

# REPORT ON MACHINERY

No. 17920

REC'D 30 NOV. 1921

Received at London Office

Date of writing Report 7 Nov 1921 When handed in at Local Office 23/11/1921 Port of Greenock  
 No. in Survey held at Port Glasgow Date, First Survey 19<sup>th</sup> Oct. 1920 Last Survey 22<sup>nd</sup> Nov. 1921  
 Reg. Book. on the Steel Steamer "Jau Sang" (Number of Visits 52)  
 Master Built at Port Glasgow By whom built Dunlop Bremner & Co when built 1921  
 Engines made at Port Glasgow By whom made Dunlop Bremner & Co when made 1921  
 Boilers made at Greenock By whom made John S Kincaid & Co when made 1921  
 Registered Horse Power 298 Owners Indo China Steam Nav. Co. Ltd Port belonging to London  
 Nom. Horse Power as per Section 28 298 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

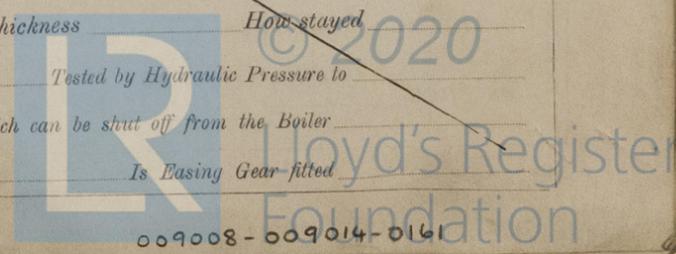
Dunlop Bremner & Co  
Greenock

**ENGINES, &c.**—Description of Engines Triple Compound No. of Cylinders Three No. of Cranks Three  
 Dia. of Cylinders 21 - 34 - 57 Length of Stroke 42 Revs. per minute 78 Dia. of Screw shaft 12.23 Material of screw shaft 1 1/2 in  
 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 57  
 Dia. of Tunnel shaft 10.79 Dia. of Crank shaft journals 11.33 Dia. of Crank pin 11 1/2 Size of Crank webs 15 1/2 in Dia. of thrust shaft under collars 11 1/2 Dia. of screw 15.0 Pitch of Screw 15.0 No. of Blades 4 State whether moveable no Total surface 67 sq ft  
 No. of Feed pumps 3 Diameter of ditto 6 Stroke 21 Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 Diameter of ditto 4 Stroke 21 Can one be overhauled while the other is at work yes  
 No. of Donkey Engines 2 Sizes of Pumps 5.8" x 8.8" No. and size of Suctions connected to both Bilge and Donkey pumps 2 1/2" & 3"  
 In Engine Room 7 from 8' In Holds, &c. 2 1/2" & 3" & 4" & 5"  
 No. of Bilge Injections 2 sizes 8" Connected to condenser, or to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size 4"  
 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 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 yes 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 Deck

**BOILERS, &c.**—(Letter for record S) Manufacturers of Steel Cochrane & Co  
 Total Heating Surface of Boilers 4486 sq ft Is Forced Draft fitted yes No. and Description of Boilers Two Linga Lined  
 Working Pressure 180 lb Tested by hydraulic pressure to 320 lb Date of test 8/6/21 No. of Certificate 1573  
 Can each boiler be worked separately yes Area of fire grate in each boiler 52.5 sq ft No. and Description of Safety Valves to each boiler Two Spring Area of each valve 8.29 sq in Pressure to which they are adjusted 185 lb Are they fitted with easing gear yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork See Report attached hereto Mean dia. of boilers \_\_\_\_\_ Length \_\_\_\_\_ Material of shell plates \_\_\_\_\_  
 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 \_\_\_\_\_ 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: Sides \_\_\_\_\_ Back \_\_\_\_\_ Top \_\_\_\_\_ Bottom \_\_\_\_\_  
 Pitch of stays to ditto: Sides \_\_\_\_\_ Back \_\_\_\_\_ Top \_\_\_\_\_ If stays are fitted with nuts or riveted heads \_\_\_\_\_ Working pressure by rules \_\_\_\_\_  
 Material of stays \_\_\_\_\_ Area at smallest part \_\_\_\_\_ Area supported by each stay \_\_\_\_\_ Working pressure by rules \_\_\_\_\_ End plates in steam space: \_\_\_\_\_  
 Material \_\_\_\_\_ Thickness \_\_\_\_\_ Pitch of stays \_\_\_\_\_ How are stays secured \_\_\_\_\_ 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 \_\_\_\_\_ 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 \_\_\_\_\_

If not, state whether, and when, one will be sent? Is a Report also sent on the Hull of the Ship?



IS A DONKEY BOILER FITTED? *Yes*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— *Two top end bolts. Two bottom end bolts. Two main bearing bolts. One set coupling bolts. One set feed pump valves. One set bilge pump valves. Bolts nuts &c. Propeller shaft 1/3 crank shaft. One pair crank pin bushes. Air pump bucket rod and head valve. One piston rod. One pair main bearing bushes. One slide valve spindle. One Ecc rod & clip. Ten safety valve springs one check valve Bolts nuts &c*

The foregoing is a correct description,  
DUNLOP, BREMNER & COY., LIMITED

*Thos Paton*

Manufacturer.

Director

Dates of Survey while building { During progress of work in shops - - 1920. Oct 19. Nov 5-17-23. Dec. 2-15-17-27. 1921. Jan 12-24-31. Feb 7-10-21-24-25. Mar. 14-18-24. Apr. 1-16-22. May 2-11-19-25.  
During erection on board vessel - - - June 3-17. July 13-29. Aug. 17-18. Sept. 8-9-12-16-21-26-29. Oct. 3-10-12-17-19-24-25-31. Nov. 4-8-15-18-22.  
Total No. of visits 52.

Is the approved plan of main boiler forwarded herewith

Is the approved plan of donkey boiler forwarded herewith

Dates of Examination of principal parts—Cylinders *19/5/21* Slides *16/4/21* Covers *31/1/21* Pistons *31/1/21* Rods *16/4/21*  
Connecting rods *2/5/21* Crank shaft *14/3/21* Thrust shaft *31/1/21* Tunnel shafts *14/3/21* Screw shaft *19/5/21* Propeller *19/5/21*  
Stern tube *16/9/21* Steam pipes tested *19/10/21* & *28/10/21* Engine and boiler seatings *21/9/21* Engines holding down bolts *17/10/21*  
Completion of pumping arrangements *17/10/21* Boilers fixed *24/10/21* Engines tried under steam *4/4/21*  
Completion of fitting sea connections *8/9/21* Stern tube *21/9/21* Screw shaft and propeller *26/9/21*  
Main boiler safety valves adjusted *4/11/21* & *15/11/21* Thickness of adjusting washers *P 5/16 S 5/16 P 4/16 S 1/2*  
Material of Crank shaft *Steel* Identification Mark on Do. *589* Material of Thrust shaft *Steel* Identification Mark on Do. *589*  
Material of Tunnel shafts *Steel* Identification Marks on Do. *589* Material of Screw shafts *Steel* Identification Marks on Do. *589*  
Material of Steam Pipes *Copper* Test pressure *400 lb*  
Is an installation fitted for burning oil fuel *Yes* 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   
Is this machinery duplicate of a previous case *Yes* If so, state name of vessel —

General Remarks (State quality of workmanship, opinions as to class, &c. *Workmanship good.*

*The machinery and boilers of this steamer have been constructed under special survey and placed on board in accordance with the Society's Rules. They are now in my opinion in safe working condition and the case is respectfully submitted for the notification of L.M.C. 11.21 & F.D. in the Register Book.*

It is submitted that this vessel is eligible for THE RECORD. *F L.M.C. - 11.21. F.D. C.L.*

*James Jones*  
*2/12/21.*

GREENOCK

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

The amount of Entry Fee ... £ 4 : 0 :  
*By* Special ... £ 41 : 16 :  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ : :  
When applied for, *23/11/1921.*  
When received, *24/11/1921.*

*James Jones*  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *GLASGOW 29 NOV 1921*

Assigned *1/ L M C 11.21*  
MACHINERY CERT. WRITTEN *30/11/21*  
*5/12/21*



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