

REPORT ON MACHINERY.

No. 31646

Date of writing Report 19 23/2/20 When handed in at Local Office Port of Hull. Received at London Office 10/2/20

No. in Survey held at Hull Date, First Survey 2/12/18 Last Survey 12/2/19 20

Reg. Book. on the S.S. APPLE BRANCH. (Number of Visits 64) Tons { Gross 4452 Net 2726 When built 1920

Master Hull Built at Hull By whom built Paul & Co Ltd

Engines made at Hull By whom made Do when made 1920

Boilers made at Hull By whom made Do when made 1920

Registered Horse Power - Owners Maritime S. S. Co Ltd Port belonging to Switzerland.

Nom. Horse Power as per Section 28 517. Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes.

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders Three No. of Cranks 3

Dia. of Cylinders 27"-44"-73" Length of Stroke 48" Revs. per minute 78 Dia. of Screw shaft as per rule 14.7" 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

the propeller boss Yes If the liner is in more than one length are the joints burned - 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 - If two

liners are fitted, is the shaft lapped or protected between the liners - Length of stern bush 60 1/2"

Dia. of Tunnel shaft as per rule 13.33" Dia. of Crank shaft journals as per rule 13.99" Dia. of Crank pin 14 1/2" Size of Crank webs 9x22" Dia. of thrust shaft under

collars 14 3/4" Dia. of screw 17-6" Pitch of Screw 18-6" No. of Blades 4 State whether moveable No Total surface 100 sq

No. of Feed pumps Two Diameter of ditto 14 1/8" Stroke 24" Can one be overhauled while the other is at work Yes

No. of Bilge pumps Two Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work Yes

No. of Donkey Engines Three Sizes of Pumps Feed 10 1/2 x 8 1/2 Ballast 10 1/2 x 14 x 2 1/2 No. and size of Suctions connected to both Bilge and Donkey pumps

in Engine Room Four 3 1/2" dia. General service 9 1/2 x 7 1/8" In Holds, &c. Two 3 1/2" dia. in nos 1, 2, 3 & 4

one 3 1/2" in no 5, one 3 1/2" dia. in nos 8 after peaks.

No. of Bilge Injections One size 13" Connected to condenser or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes 3 1/2"

Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room always accessible Yes Are the sluices on Engine room bulkheads 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 cover plate Yes

That pipes are carried through the bunkers Forward suction How are they protected under close ceiling

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 Eng Room Top Grating

BOILERS, &c.—(Letter for record S) Manufacturers of Steel J. Spencer & Sons.

Total Heating Surface of Boilers 7668 sq Is Forced Draft fitted Yes No. and Description of Boilers Three Single ended.

Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs. Date of test 8/10/19 No. of Certificate 3396

Can each boiler be worked separately Yes Area of fire grate in each boiler 63.3 sq No. and Description of Safety Valves to

each boiler Two spring loaded Area of each valve 9.6 sq Pressure to which they are adjusted 185 lbs Are they fitted with easing gear Yes

Smallest distance between ~~boilers~~ or uptakes and bunkers 18" in ceiling Mean dia. of boilers 186" Length 11-6" Material of shell plates Steel

Thickness 1 1/2" Range of tensile strength 28 to 32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D.R.

Long. seams T.R.D.B.S. Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 9 3/8" Lap of plates or width of butt straps 19 1/2"

Percentages of strength of longitudinal joint rivets 87.4 Working pressure of shell by rules 182 lbs Size of manhole in shell 16 x 12"

plate 85.7

Size of compensating ring - No. and Description of Furnaces in each boiler 3 Dighton Material Steel Outside diameter 50 1/2"

Length of plain part top 3 1/2" Thickness of plates crown 3 1/2" Description of longitudinal joint welded No. of strengthening rings -

bottom 3 1/2"

Working pressure of furnace by the rules 188 lbs Combustion chamber plates: Material Steel Thickness: Sides 23/32" Back 4" Top 23/32" Bottom 23/32"

Pitch of stays to ditto: Sides 10 1/2 x 8 1/2 Back 10 x 8 1/2 Top 10 1/2 x 8 1/2 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 5191

Material of stays Steel Area at smallest part 2.07 Area supported by each stay 5.92 Working pressure by rules 202.5 End plates in steam space:

Material Steel Thickness 1 1/2" Pitch of stays 2 1/2 x 20 1/2 How are stays secured T.N. Working pressure by rules 182 lbs Material of stays Steel

Area at smallest part 7.85 Area supported by each stay 44.5 Working pressure by rules 183 Material of Front plates at bottom Steel

Thickness 3/2" Material of Lower back plate Steel Thickness 3/2" Greatest pitch of stays 13 1/2 x 8 1/2 Working pressure of plate by rules 187

Diameter of tubes 2 3/4" Pitch of tubes 3 1/2 x 4 1/2 Material of tube plates Steel Thickness: Front 3/2" Back 5/8" Mean pitch of stays 10"

Clearance across wide water spaces 13 1/2" Working pressures by rules 181 lbs Girders to Chamber tops: Material Steel Depth and

Thickness of girder at centre 10 1/2 x 1 1/2" Length as per rule 30 1/2" Distance apart 10 1/2" Number and pitch of stays in each 3 @ 8 1/2"

Working pressure by rules 181 lbs Steam dome: description of joint to shell - % 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 - 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 -

IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded? *-*

SPARE GEAR. State the articles supplied:— *Two top end, two bottom end, two main bearing bolts & nuts, 3 crank shaft & 3 tunnel shaft bolts & nuts, 2 feed & 2 bilge valves, 3 main & 3 donkey check valves, 6 cylinders & 6 steam chest studs & nuts, 12 junk ring studs & nuts, one propeller, 6 air pump valves, packing for piston & slide valve rolls, a quantity of bolts & nuts & iron of various sizes, 12 condenser tubes, 50 Gannules, &c.*

The foregoing is a correct description,

FOR EARLES SHIPBUILDING & ENGINEERING CO.

SECRETARY Manufacturer.

Dates of Survey while building { During progress of work in shops - - } *2/12/18 to 12/2/20*
{ During erection on board vessel - - - }
Total No. of visits *64*

Is the approved plan of main boiler forwarded herewith? *Yes*
" " " donkey " " *Yes*

Dates of Examination of principal parts—Cylinders *15/5/19* Slides *4/7/19* Covers *4/7/19* Pistons *17/6/19* Rods *24/6/19*
Connecting rods *17/6/19* Crank shaft *2/6/19* Thrust shaft *2/4/19* Tunnel shafts *21/11/19* Screw shaft *26/9/19* Propeller *26/9/19*
Stern tube *26/9/19* Steam pipes tested *26/11/20* Engine and boiler seatings *3/10/19* Engines holding down bolts *3/10/19*
Completion of pumping arrangements *14/2/20* Boilers fixed *5/2/20* Engines tried under steam *14/2/20*
Completion of fitting sea connections *14/10/19* Stern tube *14/10/19* Screw shaft and propeller

Main boiler safety valves adjusted *5/2/20* Thickness of adjusting washers *5 1/2" P 7/8" 5 3/8" P 7/8" 5 1/2" P 7/8"*

Material of Crank shaft *Steel* Identification Mark on Do. *2960 MR* Material of Thrust shaft *Steel* Identification Mark on Do. *2960 MR*
Material of Tunnel shafts *Steel* Identification Marks on Do. *2960 MR* Material of Screw shafts *Steel* Identification Marks on Do. *4050 MR*

Material of Steam Pipes *Lap welded Steel* Test pressure *540 lbs*
Is an installation fitted for burning oil fuel? *No* 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 *Standard B Type.*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The engines & boilers of this vessel have been built under special survey, & the materials & workmanship are good. On completion they were examined while running full power trials in the Chamber & found satisfactory. The machinery throughout is now in good & efficient condition, & eligible in our opinion to have the record L.M.C.-2-20 marked in Red in the Society's Register Book.*

It is admitted that this vessel is eligible for *T.L.M.C. 2-20 F.D.*

24/2/20
JWD *JRS*

The amount of Entry Fee ... £ *98-17-4* When applied for, *23/2/20*
Special ... £ : :
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ *1-10-0* When received, *24/3/20*

Herbert L. Sutherland
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. 27 FEB. 1920*
Assigned *+ L.M.C. 2-20 F.D.*

Certificate (if required) to be sent to the Surveyors are requested not to write on or below the space for Committee's Minute.

