

REPORT ON MACHINERY.

No. 45385

Received at London Office 10 Feb 1926

Date of writing Report

When handed in at Local Office

4. 2. 10 Port of

Glasgow

Date in Survey held at

Glasgow

Date, First Survey

17. 4. 25

Last Survey

3-2-

1926

eg. Book.

on the new steel S/S "GRAIGWEN"

(Number of Visits)

35

Tons

Gross 3697

Net 2277

Master

Built at Port Glasgow

By whom built R. Duncan & Co. Ld. (N° 366)

When built 1925

Engines made at

Glasgow

By whom made W. Rowan & Co. Ld. (N° 817)

when made 1925

Boilers made at

Glasgow

By whom made W. Rowan & Co. Ld. (N° 817)

when made 1925

Registered Horse Power

Owners The Grang Shipping Co. Ltd.

Port belonging to Cardiff

Nom. Horse Power as per Section 28

392

Is Refrigerating Machinery fitted for cargo purposes

no

Is Electric Light fitted

yes

ENGINES, &c.—Description of Engines

Triple expansion

No. of Cylinders

3

No. of Cranks

3

Dia. of Cylinders

25"-41"-68"

Length of Stroke

45"

Revs. per minute

80

Dia. of Screw shaft

as per rule 13.697"

Material of screw shaft

steel

Is the screw shaft fitted with a continuous liner the whole length of the stern tube

yes

Is the after end of the liner made water tight

In the propeller boss

yes

If the liner is in more than one length are the joints burned

no

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

no

Length of stern bush

4'-9" No. 006

Dia. of Tunnel shaft

as per rule 12.28"

as fitted 12.5"

Dia. of Crank shaft journals

as per rule 12.894"

as fitted 13.5"

Dia. of Crank pin

13.5"

Size of Crank webs

20"x8.5"

Dia. of thrust shaft under

collars

13.5"

Dia. of screw

17'-0"

Pitch of Screw

14'-0"

No. of Blades

4

State whether moveable

no

Total surface

84 sq ft

No. of Feed pumps

2

Diameter of ditto

3.5"

Stroke

24"

Can one be overhauled while the other is at work

yes

No. of Bilge pumps

2

Diameter of ditto

4"

Stroke

24"

Can one be overhauled while the other is at work

yes

No. of Donkey Engines

3

Sizes of Pumps

9"x12"x12.8"

8"x8"x8.6"

6"x4"x6"

No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room

4@2.5"

In Holds, &c. N° 1 hold - 2@2.5". N° 2 hold - 2@3.5".

No. of Bilge Injections

1

sizes

6"

Connected to condenser, or to circulating pump

yes

Is a separate Donkey Suction fitted in Engine room & size

yes. 4.5"

Are all the bilge suction pipes fitted with rose

yes

Are the roses in Engine room always accessible

yes

Are the sluices on Engine room bulkheads always accessible

none

Are all connections with the sea direct on the skin of the ship

yes

Are they 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 Discharge Pipes 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 are carried through the bunkers

forward hold suction

How are they protected

under wood casing

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

yes

Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges

yes

Is the Screw Shaft Tunnel watertight

yes

Is it fitted with a watertight door

yes

worked from upper deck

BOILERS, &c.—(Letter for record (S))

Manufacturers of Steel

Rheinische Stahlwerke, Duisburg & Thiesemann & Co. Ltd.

Total Heating Surface of Boilers

6800 sq ft

Is Forced Draft fitted

no

No. and Description of Boilers

Three single ended marine

Working Pressure

180

Tested by hydraulic pressure to

320

Date of test

12-8-25

No. of Certificate

16903

Can each boiler be worked separately

yes

Area of fire grate in each boiler

59 sq ft

No. and Description of Safety Valves to

each boiler

Two direct spring

Area of each valve

8.290"

Pressure to which they are adjusted

185

Are they fitted with easing gear

yes

Smallest distance between boilers or uptakes and bunkers

15'-0"

dia. of boilers

15'-0"

Length

11'-6"

Material of shell plates

steel

Thickness

1.5"

Range of tensile strength

28-32 tons

Are the shell plates welded or flanged

no

Descrip. of riveting: cir. seams

WR. lap

long. seams

WR. TR

Diameter of rivet holes in long. seams

1.5"

Pitch of rivets

8.15"

Lap of plates or width of butt straps

18.3"

Per centages of strength of longitudinal joint

rivets 86.8

plate 86.01

Working pressure of shell by rules

180

Size of manhole in shell

16"x12"

Size of compensating ring

flanged 4"

No. and Description of Furnaces in each boiler

3 Deighton

Material

S

Outside diameter

43.27"

Length of plain part

top 35"

bottom 64"

Thickness of plates

35"

Description of longitudinal joint

welded

No. of strengthening rings

yes

Working pressure of furnace by the rules

180

Combustion chamber plates: Material

S

Thickness: Sides

3.5"

Back 3.5"

Top 3.5"

Bottom 7/8"

Pitch of stays to ditto: Sides

9.5"x9"

Back

9.5"x8.5"

Top

9.5"x9"

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

180

Material of stays

S

Area at smallest part

1.849"

Area supported by each stay

83.20"

Working pressure by rules

183

End plates in steam space:

Material

S

Thickness

1.5"

Pitch of stays

21"x19"

How are stays secured

DN

Working pressure by rules

182

Material of stays

S

Area at smallest part

5930"

Area supported by each stay

3530"

Working pressure by rules

85

Material of Front plates at bottom

S

Thickness

3.5"

Material of Lower back plate

S

Thickness

3.5"

Greatest pitch of stays

13.8"x8.3"

Working pressure of plate by rules

182

Diameter of tubes

3.5"

Pitch of tubes

4.5"x4.5"

Material of tube plates

S

Thickness: Front

2.5"

Back

2.5"

Mean pitch of stays

10"

Pitch across wide water spaces

13.5"

Working pressures by rules

183

Girders to Chamber tops: Material

steel

Depth and

thickness of girder at centre

9.3"x7.8"x2"

Length as per rule

37.1"

Distance apart

9.5"

Number and pitch of stays in each

3@9"

Working pressure by rules

183

Steam dome: description of joint to shell

none

% of strength of joint

Diameter

Thickness of shell plates

Material

Description of longitudinal joint

Diam. of rivet holes

Pitch of rivets

Working pressure of shell by rules

Crown plates

Thickness

How stayed

SUPERHEATER. Type

none

Date of Approval of Plan

Tested by Hydraulic Pressure to

Date of Test

Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler

Diameter of Safety Valve

Pressure to which each is adjusted

Is Easing Gear fitted

W403-0111

IS A DONKEY BOILER FITTED? none

If so, is a report now forwarded? —

SPARE GEAR. State the articles supplied:— As per Rules, and in addition — one tailshaft and one propeller.

The foregoing is a correct description,

For David Rowan & Co. Ltd
Arch^d N. Grierson Manufacturer.

Dates of Survey while building { During progress of work in shops — 1925 Apr 14 May 1 June 2-8-23 July 2-9-10-14-15-30-31 Aug 1-11-12-14-15-20-21-24-26-28 Sep 1-4-10-13
During erection on board vessel — Oct 4-12-13-14-15-19-28-29 July 3.
Total No. of visits 35.

Is the approved plan of main boiler forwarded herewith yes

" " " donkey " " " " "

Dates of Examination of principal parts—Cylinders 9-7-25 Slides 15-7-25 Covers 17-8-25 Pistons 17-8-25 Rods 20-8-25

Connecting rods 31-7-25 Crank shaft 14-7-25 Thrust shaft 7-9-25 Tunnel shafts 2-7-25 Screw shaft 10-9-25 Propeller 10-9-25

Stern tube 31-7-25 Steam pipes tested 10-9-25 15-10-25 Engine and boiler seatings 7-10-25 Engines holding down bolts 19-10-25

Completion of pumping arrangements 28-10-25 Boilers fixed 28-10-25 Engines tried under steam 3-2-26

Completion of fitting sea connections ok Stern tube ok Screw shaft and propeller ok

Main boiler safety valves adjusted 29-10-25 Thickness of adjusting washers For boiler both 3" bent boiler both 5" standard both 3"

Material of Crank shaft 1 steel Identification Mark on Do. LLOYDS N° 817 14-7-25 Material of Thrust shaft 1 steel Identification Mark on Do. LLOYDS N° 104 14-9-25

Material of Tunnel shafts 1 steel Identification Marks on Do. LLOYDS N° 817 14-7-25 Material of Screw shafts 1 steel Identification Marks on Do. LLOYDS N° 103 10-9-25

Material of Steam Pipes Solid drawn copper Test pressure 400 lbs per sq in

Is an installation fitted for burning oil fuel no Is the flash point of the oil to be used over 150°F. —

Have the requirements of Section 49 of the Rules been complied with —

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. —)

The materials and workmanship are good.

The machinery has been constructed under special survey in accordance with the

Rules, satisfactorily fitted in the vessel, tried under steam and found good.

It is eligible in my opinion for Classification and the Record + LMC 2,26

It is submitted that
this vessel is eligible for
THE RECORD + LMC 2.26. CL

CERTIFICATE WRITTEN
13/1/26

11/2/26

The amount of Entry Fee ... £ 5 : 0 :
Special ... £ 83 : 16 :
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :
When applied for, 4/2/26
When received, 6/2/26

S. C. Davis
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 9-FEB-1926

Assigned + LMC 2,26



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Foundation