

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office

28 MAR 1934

Date of writing Report

19

When handed in at Local Office

22.3.

1934

Port of

Glasgow

in Survey held at

Glasgow

Date, First Survey

11.7.33

Last Survey

20.3.

1934

on the

new steel "S/HARTLEBURY"

(Number of Visits 91)

Gross 5082

Tons

Net 3036

uilt at

Port Glasgow

By whom built

Lithgow Ltd

Yard No. 865

When built 1934

Engines made at

Glasgow

By whom made

David Rowan & Co. Ltd

Engine No. 962

When made 1934

Boilers made at

Glasgow

By whom made

David Rowan & Co. Ltd

Boiler No. 962

When made 1934

Registered Horse Power

Owners J & C Harrison (Ings)

Port belonging to London

Horse Power as per Rule

431 472

Is Refrigerating Machinery fitted for cargo purposes

no

Is Electric Light fitted

yes

for which Vessel is intended

MACHINES, &c.—Description of Engines Triple expansion

Revs. per minute 70½

No. of Cylinders 22½"-36"-65"

Length of Stroke 48

No. of Cranks 3

No. of Cranks 3

Crank shaft, dia. of journals

as per Rule 13.24

as fitted 13¾"

Crank pin dia. 13¾"

Mid. length breadth 21½"

HP&MP 9"

Thickness parallel to axis LP 1½"

Intermediate Shafts, diameter

as per Rule 12.61"

as fitted 12.61"

Thrust shaft, diameter at collars

as per Rule 13.24

as fitted 13¾" Mitchell

Shafts, diameter

as per Rule

Screw Shaft, diameter

as per Rule 14.193"

as fitted 14¾"

Is the tube screw shaft fitted with a continuous liner

yes

Liners, thickness in way of bushes

as per Rule 7.3"

as fitted ¾"

Thickness between bushes

as per Rule 5.49"

as fitted 1/16"

Is the after end of the liner made watertight in the

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

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 liners are fitted, is the shaft lapped or protected between the liners

no

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

yes

If so, state type

Length of Bearing in Stern Bush next to and supporting propeller 5'0"

Pitch 20'0"

No. of Blades 4

Material Bronze

whether Moveable yes

Total Developed Surface 92 sq. feet

Pumps worked from the Main Engines, No. 2

Diameter 3¾"

Stroke 27"

Can one be overhauled while the other is at work

yes

Pumps worked from the Main Engines, No. 2

Diameter 4¾"

Stroke 27"

Can one be overhauled while the other is at work

yes

No. and size 2@7"-9½"x21" also rotary

How driven steam

Pumps connected to the Main Bilge Line

No. and size Ballast pump

How driven steam

Pumps, No. and size 1@12"-10½"x24"

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1933 July: 11 Aug: 8, 20 Sep: 5, 8, 12, 18, 20, 29 Oct: 5, 6, 11, 17, 18, 20, 24, 27 Nov: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31 Dec: 1, 4, 5, 6, 11, 12, 15, 18, 19, 21, 25, 27, 29
During progress of work in shops --
Dates of Survey while building During erection on board vessel ---
28 Mar: 1, 5, 7, 20 = 71
Total No. of visits 91
TURBO COMPRESSOR: 1933 JULY: 5, 31 SEP: 21 OCT: 7, 20 NOV: 1, 6, 7, 11, 21, 27, 28 (1934) JAN: 17, 19 FEB: 2, 5, 6, 7, 13

Dates of Examination of principal parts—Cylinders 15-12-33 Slides 8-1-34 Covers 8-1-34
Pistons 5-12-33 Piston Rods 10-1-34 Connecting rods 5-10-33
Crank shaft 21-12-33 Thrust shaft 15-1-34 Intermediate shafts 6-12-33
Tube shaft — 2 Screw shafts 5-1-34 Propeller 5-1-34
Stern tube 19-12-33 Engine and boiler seatings G.R.K. Engines holding down bolts 13-2-34
Completion of fitting sea connections G.R.K.

Completion of pumping arrangements 16-2-34 Boilers fixed 27-2-34 Engines tried under steam 20-3-34
Main boiler safety valves adjusted 28-2-34 Thickness of adjusting washers Piston P³² S^{3/8}, Piston P³² S^{3/8}, Piston P³² S^{3/8}, Piston P³² S^{3/8}

Crank shaft material J. Steel Identification Mark LLOYD'S REGISTER NO. 4615 21-12-33 Thrust shaft material J. Steel Identification Mark LLOYD'S REGISTER NO. 4615 15-1-34
Intermediate shafts, material J. Steel Identification Marks LLOYD'S REGISTER NO. 4615 6-12-33 Tube shaft, material — Identification Mark LLOYD'S REGISTER NO. 4615 15-1-34

2 Screw shafts, material J. Steel Identification Mark LLOYD'S REGISTER NO. 4615 5-1-34 Steam Pipes, material Steel Test pressure 660 Date of Test 17-1-34
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 the Rules for the use of oil as fuel been complied with —

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 —

Is this machinery duplicate of a previous case yes If so, state name of vessel Harpasa, G.R. Rpt. No. 541

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, satisfactorily fitted to the vessel, tried under steam and found good. It is eligible in my opinion for Classification and the records — L.M.C. 3, 34 & Exhaust turbine driving steam compressor

Note The HP cylinder is fitted with cam operated Andrew & Cameron slide valves

A Götaverken turbo-compressor, made by Messrs. Danie Ruman & Co. Ltd. is fitted to these engines. The arrangement comprises an exhaust turbine upon the spindle of the HP cylinder of the main engine, compresses, superheats and delivers to the MP cylinder of the main engine. Copy of certificate attached

The following particulars were noted during the sea trials:—

	BOILER PRESSURE	H.P. CUT OFF	H.P. EXHAUST PRESSURE	M.P. STEAM PRESSURE	M.P. STEAM TEMP	L.P. STEAM PRESSURE	L.P. EXHAUST INS VAC	CONDENSER INS VAC	REV PER MIN
TURBINE OUT	220	.6	57	57	340°F	12½	23½	29	620
TURBINE IN	220	.6	38	68	400°F	15½	19	29	7

Turbo compressor revolutions 6,500 per min. Temperature of steam to HP cylinder 52

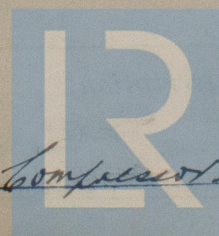
The amount of Entry Fee ... £ 5 :
Special ... £ 89 : 13 :
Turbo compressor Donkey Boiler Fee ... £ 10 : — :
Travelling Expenses (if any) £ : :
When applied for, 21/3/1934
When received, 22/3/1934

S. C. Davis

Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute GLASGOW 27 MAR 1934

Assigned + L.M.C. 3, 34, F.D.
Exhaust turbine driving steam compressor



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