Rpt. 4.

REPORT ON MACHINERY. No. 12408.

Port of WEST HARTLEPOOL

Received at London Office THUR. 14 JUL 1904

No. in Reg. Book. 2674 Survey held at Hartlepool, Date, first Survey 18th Dec. 1901 Last Survey 1st July 1904 (Number of Visits 145)

on the Steel S.S. "Seminole"

Master W. A. Ross. Built at W. Hartlepool By whom built Furness Withy & Co Ltd Tons Gross 5864 Net 3494 When built 1902

Engines made at Hartlepool By whom made Richardsons Westgarth & Co Ltd when made 1904

Boilers made at Hartlepool By whom made do do when made 1904

Registered Horse Power 490 Owners Anglo American Oil Co Ltd Port belonging to Newcastle

Nom. Horse Power as per Section 28 490 Is Refrigerating Machinery fitted No Is Electric Light fitted Yes.

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

Dia. of Cylinders 28" 46" 74" Length of Stroke 48 Revs. per minute 65 Dia. of Screw shaft as per rule 15" as fitted 16" Material of screw shaft ingot 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 ✓ 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 ✓ Length of stern bush 5'-5½"

Dia. of Tunnel shaft as per rule 13·4 as fitted ✓ Dia. of Crank shaft journals as per rule 14·39" as fitted 14¾" Dia. of Crank pin 14¾" Size of Crank webs 9½"x23¾" Dia. of thrust shaft under collars 15" Dia. of screw 18'-0" Pitch of screw 18'-6" No. of blades 4 State whether moveable Yes Total surface 904 sq. ft.

No. of Feed pumps 2 Diameter of ditto 3¾" Stroke 24" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 4½" Stroke 24" Can one be overhauled while the other is at work Yes.

No. of Donkey Engines Three Sizes of Pumps Fed. 10½"x18"+9"x5½" No. and size of Suctions connected to both Bilge and Donkey pumps in Engine Room Five 3½" dia. Ballast 10½"x9" In Holds, &c. —

No. of bilge injections one sizes 4" Connected to ~~condenser, or to~~ circulating pump Yes Is a separate donkey suction fitted in Engine room & size Yes 3½"

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 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 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 None How are they protected ✓

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

When were stern tube, propeller, screw shaft, and all connections examined in dry dock Is the screw shaft tunnel watertight ✓

Is it fitted with a watertight door ✓ worked from ✓

BOILERS, &c.— (Letter for record S) Total Heating Surface of Boilers 8140 sq. ft Is forced draft fitted No

No. and Description of Boilers 4 Single ended. Cyl. Multi. Working Pressure 186 lbs Tested by hydraulic pressure to 360 lbs.

Date of test 2.9.02 Can each boiler be worked separately Yes Area of fire grate in each boiler 54·45 sq. ft No. and Description of safety valves to each boiler Two spring direct Area of each valve 7·07 sq. in Pressure to which they are adjusted 185 lbs. Are they fitted with easing gear Yes

Smallest distance between boilers ~~or uptakes~~ and bunkers ~~or woodwork~~ 18½" Mean dia. of boilers 14'-6" Length 10'-6" Material of shell plates steel

Thickness 1 11/32" Range of tensile strength 28/31·75 Are they welded or flanged no Descrip. of riveting: cir. seams treble long. seams treble

Diameter of rivet holes in long. seams 1 11/32" Pitch of rivets 9⅛" ~~Lap of plates or~~ width of butt straps 19¾"

Percentages of strength of longitudinal joint rivets 86·1 plate 85·2 Working pressure of shell by rules 204 lbs. Size of manhole in shell 13"x16½"

Size of compensating ring 30"x30"x1 11/32" No. and Description of Furnaces in each boiler 3 Morison Material steel Outside diameter 45½"

Length of ~~plain part~~ furnaces top ~~1'-5"~~ bottom 7'-5 25/32" Thickness of plates crown 9/16" bottom 9/16" Description of longitudinal joint weld No. of strengthening rings ✓

Working pressure of furnace by the rules 193 lbs. Combustion chamber plates: Material steel Thickness: Sides 5/8" Back 5/8" Top 5/8" Bottom 15/16"

Pitch of stays to ditto: Sides 7⅞"x7⅞" Back 7⅞" Top 7⅞"x7½" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 214 lbs.

Material of stays steel Diameter at smallest part 1⅜" Area supported by each stay 62 sq. in Working pressure by rules 190 lbs. End plates in steam space:

Material steel Thickness 15/16" Pitch of stays 13½"x15½" How are stays secured Nuts. Working pressure by rules 194 lbs. Material of stays steel

Diameter at smallest part 2½" Area supported by each stay 202 sq. in Working pressure by rules 211 lbs. Material of Front plates at bottom steel

Thickness 13/16" Material of Lower back plate steel Thickness 25/32" Greatest pitch of stays 12 5/8" Working pressure of plate by rules 195 lbs

Diameter of tubes 3½" Pitch of tubes 4⅝" Material of tube plates steel Thickness: Front 1 1/32" Back 25/32" Mean pitch of stays 9¼"

Pitch across wide water spaces 14½" Working pressures by rules 194 lbs. Girders to Chamber tops: Material steel Depth and thickness of girder at centre 7"x1⅝" Length as per rule 29" Distance apart 7¾" Number and pitch of Stays in each 2 — 7⅞"

Working pressure by rules 180 lbs. Superheater or Steam chest; how connected to boiler ✓ Can the superheater be shut off and the boiler worked separately ✓ Diameter ✓ Length ✓ Thickness of shell plates ✓ Material ✓ Description of longitudinal joint ✓ Diam. of rivet holes ✓ Pitch of rivets ✓ Working pressure of shell by rules ✓ Diameter of flue ✓ Material of flue plates ✓ Thickness ✓ stiffened with rings ✓ Distance between rings ✓ Working pressure by rules ✓ End plates: Thickness ✓ How stayed ✓

Working pressure of end plates ✓ Area of safety valves to superheater ✓ Are they fitted with easing gear ✓

WS 85-0275

DONKEY BOILER— No. One Description Cyl. Mult. 2 plain furnace

Made at Stockton By whom made T Sufron & Co Ltd When made 3-10-02 Where fixed Tweendecks

Working pressure 100 lb tested by hydraulic pressure to 200 lb No. of Certificate 2850 Fire grate area 26.6 □' Description of safety valves spring direct

No. of safety valves 2 Area of each 5.94 □" Pressure to which they are adjusted 100 lbs If fitted with easing gear Yes If steam from main boilers can enter the donkey boiler No Dia. of donkey boiler 9'-0" Length 9'-0" Material of shell plates steel Thickness 9/16" Range of tensile strength 27/32 Descrip. of riveting long. seams T. riv. lap Dia. of rivet holes 7/8" Whether punched or drilled drilled Pitch of rivets 4 1/2" 2 rows, 2 1/4" 1 row

Lap of plating 6 5/8" Per centage of strength of joint Rivets 80.5 Plates 80.5 Thickness of end plates top 3/4" 27/8" B.B. 23/32 Radius of do. Pitch of Stays to do. 12" x 16 1/2"

Dia. of stays 2 1/4" eff. T. Diameter of furnace Top 2'-10" Bottom length 7'-8 1/2" Length of furnace top 5'-11 Thickness of furnace plates 7/16" 9/16" Description of joint D.B. strap Thickness of com. ch. plates 9/16" Stayed by 1 1/8" eff. T. stay riv. 9" p. Working pressure of shell by rules 101 lbs

Working pressure of furnace by rules 108 lb. Diameter of tubes 3" Thickness of tube plates 7/8" 3/4" B. 23/32" Thickness of stay tubes 5/16"

SPARE GEAR. State the articles supplied :— 2 Con. rod top, 2 Con. rod bottom, 2 Main bearings and one set of coupling bolts + nuts, one set of feed bilge + cir. pump valves, one set of rings + springs for HP. MP. + LP. pistons, a quantity of bolts nuts + iron. 4 propeller blades, 1/3rd crank shaft, propeller shaft, one pair of crank pin bearings, HP. slide rod, air + cir. pump rod, one link block, pair top and bra[ss]

The foregoing is a correct description,

For RICHARDSONS, WESTGARTH & CO. LIMITED

L. D. Wingate. Manufacturer.

Dates of Survey while building — During progress of work in shops — During erection on board vessel: 1901. Dec. 18. 1902. Jan. 27. 28. 31. Feb. 3. 4. 5. 6. 10. 11. 18. 19. 22. 25. 26. 28. Mar. 13. 24. Apr. 14. 15. 16. 17. May. 6. 7. 8. 9. 10. 12. 13. 14. 15. 16. 17. 21. 22. 23. 26. 27. 28. 29. 30. June 3. 4. 9. 10. 11. 12. 13. 16. 17. 18. 19. 20. 21. 23. 30. July. 2. 3. 4. 7. 8. 9. 10. 12. 14. 15. 17. 18. 19. 21. 22. 23. 24. 25. 26. 28. 29. 31. Aug. 1. 2. 6. 7. 11. 13. 18. 20. 21. 22. 25. 27. Sept. 1. 2. 4. 5. 8. 10. 11. 13. 15. 16. 17. 18. 19. 22. 23. 29. Oct. 1. 8. 10. 13. 14. 15. 16. 17. 20. 21. 22. 23. 24. 27. Nov. 3. 6. 8. 11. 13. Dec. 4. 16. 1904. Apr. 12. 15. 20. 21. 25. 29. May. 4. 10. 11. 14. 16. 18. 31. June. 9. 15. 20. 28. July. 1.

Total No. of visits 146.

Is the approved plan of main boiler forwarded herewith Yes.

" " " donkey " " " Yes.

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

The main steam pipes have been tested by hydraulic pressure to 360 lbs. per sq. in and found tight.

The engines and boilers of this vessel are placed aft, they have been built under Special Survey in accordance with the Rule requirements, the materials and workmanship being good and efficient; when completed and fitted on board were tried under steam at moorings with satisfactory results, and is now eligible, in my opinion, to have ✠ L.M.C. 7,04 marked in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. ✠ LMC 7.04 ELEC LIGHT

B.L. 14.7.04

G.S. 14.7.04

The amount of Entry Fee..	£	7 :	:	When applied for, 12 7 04
Special	£	44 : 10	:	
Donkey Boiler Fee	£	:	:	When received, 16/7/04
Travelling Expenses (if any)	£	:	:	

18/7/04

W. Smith

Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

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

Committee's Minute FRI, 15 JUL 1904

Assigned + LMC 7.04 Elec. light

MACHINERY CERTIFICATE WRITTEN.