

REPORT ON MACHINERY

No. 17847

Received at London Office 16 JUL 1921

Date of writing Report 25 June 1921 When handed in at Local Office 29 June 1921 Port of GreenockNo. in Survey held at Greenock Date, First Survey 24 July 1919 Last Survey 28 June 1921
Reg. Book. on the Steel Screw Steamer Gracia (Number of Visits 167)Tons { Gross
NetMaster Kenneth Macdonald Built at Greenock By whom built Scotts & Co. Ltd. When built 1921Engines made at Greenock By whom made Scotts & Co. Ltd. when made 1921Boilers made at Greenock By whom made Scotts & Co. Ltd. when made 1921Registered Horse Power 236 Owners Donaldson Line Ltd. Dundee Port belonging to GlasgowShaft Horse Power at Full Power 3150 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

TURBINE ENGINES, &c.—Description of Engines The Main Centrifugal Turbine geared to the Propeller Shaft No. of Turbines Two
Diameter of Rotor Shaft Journals, H.P. 4 1/2" L.P. 5 1/2" Diameter of Pinion Shaft 4 P 5" L P 5 1/2"
Diameter of Journals 4 P 5" L P 5 1/2" Distance between Centres of Bearings 2' 6 1/2" Diameter of Pitch Circle 4 P 6' 6" L P 8' 4" 2nd 17' 0"
Diameter of Wheel Shaft 16" Distance between Centres of Bearings 6' 5 1/2" Diameter of Pitch Circle of Wheel 4 P 5' 2" 2nd 8' 5 1/2"
Width of Face 2' 2nd 18" Diameter of Thrust Shaft under Collars 14' 9" and 2 gear wheel Diameter of Tunnel Shaft as per rule 13' 16"
No. of Screw Shafts One Centrifugal Diameter of same as per rule 14' 5" Diameter of Propeller 17' 6" Pitch of Propeller 16' 6"
No. of Blades 4 State whether Moveable yes Total Surface 90 sq ft Diameter of Rotor Drum, H.P. as fitted 14' 4" L.P. as fitted 14' 4"
Thickness at Bottom of Groove, H.P. — L.P. — Astern — Revs. per Minute at Full Power, Turbine 4 P 3500 Propeller 885

PARTICULARS OF BLADING.

	HEIGHT OF BLADES.	H.P.		HEIGHT OF BLADES.	L.P.		HEIGHT OF BLADES.	ASTERN.	
		DIAMETER AT TIP.	NO. OF ROWS.		DIAMETER AT TIP.	NO. OF ROWS.		DIAMETER AT TIP.	NO. OF ROWS.
1ST EXPANSION		<u>30 1/8" mean</u>	<u>2 Rows</u>		<u>42 1/4" mean</u>	<u>1 Row</u>		<u>32 5/8" mean</u>	<u>3 Rows</u>
2ND		<u>29 1/2"</u>	<u>1 Row</u>		<u>43 1/2"</u>				
3RD		<u>29 1/2"</u>			<u>44 1/2"</u>				
4TH		<u>29 1/2"</u>			<u>45 1/2"</u>		<u>L.P.</u>	<u>46" mean</u>	<u>3 Rows</u>
5TH		<u>29 1/2"</u>			<u>46"</u>				
6TH		<u>30 1/8"</u>			<u>47 1/4"</u>				
7TH									
8TH									

No. and size of Feed pumps Two 12" x 21"No. and size of Bilge pumps Two 7" x 8" x 8"No. and size of Bilge suction in Engine Room Four 3 1/2" 4" and 2" 2 1/2"In Holds, &c. 12" 5 1/2" 10" 5 1/2"One 7" x 8" x 8" Bilge Pump & Circulating Pump Separate EnginesNo. of Bilge Injections two sizes 11" Connected to condenser, or to circulating pump yes Is a separate Donkey Suction fitted in Engine Room & size 7" x 5 1/2"Are all the bilge suction pipes fitted with roses yes Are the roses in Engine room always accessible yesAre all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks bothAre 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 belowAre 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 yesWhat pipes are carried through the bunker Gas oil filling & steam, heat & water How are they protected 1/2" steel plate coveringAre all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yesAre the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges yesIs the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from 1st stokeholdBOILERS, &c.—(Letter for record yes) Manufacturers of Steel Readman & Spencer Ltd.Total Heating Surface of Boilers 10468 sq ft Forced Draft fitted yes No. and Description of Boilers Four Single EndedWorking Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 15.2.20 15.2.21 No. of Certificate 1534 1537 1541 1545Can each boiler be worked separately yes Area of fire grate in each boiler 57.4 sq ft No. and Description of Safety Valves toeach boiler Two Spring Area of each valve 7.07" Pressure to which they are adjusted 205 lbs Are they fitted with easing gear yesSmallest distance between boilers or uptakes and bunkers or woodwork 24" Mean dia. of boilers 15' 9" Length 11' 6" Material of shell plates steelThickness 1 1/4" Range of tensile strength 29-32 Are the shell plates welded or flanged no Descrip. of riveting: both seams all in laplong. seams all in lap Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 10 1/2" Lap of plates or width of butt straps 22 7/8"Per centages of strength of longitudinal joint plates 86.95 Working pressure of shell by rules 234 lbs Size of manhole in shell 16" x 12"Size of compensating ring 38" x 30 1/2" x 1 1/4" No. and Description of Furnaces in each Boiler 3 horizontal Material steel Outside diameter 49"Length of plain part top 1 1/2" Thickness of plates bottom 1 1/4" Description of longitudinal joint welded No. of strengthening rings steelWorking pressure of furnace by the rules 227 lbs Combustion chamber plates: Material steel Thickness: Sides 2 1/2" Back 1 1/4" Top 2 1/2" Bottom 1 1/4"Pitch of stays to ditto: Sides 8 1/4" x 8 1/4" Back 8 1/4" x 8 1/4" Top 9" x 8 1/4" If stays are fitted with nuts or riveted heads both Working pressure by rules 208 lbsMaterial of stays steel Diameter at smallest part 2.05" Area supported by each stay 78.75" Working pressure by rules 200 lbs End plates in steam spaceMaterial steel Thickness 1 1/4" Pitch of stays 20" x 16" How are stays secured all in lap Working pressure by rules 204 lbs Material of stays steelDiameter at smallest part 7.24" Area supported by each stay 320" Working pressure by rules 235 lbs Material of Front plates at bottom steelThickness 1 1/4" Material of Lower back plate steel Thickness 1 1/4" Greatest pitch of stays 13 1/2" Working pressure of plate by rules 208 lbsDiameter of tubes 3" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates steel Thickness: Front 1 1/4" Back 2 1/2" Mean pitch of stays 8 1/4"Pitch across wide water spaces 14 1/2" Working pressures by rules 240 lbs Girders to Chamber tops: Material steel Depth andthickness of girder at centre 10 1/2" x 1 1/2" Length as per rule 35" Distance apart 7 1/2" x 9" Number and pitch of stays in each three 8 1/4"Working pressure by rules 205 lbs Steam dome: description of joint to shell — % of strength of joint — Diameter of rivet holes —Thickness of shell plates Material Description of longitudinal joint — Diameter of rivet holes — Pitch of rivets —Working pressure of shell by rules — Crown plates: Thickness — How stayed —

RETAIN

If not, state whether, and when, one will be sent?

Is a Report also sent on the Hull of the Ship?

M.I.L. 12-T.

67400-86372

Lloyd's Register Foundation

