

Report on Steam Turbine Machinery.

Bel. 15464

No. 125635

21 OCT 1952

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Report made at PETERBOROUGH Date, First Survey 1st July Last Survey 19th Sept 1952.
 Survey held at PETERBOROUGH Date, First Survey 1st July Last Survey 19th Sept 1952.
 Name of the T.W. S.S. "BRAEMAR CASTLE" (Number of Visits 10)
 By whom built Harland & Wolff Ltd Yard No. 1459 When built 1952-9
 By whom made Peter Brotherhood Ltd Engine No. 20600F When made 1952-9
 By whom made Union Castle M.S.S. Co Ltd Boiler No. 10 When made 1952-9
 Owners Union Castle M.S.S. Co Ltd Port belonging to London
 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes
 Which Vessel is intended Belbark

TURBINE ENGINES, &c.—Description of Engines.

Ahead Direct coupled, single reduction geared to propelling shafts. No. of primary pinions to each set of reduction gearing 1.
 Astern Double reduction geared
 Alternating Current Generator phase periods per second rated 750 Kilowatts 225 Volts at 800 revolutions per minute;
 Direct Current Generator rated 750 Kilowatts 225 Volts at 800 revolutions per minute;
 power for driving Propelling Motors, Type Direct coupled, single or double reduction geared to propelling shafts.
 Kilowatts 750 Volts at 225 revolutions per minute.

H. P.			I. P.			L. P.			ASTERN.		
HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
0.7"											
1.76"											
8.45"											
9.45"											
1.11"											
1.67"											
2.47"											
3.16"											
4.85"											

Power at each turbine H.P. 6000 I.P. 1st reduction wheel 800 L.P. main shaft 800
 Diameter at journals H.P. 3 1/2" Pitch Circle Diameter 1st pinion 6.10847 1st reduction wheel 45.8846" Width of Face 1st reduction wheel 10"
I.P. 2nd pinion main wheel 9 3/4" main wheel 10 3/4"
L.P. 1st pinion 9 3/4" 1st reduction wheel 5.88587"
2nd pinion main wheel 10 3/4"
 Green centres of pinion and wheel faces and the centre of the adjacent bearings 1st 5.88587" 2nd 10 3/4"

Pinion Shafts, diameter at bearings External 1st 4 1/4" 2nd diameter at bottom of pinion teeth 1st 5.88587"
Internal 1st 4 1/4" 2nd diameter at bottom of pinion teeth 1st 5.88587"
 diameter at bearings 1st 5 1/2" 7 1/2" diameter at wheel shroud 1st 46.0446" Generator Shaft, diameter at bearings 2nd 10 3/4"
 as per rule main Propelling Motor Shaft, diameter at bearings as per rule Thrust Shaft, diameter at collars as per rule
 as fitted as fitted as fitted as fitted Is the tube screw shaft fitted with a continuous liner as fitted
 thickness in way of bushes as per rule Thickness between bushes as per rule Is the after end of the liner made watertight in the
as fitted as fitted as fitted as fitted Is the after end of the liner made watertight in the

If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner Yes
 Is 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
 Is fitted, is the shaft lapped or protected between the liners Yes Is an approved Oil Gland or other appliance fitted at the after end of the tube Yes
 If so, state type Length of Bearing in Stern Bush next to and supporting propeller Total Developed Surface square feet
Pitch No. of Bades State whether Moveable Can the H.P. or I.P. Turbines exhaust direct to the
are arrangements made so that steam can be led direct to the L.P. Turbine No. of Turbines fitted with astern wheels Feed Pumps No. and size How driven
ed to the Main Bilge Line No. and size How driven Lubricating Oil Pumps, including Spare Pump, No. and size One
No. and size Independent means arranged for circulating water through the Oil Cooler Suctions, connected both to Main Bilge Pumps and Auxiliary
In Engine and Boiler Room In Pump Room

Circulating Pump Direct Bilge Suctions, No. and size Independent Power Pump Direct Suctions to the Engine Room
 size Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes
 Suctions in the Machinery Space led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges Yes
 Connections fitted direct on the skin of the ship Are they fitted with Valves or Cocks
 Efficiently high on the ship's side to be seen without lifting the stokehold plates Are the Overboard Discharges above or below the deep water
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Are the Blow Off Cocks fitted with a spigot and brass
 What pipes pass through the bunkers How are they protected
 through the deep tanks Have they been tested as per rule
 Cocks, Valves and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes
 ent of valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery
 ne compartment to another Is the Shaft Tunnel watertight Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record.....) Total Heating Surface of Boilers.....

Is Forced Draft fitted..... No. and Description of Boilers..... Working Pressure.....
 Is a Report on Main Boilers now forwarded?.....
 Is { a Donkey } Boiler fitted?..... If so, is a report now forwarded?.....
 { an Auxiliary }
 Is the donkey boiler intended to be used for domestic purposes only.....
 Plans. Are approved plans forwarded herewith for Shafting..... Main Boilers..... Auxiliary Boilers..... Donkey Boilers.....
 (If not, state date of approval)
 Superheaters..... General Pumping Arrangements..... Oil Fuel Burning Arrangements.....

SPARE GEAR.

Has the spare gear required by the Rules been supplied..... *Yes*
 State the principal additional spare gear supplied..... *One set of gland packings, 1 oil strainer,
 1 Governor valve, spindle, and seat, set of wearing parts, all springs,
 1 Set ejector nozzle,
 1 extraction pump and circulating pump impellers, shafts, and packings,
 1 closed feed system valve, float, and lever.*

The foregoing is a correct description,

Dates of Survey while building { During progress of work in shops - - July 1st Aug 15-22-26-29 Sept 1-5-12-17-19
 { During erection on board vessel - - -
 Total No. of visits..... *Ten. (in shops)*
 Dates of Examination of principal parts—Casings..... 22-26-8-52 Rotors..... Blading..... Gearing.....
 Wheel shaft..... Thrust shaft..... Intermediate shafts..... Tube shaft..... Screw shaft.....
 Propeller..... Stern tube..... Engine and boiler seatings..... Engine holding down bolts.....
 Completion of fitting sea connections..... Completion of pumping arrangements..... Boilers fixed..... Engines tried under steam.....
 Main boiler safety valves adjusted..... Thickness of adjusting washers.....
 Rotor shaft, Material and tensile strength..... *Siemens Steel 62.4 Ton/in²* Identification Mark..... *LLOYD'S*
 Flexible Pinion Shaft, Material and tensile strength..... Identification Mark.....
 Pinion shaft, Material and tensile strength..... *Siemens Steel 44.6/46.2 Ton/in²* Identification Mark..... *J.P. (ween)*
 Reduction Wheel ^{Rims} Shaft, Material and tensile strength..... *Siemens Steel 32.8/31 Ton/in²* Identification Mark..... *TEP. 61*
 Wheel shaft, Material..... *Steel* Identification Mark..... *LLOYD'S 461* Thrust shaft, Material..... Identification Mark.....
 Intermediate shafts, Material..... Identification Marks..... Tube shaft, Material..... Identification Marks.....
 Screw shaft, Material..... Identification Marks..... Steam Pipes, Material..... Test pressure.....
 Date of test..... *17.9.52* Is an installation fitted for burning oil fuel.....
 Is the flash point of the oil to be used over 150°F..... Have the requirements of the Rules for the use of oil as fuel been complied with.....
 Is the vessel (not being an oil tanker) fitted for carrying oil as cargo..... If so, have the requirements of the Rules been complied with.....
 If the notation for ice strengthening is desired, state whether the requirements in this respect have been complied with.....
 Is this machinery a duplicate of a previous case..... *Set N° 20600 E* If so, state name of vessel..... *BRAEMAR CASTLE*
 (For new vessel.)

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

This turbo generator has been built under survey, in accordance with approved plans and of the Rules. Steel used in its manufacture has been made at works approved by the Society under the supervision of the Society's Surveyors. The workmanship is good and the machine is fit, in our opinion, to be fitted aboard a vessel chartered with this Society. Satisfactory shop trials have been held at the maker's works, but overload tests unsatisfactory due to facilities not being available and should be completed on board. The turbine is coupled to Harland & Wolff Generator N° 10484. and the set is on board S/S "BRAEMAR CASTLE".

The amount of Entry Fee ... £ 32 : 0 : 0 When applied for.
 Special ... £ : : 21 OCT 1952
 Donkey Boiler Fee ... £ : : When received.
 Travelling Expenses (if any) £ 5 : 5 : 19

Committee's Minute..... TUES. 16 DEC 1952

Assigned..... *See P.E. mch. rep. Bel 15464*

F.H. Sutcliffe & J. Smith
 Engineer Surveyor to Lloyd's Register of Shipping

This Generating Unit was installed on board in a satisfactory manner, examined under full working conditions with satisfactory results.

W.B. Smart
Belfast

Lloyd's Register
 Foundation