

REPORT ON MACHINERY.

No. 282

Received at London Office 22 AUG 1928

Date of writing Report Aug 4 1928 When handed in at Local Office

10 Port of Toronto

No. in Survey held at Collingwood, Ont Date, First Survey April 10th Last Survey Aug 3rd 1928
Reg. Book.

on the Steel Steam Single Screw Hopper Barge "CHESTERFIELD"

Master J. T. McCalmont. Built at Collingwood By whom built Collingwood Shipyard Ltd. When built 1928

Engines made at Newark, N. J. By whom made Hercules and Phillips Ltd. when made 1918 1928

Boilers made at Collingwood By whom made Collingwood Shipyard Ltd. when made 1928

Registered Horse Power 91.75 Owners Government of Canada Port belonging to Collingwood.

Nom. Horse Power as per Section 28 107 1/4 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Triple Expansion Reciprocating No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 15 1/2" x 26" x 44" Length of Stroke 26" Revs. per minute 120 Dia. of Screw shaft as per rule 9 1/4" Material of shaft as fitted 9 1/4" screw shaft

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 — 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 3'-6" H.P. 6"x17"

Dia. of Tunnel shaft as per rule 2 7/8" Dia. of Crank shaft journals as per rule 8 3/8" Dia. of Crank pin 8 3/8" Size of Crank webs H.P. 6"x17" Dia. of thrust shaft under

collars 8 3/8" Dia. of screw 10'-0" Pitch of Screw 9'-6" No. of Blades 4 State whether moveable yes Total surface 42 sq. ft. L.P. 7"x17"

No. of Feed pumps 2 direct connected Diameter of ditto 3" Stroke 14" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 direct connected 3 1/2" Stroke 14" Can one be overhauled while the other is at work yes

No. of Donkey Engines 1 size 7" Sizes of Pumps Sanitary Bilge 5 1/4"x4 3/4"x6" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 1 size 7" In Holds, &c. Eight in all. all 2 1/2" one P.T.S. to Hopper side of

one P.T.S. to Hopper side of, one to Bilge side of, one to Fore Peak.

No. of Bilge Injections one size 5" Connected to condenser, or to circulating pump pump. Is a separate Donkey Suction fitted in Engine room & size yes 3"

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 yes

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 above

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 3" exhaust 3" machinery How are they protected under deck.

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 none Is it fitted with a watertight door — worked from —

BOILERS, &c.—(Letter for record (S)) Manufacturers of Steel Lukens Steel Co. Coatesville, Pa.

Total Heating Surface of Boilers 1573 sq. ft. Is Forced Draft fitted no No. and Description of Boilers 2 Scotch 25 Bins.

Working Pressure 195 lbs. Tested by hydraulic pressure to 343 lbs. Date of test June 6/28 No. of Certificate 218

Can each boiler be worked separately yes Area of fire grate in each boiler 45 sq. ft. each No. and Description of Safety Valves to

each boiler 1 twin, 2 1/4" dia. spring valves Area of each valve 12.4 sq. in. Pressure to which they are adjusted 195 lbs. Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 6 feet. Mean dia. of boilers 12'-6" Length 10'-10" Material of shell plates O.H. steel.

Thickness 1 1/8" Range of tensile strength 28 to 32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 3 3/4" pitch 4 reeled.

long. seams full welded Diameter of rivet holes in long. seams 1 3/16" Pitch of rivets outer row 7 1/2" inner row 3 3/8" Lap of plates or width of butt straps 19"

Per centages of strength of longitudinal joint rivets 88.0 plate 84.5 Working pressure of shell by rules 195# Size of manhole in shell 12"x16"

Size of compensating ring 31"x34"x1 1/8" No. and Description of Furnaces in each boiler 3 Morrison 3 ft. corrugated Material steel Outside diameter 37 1/16"

Length of plain part top bottom Thickness of plates crown 17/32" Description of longitudinal joint welded. No. of strengthening rings none

Working pressure of furnace by the rules 207 Combustion chamber plates: Material O.H. steel Thickness: Sides 3/4" Back 3/4" Top 3/4" Bottom 3/4"

Pitch of stays to ditto: Sides 6 7/8"x8 1/4" Back 8"x7 1/2" Top 6 7/8"x8 1/4" If stays are fitted with nuts or riveted heads Riveted heads Working pressure by rules 220#

Material of stays steel Area at smallest part 1.45 sq. in. Area supported by each stay 60 sq. in. Working pressure by rules 209 End plates in steam space:

Material steel Thickness 1" Pitch of stays 13 3/4"x16 1/2" How are stays secured and threaded into plate. Working pressure by rules 199# Material of stays steel

Area at smallest part 4.43 sq. in. Area supported by each stay 227 sq. in. Working pressure by rules 212# Material of Front plates at bottom steel

Thickness 1 1/8" Material of Lower back plate steel Thickness 3/4" Greatest pitch of stays 8"x7 1/2" Working pressure of plate by rules 220#

Diameter of tubes 3 1/4" Pitch of tubes 4 1/16"x4 1/2" Material of tube plates steel Thickness: Front 13/16" Back 3/4" Mean pitch of stays 10"

Pitch across wide water spaces 8" Working pressures by rules 201# Girders to Chamber tops: Material steel Depth and

thickness of girder at centre 8 1/4"x4 3/4" Length as per rule 30" Distance apart 8 1/4" Number and pitch of stays in each 3-6 7/8"

Working pressure by rules 198# 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 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

0800-000110-266910

IS A DONKEY BOILER FITTED? *no.*

If so, is a report now forwarded? *—*

SPARE GEAR. State the articles supplied:—*one complete set top end brasses, bolts + nuts. One complete set bottom end brasses, bolts and nuts. Two main bearing bolts and nuts. One set coupling bolts and nuts. One set of feed and bilge pump valves. one set piston springs. a quantity of assorted bolts and nuts, and iron of various sizes.*

Four propeller blades. one pair each of connecting rod brasses, crosshead brasses, and link brasses. one air pump bucket and rod. one set check valves. Six cylinder cover studs. Six junk ring bolts. Four valve chest cover bolts. Ten Boiler tubes. 25 condenser tubes. one set safety valve springs, and other spare gear not required or recommended in the Rules.

The foregoing is a correct description,

COLLINGWOOD SHIPYARDS, LIMITED

John S. Heath

Manufacturer.

Vice-President.

Dates of Survey while building { During progress of work in shops -- *Apr. 10, Apr. 20, May 2, May 22, May 28.*
During erection on board vessel -- *June 6, June 7, June 26, June 27, June 29, June 30, July 9, July 16, July 17, July 23, July 24, July 27, Aug. 3rd.*
Total No. of visits *Eighteen.*

Is the approved plan of main boiler forwarded herewith *yes*

" " " donkey " " "

Dates of Examination of principal parts—Cylinders *Apr. 10* Slides *Apr. 10* Covers *Apr. 10* Pistons *Apr. 10* Rods *Apr. 10*

Connecting rods *Apr. 20* Crank shaft *Apr. 20* Thrust shaft *Apr. 20* Tunnel shafts *none* Screw shaft *May 2* Propeller *May 2*

Stern tube *May 22* Steam pipes tested *June 26* Engine and boiler seatings *May 28* Engines holding down bolts *June 6*

Completion of pumping arrangements *July 9th.* Boilers fixed *June 29* Engines tried under steam *July 16*

Completion of fitting sea connections *June 27* Stern tube *May 22* Screw shaft and propeller *May 28*

Main boiler safety valves adjusted *July 16* Thickness of adjusting washers *7/16"*

Material of Crank shaft *steel* Identification Mark on Do. *Heat no 4031* Material of Thrust shaft *steel* Identification Mark on Do. ** 47*

Material of Tunnel shafts *none* Identification Marks on Do. *—* Material of Screw shafts *steel* Identification Marks on Do. *1726*

Material of Steam Pipes *Seamless steel* Test pressure *600 lbs.*

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 *yes.*

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 main engines of this vessel*

were originally built by Hewes and Phillips, at Newark, N.J. in 1918,

They have not been under steam previous to fitting in the "Chesterfield"

and have been rebuilt throughout by the Collingwood Shipyard.

The forgings were tested to the Rules of the American Bureau of

Shipping, test reports of which were furnished and seen. The various

parts were examined while rebuilding at Collingwood Shipyard

and were found or made satisfactory throughout. The two main

boilers were constructed under the special survey of the Society's Surveyors

to the requirements of the Rules and in accordance with the approved plan.

The workmanship was satisfactory throughout and the material tested

to the satisfaction of the Society's Surveyors. The auxiliaries, piping, sea

connections, boiler mounting etc. were all arranged and fitted satisfactorily.

The machinery was submitted to an eight hour dock trial and afterwards to a six hour

trial trip and the whole was found efficient and satisfactory. In my opinion

the machinery of this vessel is eligible to be

closed LMC, 17, 28 in the Register Book.

John Stephen

Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... £ *#1500*
Special ... £ *13400*
Donkey Boiler Fee ... £ *—*
Travelling Expenses (if any) £ *5400*

When applied for,

Aug 4 1928

When received,

18.10.28

Committee's Minute

FRI. 7 SEP 1928

Assigned

J. M. C. 8-28

CERTIFICATE WRITTEN



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