propeller boss

Yes.

Bronze Liners, thickness in way of bushes

as per Rule 23/32"

as fitted 23/32"

Thickness between bushes

as per Rule 21/32"

as fitted 21/32"

Is the after end of the liner made watertight in the

propeller boss

Yes.

If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner one length.

If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive Yes.

If two liners are fitted, is the shaft lapped or protected between the liners Yes.

Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft Yes.

Propeller, dia. 16'-9"

Pitch 17'-9"

No. of Blades 4

Material C.I.

whether Moveable No.

Length of Bearing in Stern Bush next to and supporting propeller 4'-6"

Total Developed Surface 93.4 sq. feet

Feed Pumps worked from the Main Engines, No. 2

Diameter 3 1/4"

Stroke 22"

Can one be overhauled while the other is at work Yes.

Bilge Pumps worked from the Main Engines, No. 2

Diameter 3 1/4"

Stroke 22"

Can one be overhauled while the other is at work Yes.

Feed Pumps

No. and size 1 pair 6" x 8 1/2" x 18", 16" x 8 1/2" x 13"

Pumps connected to the

Main Bilge Line

No. and size 1 @ 10" x 12" x 12"

How driven Steam.

Ballast Pumps, No. and size 1 @ 10" x 12" x 12"

Lubricating Oil Pumps, including Spare Pump, No. and size 1

Are two independent means arranged for circulating water through the Oil Cooler Yes.

Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps;—In Engine and Boiler Room 3 @ 3" in E.R.

In Pump Room

hold 3" prs. Aft. Hold 3" prs.

In Holds, &c.

Forehold 3" prs. Main Hold 3 1/2" prs. Aft. main

Main Water Circulating Pump Direct Bilge Suctions, No. and size 1 @ 6"

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 @ 4 1/2", 1 @ 3"

Are all the Bilge Suction Pipes in holds and tunnel well fitted with strum-boxes Yes.

Are the Bilge Suctions in the Machinery Space led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges Yes.

Are all Sea Connections fitted direct on the skin of the ship Yes. Are they fitted with Valves or Cocks Both

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes. Are the Overboard Discharges above or below the deep water line Below.

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Yes. Are the Blow Off Cocks fitted with a spigot and brass covering plate Yes.

What Pipes pass through the bunkers In. bilge suction How are they protected Wood covers.

What pipes pass through the deep tanks none. Have they been tested as per Rule Yes.

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes.

Is the arrangement of Valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one compartment to another Yes.

Is the Shaft Tunnel watertight Yes. Is it fitted with a watertight door Yes worked from E.R. top plating.

MAIN BOILERS, &c.—(Letter for record S)

Which Boilers are fitted with Forced Draft Both main bhrs. Which Boilers are fitted with Superheaters Both main bhrs.

No. and Description of Boilers 2 SB (Spt.) 1 Aux. Working Pressure 220

IS A REPORT ON MAIN BOILERS NOW FORWARDED? Yes.

IS A DONKEY BOILER FITTED? Yes. If so, is a report now forwarded? Yes.

Can the donkey boiler be used for domestic purposes only No.

PLANS. Are approved plans forwarded herewith for Shafting Yes Main Boilers Yes Auxiliary Boiler Yes Donkey Boilers Yes

Superheaters Yes. General Pumping Arrangements Yes. Oil fuel Burning Piping Arrangements Yes.

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes.

State the principal additional spare gear supplied 1 C.I. Propeller, 1 Screw Shaft, 1 Impeller Shaft for main

Circulating Pump.

Poppet valve gear: H.P. 1 Valve & Seats & cages, 1 roller bearing, 1 main spring,

1 roller spring, 1 spindle clutch for valve cage covers, 1 spindle clutch for spring

ends. Bits for MP.

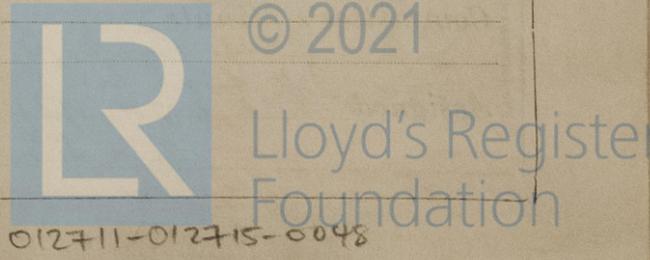
Superheaters: One complete element for each boiler with coupling units.

Two complete connecting pipes with clamps & couplings. 50 blanks & washers for clamp

holes in heads.

The foregoing is a correct description.
GEORGE CLARK (1938) LTD.

A. J. Berry Manufacturer.
DIRECTOR & GENERAL MANAGER



37/ Sep. 14. Oct. 2, 6, 9, 31. Nov. 3, 8, 14, 17, 21, 24, 27. Dec. 4, 12, 15, 18, 27. Jan. 2, 5, 8, 10
 During progress of work in shops -- 16, 17, 19, 22, 24, 26, 30. Feb. 2, 5, 7, 9, 13, 16, 25, 26, 27. Mar. 1, 4, 7, 12, 13, 14, 18, 19, 21, 29. Apr. 1, 16, 25, 30.
 Dates of Survey while building During erection on board vessel -- May 1
 Total No. of visits 52

Dates of Examination of principal parts—Cylinders ^{MR} 14/1/40, ^{LR} 30/1/40
 Slides 30/1/40 Covers 30/1/40
 Pistons 30/1/40 Piston Rods 1/3/40 Connecting rods 30/1/40
 Crank shaft 29/12/39 Thrust shaft 18/12/39 Intermediate shafts 16/2/40
 Tube shaft ✓ Screw shaft 26/2/40 Propeller 30/1/40
 Stern tube 16/2/40, 26/2/40 Engine and boiler seatings 12/3/40 Engines holding down bolts 21/3/40

Completion of fitting sea connections 20/2/40 Boilers fixed 21/3/40 Engines tried under steam
 Completion of pumping arrangements 25/4/40 Thickness of adjusting washers No 232 WHF
 Main boiler safety valves adjusted 16/4/40 Crank shaft material Ingot Steel Identification Mark 29/12/39 Thrust shaft material Ingot Steel Identification Mark No 267 WHF 18/12/39

Intermediate shafts, material Ingot Steel Identification Marks Nos 248, 246, 293, 299, 304, 303, 306 Tube shaft, material ✓ Identification Mark ✓
 Screw shaft, material Ingot Steel Identification Mark No 243 WHF 26/2/40 Steam Pipes, material S.D. Steel Test pressure 660 lbs Date of Test 13/3/40

Is an installation fitted for burning oil fuel *Yes* Is the flash point of the oil to be used over 150°F *Yes*
 Have the requirements of the Rules for the use of oil as fuel been complied with *Yes*
 Is the vessel (not being an oil tanker) fitted for carrying oil as cargo *No* If so, have the requirements of the Rules been complied with ✓
 If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with *not desired*
 Is this machinery duplicate of a previous case *No* If so, state name of vessel ✓

General Remarks (State quality of workmanship, opinions as to class, &c.)
 This machinery has been built under Special Survey in accordance with the approved plans & the rules of the Society.
 The materials & workmanship are good.
 It has been securely fitted on board the vessel & tried under steam alongside quay with satisfactory results.
 It is eligible, in my opinion, to have notation.
 L.M.C. 5.40 (R.H.), T.S. (C2), 2 S.B. (Spl.) 1 Amp. 220 lbs/s- F.D.
 Fitted to burn oil fuel (F.P. above 150°F) 5.40.

The amount of Entry Fee ... £ 5 - :
 Special ... £ 4/4 :
 Donkey Boiler Fee ... £ :
 Travelling Expenses (if any) £ :
 When applied for, 7 MAY 1940
 When received, 15/5/1940

W. Fraser
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute THE 14 MAY 1940
 Assigned *Fitt. for oil fuel 5.40 H. above 150°F*
2 S.B. (Spl.) 220 lbs
1 amp S.B.



SUNDERLAND.

The Surveyors are requested not to write on or below the space for Committee's Minute.