

Rpt. 9. No. 16340  
**REPORT OF SURVEY FOR REPAIRS, &c., OF ENGINES & BOILERS**

(Received at London Office 11 JAN 1955)

Date of writing Report 19... When handed in at Local Office 19... Port of **CALCUTTA**  
 No. in Survey held at **CALCUTTA** Date, First Survey **2-7-53** Last Survey **30-11-1954**  
 Reg. Book. **26101-765A** (No. of Visits **35**)  
 on the Machinery of the Wood, Iron or Steel **Tw. Sc. M.V. "SANGOLA"**  
 Tonnage { Gross **8646** Vessel built at **Whiteinch** By whom **Barclay Curle & Co. Ltd.,** When **1947** Month **6**  
 Net **8369** Engines made at **Glasgow** By whom **Barclay Curle & Co. Ltd.** When **1947**  
 Nominal Horse Power { **1235** Boilers, when made (Main) / (Donkey) **1947**  
 No. of Main Boilers **1** Owners **B.I.S. Navigation Co. Ltd.,** Owners' Address /  
 No. of Donkey Boilers **2** Managers / Port **LONDON** Voyage /  
 Steam Pressure—  
 In Main Boilers **120 lbs** If Surveyed Afloat or in Dry Dock **Both.** Particulars of Classification  
 In Donkey Boilers **120 lbs** (State name of Dock) **King George Dock & Drydock** (which must be inserted precisely as in Register Book & Supplements)

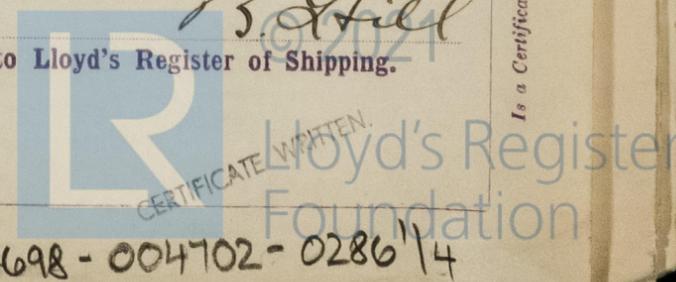
Particulars of Examination and Repairs (if any) **LMC.CS, DBS, DKG(TS) +100 A1 AND DAMAGE.**  
 (Periodical Surveys, when held, must be reported in detail and serially in the terms of the Rules.) State clearly the cause of repairs.  
 If any, and, in detail, the nature and extent of Examinations and subsequent Repairs. Repairs on account of Damage (the cause of which must be stated) should be separated from Repairs due to other causes; and besides being detailed in the body of the Report, should be briefly summarised at the end of the report. State also the dates and initials of any letters respecting this case.  
 In damage cases where the Surveyor has not made a special damage report he is required to state whether he offered his services for this purpose, and why they were declined **OFFERED - NOT REQUIRED**  
 Was damage report made by anyone else? If so, by whom? **YES. UNDERWRITERS SURVEYOR**  
 Did the Surveyor personally go inside each Main Boiler separately and make a thorough examination at this time?   
 " " Donkey " " " **YES**  
 If this was not done, state for what reasons **NONE**  
 And what parts of the Boilers could not be thus thoroughly examined? **NONE**  
 Also what special means, in the absence of internal examination, were adopted by the Surveyor to assure himself of the thorough efficiency of those parts of each Boiler? **PROGRESSIVE SURVEY**  
 State latest date of internal examination of each boiler **PORT 18-8-54, STBD 20-11-54** Present condition of funnel **GOOD**  
 Did the Surveyor examine the Safety Valves of the Main Boiler?  To what pressure were they afterwards adjusted under steam?   
 Did the Surveyor examine the Safety Valves of the Donkey Boiler? **YES** To what pressure were they afterwards adjusted under steam? **120 lb/0**  
 Did the Surveyor examine all the manholes, doors and their fastenings of the Main Boilers?  , and of the Donkey Boilers? **YES**  
 Did the Surveyor examine the drain plugs of the Main Boilers?  , and of the Donkey Boilers? **NONE FITTED**  
 Did the Surveyor examine all the mountings of the Main Boilers?  , and of the Donkey Boilers? **YES**  
 Has the screw shaft now been drawn and examined? **YES** Is it fitted with continuous liner? **YES** Is an approved appliance fitted at the after end of the shaft to permit of it being efficiently lubricated?   
 Has shaft now been changed? **No** If so, state reasons  
 Has the shaft now fitted been previously used?  Has it a continuous liner?  Is an approved appliance fitted at the after end of the shaft to permit of it being efficiently lubricated?   
 State date of examination of Screw Shafts **18-5-54** State the distance between lignum vitae or bearing metal of stern bush and top of after bearing of screw shaft **P+S - CLOSE FIT.**  
 Engine parts, when referred to by numbers, should be counted from forward. Is electric light and/or power fitted? **YES**  
 If so, did the Surveyor examine the generators, motors, switchgear, cables and fuses? **YES**  
 Has the insulation resistance of the generators, circuits and apparatus been tested and found to be not less than 100,000 ohms? **YES**  
 If the Survey is not complete, state what arrangements have been made for its completion and what remains to be done **COMPLETE.**

**Now Done for LMC.CS** On account of the vessels grounding and flooding of the engine room, the previous items surveyed on the Continuous Survey basis are cancelled and a complete survey now held.  
 The following items opened up and examined:-  
**Main Engines.** Port and Starboard main engine cylinders, liners, pistons and rods, valves and gears, overhead beam pins and bushes, guides, top and bottom end pins and bearings, (side and centre), connecting rods, main bearings, thrust shafts, bearings and seatings, intermediate shafts and bearings, scavenge pump cylinders, pistons valves and bearings attached S.W., F.W., and lubricating oil pumps, detuners, fuel pumps and reversing gears.  
**Auxiliaries** Three air reservoirs and all mountings.  
**Two compressors, steam driving engines and coolers (tested).**

**General Observations, Opinion, and Recommendation:—** **P.T.O.**  
 (State clearly what alteration, if any, is suggested to be made in the existing classification of the vessel's machinery in the Register Book, consequent upon this survey, and also any alteration required to be made in the records of the vessel's machinery, boilers, working pressures, &c., thus, for example, B.S.9,11, B.&M.S. 9,11, \*L.M.C. 9,11 or \*L.M.C. 140 lb., F.D., &c.)  
 The machinery of this vessel is in good condition and eligible to remain as classed with fresh record of **+LMC CS 11-54, D.B.S.11-54, and Screwshafts seen 11-54 now.**

Survey Fee (per Section 29) **LMC. Rs.2190/-** : Fees applied for **28-12-1954**  
 Special Damage or Repair Fee (if any) **DBS. 320/-** :  
 (per Section 29) **TS. 256/-** : Received by me, **B. Hill**  
 Travelling expenses (if chargeable) **140/-** : 19  
 Engineer Surveyor to Lloyd's Register of Shipping.  
 Committee's Minute  
 Assigned **+LMC 11.54**  
**DBS 11.54**  
**Both 5 11.54 and 11.54**  
 004698 - 004702 - 0286/14

Insert Character of Ship and Machinery precisely as in the Register Book. Is a Certificate required? If so, to be sent to



Independent F.W. piston and jacket cooling water pump.

Independent lubricating oil pump.

Two valve cooling pumps.

The ballast pump.

One combined air and circulating pump and steam driving engine.

Two general service pumps.

Two sanitary pumps.

Two fresh water (domestic) pumps.

Two feed pumps and condenser (tested).

Two transfer pumps.

Boiler oil fuel pressure pumps, heaters filters and valves (Heaters tested).

Windlass and steering gear.

Both evaporators, the distiller and mountings opened and examined and subsequently the S.V's adjusted to 25 lbs per sq.in.

All holding down bolts and chocks (Main and Auxiliary).

All steam pressure piping removed, examined and tested under hydraulic pressure of 300 lbs per sq.in.

Valves, valve chests and piping of the pumping arrangements examined and tested.

All boiler and diesel oil storage and settling tanks, valves and control gear examined and tested.

A number of minor W&T repairs carried out and all placed in good condition.

#### Now Done for D.B.S.

Both donkey boilers removed ashore, all cleading and lagging removed and the boilers examined internally and externally with all mountings and fastenings.

#### Repairs (W & T).

Port boiler, exhaust gas box, all tubes renewed.

Starboard boiler, all plain tubes renewed.

Subsequently both boilers refitted, tested under hydraulic pressure to 120 lbs per sq.in., lagging and cleading refitted, the boilers examined under steam the safety valves adjusted and the oil fuel and steam smothering installation examined and tested.

#### Now Done for Docking (TS).

Vessel placed in drydock.

Propellers, stern bushes, outside fastenings, sea valves and cocks opened up and examined. Both screwshafts drawn inboard and examined.

Stern bushes rewooded.

Two G.M. 3" diameter sea valves fitted for emergency fire pumps, secured to 1 1/4" thick M.S. pads electrically welded to the shell plating, one after end of tunnel and one in the fore peak tank.

Satisfactorily hose tested on completion.

#### Electrical Installation

Electrical installation examined and tested under working conditions.

Fittings on the main and distribution boards and the cables examined.

All circuits tested for insulation resistance and all found satisfactory.

Damage (1) stated to have been caused by grounding at Hiragunj sands in the River

Hooghly on 1st July 1954.

Permanent Repairs

Port and Starboard main engines opened up in their entirety, all parts cleaned overhauled and refitted in good condition.

All exhaust piping from forward of the engine, removed examined and refitted.

Thrust and intermediate shafting and bearings opened up cleaned and refitted.

Piston and jacket F.W. cooling pump, two valve cooling pumps, two feed pumps, two transfer pumps, the oil fuel installation, two turning engines, two compressors and their steam driving engines, three steam driven generator engines, two main engine priming pumps, two domestic <sup>F.</sup>W. and one domestic hot salt water pumps opened up, cleaned and refitted.

Two evaporators opened up and tested hydraulically to 50 lbs per sq.in, all mountings removed and tested hydraulically to 300 lbs per sq.in. The feed water heater opened up, cleaned examined and tested.

Three oil fuel purifiers removed, despatched to the makers, overhauled and refitted.

Main engine piston cooling water tank opened up cleaned faired and refitted with new stools.

Main engine valve cooling water tank opened up, cleaned and refitted.

All above tank heating and cooling coils tested hydraulically.

Three air reservoirs opened up with all mountings, cleaned and refitted.

Both boilers removed ashore, cleading and lagging removed, all mountings removed from shell, boilers tested hydraulically to W.P. (120 lbs/sq.in) and all mountings tested to 300 lbs per sq.in. Subsequently boilers refitted, lagging and cleading replaced and all connections made good.

Oil fuel installation, pumps, heaters filters, valves, pressure piping, removed overhauled, and heaters and pressure piping tested to 400 lbs per sq.in.

Two new transfer pumps fitted marked 279684 and 5 - L.R. 22-2-54 - 200 lbs.

Starboard boiler main steam distribution C.I. valve chest renewed. (Tested 300 lbs per sq.in).

All ballast, bilge, oil fuel, fresh water and salt water piping, valves and valve chests, branch pieces from the forward end of the engine room to the deep tank bulkhead removed, and all broken and damaged parts renewed and all pipelines subsequently tested to rule requirements.

All bunker tanks, settling, rectified, boiler and diesel oil tanks, lubricating oil storage tanks cleaned, fittings overhauled and tanks tested to rule requirements.

Main engine and auxiliary engine bedplates and holding down bolts specially examined and placed in good condition.

Forward compressor bedplate and main bearings renewed.

Electrical Installation

All three generators, two main engine priming pump motors, two valve cooling pump motors, three purifier motors including starters, removed, dismantled, armatures and field coils rewound, commutators and bearings overhauled, reassembled tested and refitted.

Engine room, stokehold and tunnel, in their entirety and the main, upper, bridge, promenade and boat decks within the limits of the damage, navigating bridge deck and master's house rewired and all electrical fittings overhauled or renewed as required.

Main switchboard completely overhauled, all wiring including main cables to generators, ammeters and voltmeters renewed, circuit breakers, switches, rheostats, fuse bridges and fittings removed overhauled and refitted.

All wiring to engine room motors renewed.

Submersible emergency fire and bilge pump opened up and overhauled.

Damage (2) stated to be due to refloating operations after the above grounding.

Permanent Repairs

Steering gear steam driving engine, oil pump, hydraulic rams and telemotor gear opened up and placed in good condition.

Windlass opened up and placed in good condition.

Main engine top and bottom end bearings, main bearings, thrusts, attached and independent S.W. cooling pumps, condensers, all coolers, general service pumps, air and circulating water pumps, sanitary pumps, emergency generator, forced draft fan engine opened up, cleaned and placed in good condition.

Vessel placed in drydock.

Propellers, screwshafts drawn inboard, sea connections examined, placed in good condition, stern bushes rewooded.

On completion of damage repairs main engines and auxiliaries examined under full power conditions during sea trials and all found in good order.

*B. Hill*

Steering Gear:

Now Done:- New emergency steering gear pump complete with electric driving motor now fitted.

The arrangement is now such that either the steam engine driven pump or the electrically driven pump can operate the gear independently or in conjunction.

Identification Stamping:-

Motor: Laurence Scott 1954 No. 228879

Pump: Vickers Armstrong VSG MK111 No. A52654

After installation of the new pump the steering gear was examined while working and found satisfactory.

*B. Hill*