

Rpt. 4.

## REPORT ON MACHINERY.

No. 8986

Received at London Office THU. 1 NOV. 1923

Date of writing Report

19

When handed in at Local Office

26/10

1923 Port of

Belfast

No. in Survey held at  
Reg. Book.

Belfast

Date, First Survey 1920

Nov. 1st

Last Survey

Oct 25th

1923

on the New Steel Y.S.S. "Malaja"

(Number of Visits 154)

Gross 2082 1/2

Net 12830

When built 1923

Master

Built at

Belfast

By whom built

Harland &amp; Wolff Ltd.

Engines made at

Belfast

By whom made

Harland &amp; Wolff Ltd.

when made 1923

Boilers made at

Belfast

By whom made

Harland &amp; Wolff Ltd.

when made 1923

Registered Horse Power

Owners Peninsular &amp; Oriental S.N. Co.

Port belonging to Belfast.

Nom. Horse Power as per Section 28

2632

Is Refrigerating Machinery fitted for cargo purposes

yes

Is Electric Light fitted

yes

## ENGINES, &amp;c.—Description of Engines

Twin Screw Quadruple Expansion

No. of Cylinders

8

No. of Cranks

8

Dia. of Cylinders

33, 44, 64, 94

Length of Stroke

60

Revs. per minute

80

Dia. of Screw shafts

18 1/4

Material of shafts

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

yes

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

Length of stern bush

4'-6"

Dia. of Tunnel shaft

14 1/2

Dia. of Crank shaft journals

18 1/4

Dia. of Crank pin

20

Size of Crank webs

26 1/4

Dia. of thrust shaft under

collars

No. of Feed pumps

3

Pitch of Screw

24'-0"

No. of Blades

3

State whether moveable

yes

Total surface

105 sq

No. of Bilge pumps

3

Diameter of ditto

14"

Stroke

32"

Can one be overhauled while the other is at work

yes

No. of Donkey Engines

3

SIZES OF PUMPS

As per list

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

In Engine Room

1 @ 4"

1 @ 8" direct

Room. 3 @ 3 1/2" x 1-1/4" AFT.

In Holds, &amp;c.

3 @ 3 1/2" dia in holds to 1-2-3-4-5

2 @ 3 1/2"

dia in holds to 1-2-3-4-5

2 @ 3 1/2"

dia in holds to 1-2-3-4-5

No. of Bilge Injections

2

Connected to condenser, or to circulating pump

yes

Is a separate Donkey Suction fitted in Engine room

yes

FUEL OIL DEEP TANKS

yes

Are all the bilge suction pipes fitted with roses

yes

Are the roses in Engine room always accessible

yes

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

none

How are they protected

yes

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

Engine Room &amp; Bridge

Is a Report also sent on the Hull of the Ship

yes

Is a Report also sent on the Hull of the Ship

yes

Is a Report also sent on the Hull of the Ship

yes

## BOILERS, &amp;c.—(Letter for record)

5

Manufacturers of Steel

David Colville &amp; Sons

Total Heating Surface of Boilers

41358

Is Forced Draft fitted

yes

No. and Description of Boilers

6. D.E. 2. S.E.

Working Pressure

215 lbs

Tested by hydraulic pressure to

343

Date of test

See separate

No. of Certificate

yes

Can each boiler be worked separately

yes

Area of fire grate in each boiler

No. and Description of Safety Valves to

each boiler

Area of each valve

Pressure to which they are adjusted

220 lbs

Smallest distance between boilers or uptakes and bunkers or woodwork

yes

Are they fitted with easing gear

yes

Thickness

Range of tensile strength

Are the shell plates welded or flanged

Descrip. of riveting: cir. seams

long. seams

Diameter of rivet holes in long. seams

Pitch of rivets

Lap of plates or width of butt straps

Per centages of strength of longitudinal joint

rivets

Working pressure of shell by rules

Size of manhole in shell

Size of compensating ring

No. and Description of Furnaces in each boiler

Material

Outside diameter

Length of plain part

Thickness of plates

Description of longitudinal joint

No. of strengthening rings

Working pressure of furnace by the rules

Combustion chamber plates: Material

Thickness

Back

Top

Bottom

Pitch of stays to ditto: Sides

Back

Top

If stays are fitted with nuts or fixed heads

Working pressure by rules

End plates in steam space:

Material of stays

Area at smallest part

Area supported by each stay

Working pressure by rules

Material of stays

Area at smallest part

Area supported by each stay

Working pressure by rules

Material of Front plates at bottom

Thickness

Material of Lower back plate

Thickness

Greatest pitch of stays

Working pressure of plate by rules

Diameter of tubes

Pitch of tubes

Material of tube plates

Thickness: Front

Back

Mean pitch of stays

Pitch across wide water spaces

Working pressures by rules

Girders to Chamber tops: Material

Depth and

thickness of girder at centre

Length as per rule

Distance apart

Number and pitch of stays in each

Working pressure by rules

Steam dome: description of joint to shell

% of strength of joint

Diameter

Thickness of shell plates

Material

Pitch of rivets

Working pressure of shell by rules

Crown plates

Thickness

How stayed

SUPERHEATER. Type

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

Pressure to which each is adjusted

Is Easing Gear fitted

2021

Lloyd's Register

Foundation



IS A DONKEY BOILER FITTED?

No.

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— See separate list.

Pumps

3 Main feed pps simplex 20x14x32 1/2 2 fresh w pps 6 1/2 x 6 x 12 1/2 1 Hot Water pps simplex SA 6 1/2 x 6 x 12  
2 " air " simplex 16x28x18 1/2 1 Waste oil pps 1 1/2 x 3 1/2 x 5 S.A. 2 oil fuel transfer pps 12 x 14 x 24 simplex  
1 Emergency Bilge pps motor 10 x 12 1/2 1 Sanitary pps simplex D.A. 12 1/2 x 14 x 24 1 " " sediment " 6 x 6 x 12  
2 Circulating Centrif " 2 1/2 x 4 x 2 1/2 1 Ballast " " " " " 4 oil fuel pressure pps 1 1/2 x 3 x 6 duplex  
1 Aux feed pps simplex 10 x 4 x 24 1/2 1 Bilge " " " " " "

The foregoing is a correct description,  
For HARLAND & WOLFF Ltd.

J.D. Keay.

Manufacturer.

Dates of Survey: During progress of work in shops -- 1920 November 1st to 1923 Oct 25th  
During erection on board vessel --  
while building --  
Total No. of visits 154

Is the approved plan of main boiler forwarded herewith Yes with P.S. Keay

Forwarded: 3 Superheater plans, 1 main steam pipe, 2 arrangements of oil fuel "suction" in E.R. "donkey" "10 F. Sediment suction"

Dates of Examination of principal parts—Cylinders 14-5-23 Slides 12-2-23 Covers 12-2-23 Pistons 12-2-23 Rods 16-5-23

Connecting rods 14-6-23 Crank shaft 28-11-23 Thrust shaft 22-3-23 Tunnel shafts 23-3-23 Screw shaft 15-3-23 Propeller 12-2-23

Stern tube 9-7-23 Steam pipes tested 2-3-23 Engine and boiler seatings 14-10-23 Engines holding down bolts 14-10-23

Completion of pumping arrangements 23-10-23 Boilers fixed 21-9-23 Engines tried under steam 25-10-23

Completion of fitting sea connections 16-4-23 Stern tube 14-3-23 Screw shaft and propeller 16-4-23

Main boiler safety valves adjusted 16-10-23 Thickness of adjusting washers F.P. 14-3-23

Material of Crank shaft Steel Identification Mark on Do. 3958, 3959 Material of Thrust shaft Steel Identification Mark on Do. 3959

Material of Tunnel shafts Steel Identification Marks on Do. 3959 G.P.M. Material of Screw shafts Steel Identification Marks on Do. 3959

Material of Steam Pipes Solid drawn steel 6 x 3/4 thick main pipes Test pressure 650 lbs.

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 Section 49 of the Rules been complied with Yes

Is this machinery duplicate of a previous case Yes If so, state name of vessel Y. S. S. Moollan (H.C. 584)

General Remarks (State quality of workmanship, opinions as to class, &c.)

This Machinery has been built under Special Survey & in accordance with the Rules & approved plans. Materials & workmanship good.

The whole of the Machinery has been efficiently installed in the vessel & tried under steam & is in good & safe working condition & eligible in my opinion to be classed & have records.

Elect. St. Ref. Mch. Fitted for oil fuel 10-23 F.P. above 150°F.

Yail shafts C.L.

It is submitted that this vessel is eligible for THE RECORD.

+ L.M.C. 10-23 C.L.  
Fitted for oil fuel 10-23 F.P. above 150°F.

24/1/23.

William Butler.

Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... £ 6 : 0 : 0 : When applied for, 26-10-1923  
Special ... £ 165 : 16 : 0 :  
Donkey Boiler Fee ... £ ✓ :  
Travelling Expenses (if any) £ ✓ :  
TUE. NOV. 6 1923

Committee's Minute  
Assigned + L.M.C. 10.23. C.L.

Fitted for oil fuel 10-23 F.P. above 150°F.

Rpt. 5a.

Date of writing

No. in

Reg. Book.

Master

Engines m

Boilers m

Registered

MULTI

(Letter fo

Boilers

No. of C

safety val

Are they

Smallest

Material

Descrip.

Lap of

rules 2

boiler

Descript

plates:

Top

smallest

Pitch

Area su

Lower

Pitch o

water s

girder

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Pitch o

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Date of

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