

REPORT OF SURVEY FOR REPAIRS, &c., OF ENGINES AND BOILERS

(Received at London Office

31 MAY 1951

Date of writing Report **16th May, 1951** When handed in at Local Office _____ Port of **Bremen**

No in Reg. Book. Survey held at **Bremerhaven** Date. First Survey **23rd February** Last Survey **30th March 1951**

90764s on the Machinery of the **Wood, Iron or Steel** **S.S. "CROSTAFELS"**

Gross ~~4476~~ **6036** Vessel built at **Birkenhead** By whom **Cammell Laird & Co. Ltd.** Year. **1928** Month **7**
 Net **3754** Engines made at **Birkenhead** By whom **Cammell Laird & Co. Ltd.** When **1928** -
 Main Boilers **2** Boilers, when made (Main) **1928** (Donkey) **1928** -
 Owners **Deutsche DampfschiffahrtsGes. "Hansa"** Owners' Address _____
 Managers _____ Port **Bremen** Voyage _____
 If Surveyed Afloat or in Dry Dock **Both**
 (State name of Dock.) **(Norddeutscher Lloyd)**

Particulars of Classification (which must be inserted precisely as in Register Book & Supplement)

CHARACTER * for Special Survey. Date of last Survey and of Periodical Surveys.	Year last survey expired.	Machinery and Boiler Surveys (including date of N.L. if any)
1100 Al 10.49 Liv		/LMC
ssLiv.-9,46		MS 10.46
		BS 5.50
		CL 12.48

Report No. _____ Port _____
 Particulars of Examination and Repairs (if any) **LMC, O.F. COVERSION, TS CL**
 Medical Surveys, when held, must be reported in detail and seriatim in the terms of the Rules. State clearly 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, detailed in the body of the report, should be briefly summarised at the end of the report. State also the dates and nature of any letters respecting this case. **Ship 8.2.51**

Where 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. _____
 A damage report made by anyone else? If so, by whom? _____
 Did the Surveyor personally go inside each Main Boiler separately and make a through examination at this time? **yes**
 " " Donkey " " " **yes**
 State for what reasons _____ What parts of the Boilers could not be thus thoroughly examined? _____
 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? _____
 Latest date of internal examination of each boiler **P & S 16.3.51, DB 27.2.51** Present condition of Panel(s) **efficient**
 Did the Surveyor examine the Safety Valves of the Main Boilers? **yes** To what pressure were they afterwards adjusted under steam? **210 lbs**
 Did the Surveyor examine the Safety Valves of the Donkey Boilers? **yes** To what pressure were they afterwards adjusted under steam? **100 lbs (see below)**
 Did the Surveyor examine all the manholes, doors and their fastenings of the Main Boilers? **yes** and of the Donkey Boilers? **yes**
 Did the Surveyor examine the drain plugs of the Main Boilers? _____ and of the Donkey Boilers? _____
 Did the Surveyor examine all the mountings of the Main Boilers? **yes** and of the Donkey Boilers? **yes**
 Has the screw shaft now been drawn and examined? **yes** Has it a continuous liner? **yes** Is an approved oil retaining appliance fitted at the after end? **no**
 Has the shaft now fitted been previously used? _____ Has it a continuous liner? _____
 Has an approved oil retaining appliance fitted at the after end? _____ State date of examination of Screw Shaft **27.2.51** State the wear down in the stern bush **running fit** 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**
 The parts, when referred to by numbers, should be counted from forward. Auxiliary machinery should be referred to by position in Machinery Space.
 Is the Survey not complete, state what arrangements have been made for its completion and what remains to be done. **complete**

DONE: Vessel placed in dry-dock, examined propeller and outside fastenings, sea valves (opened), screw shaft (drawn), stern bush.
 Examined opened up, main engine cylinders, pistons, covers, valves and valve chests, rods, crank, thrust and intermediate shafts and bearings, condensers (tested), attached and auxiliary pumps and pumping arrangements, feed heater and evaporator (tested), holding-down bolts, steam pipes (steel), tested and examined as per Rules.
 Port and starboard main and donkey boilers examined in their entirety with their superheaters (main), mountings, doors and fastenings. Safety valves adjusted under steam to above stated pressures.
 Steam and electrical installation tested and examined.
WEAR AND TEAR REPAIRS: Top half of stern bush rewooded (wear). All piston and H.P. and I.P. valve-rods skimmed and ends renewed (wear). L.P. spare valve rod fitted (wear).
 Bottom halves of main bearings re-white metalled and shaft re-bedded and aligned satisfactorily (cracked). All bottom end bearings re-white metalled (cracked). Intermediate shaft aftermost bearing re-white metalled (splayed out).

P.T.O.
 General Observations, Opinion, and Recommendation.— The machinery of this vessel so far as seen is in good condition. (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, BS 9.11, B&MS 9.11, *LMC 9.11 or *LMC 140 lb., FD, &c.)
 I am and eligible in my opinion to remain as classed in the Register Book with fresh record of LMC 3.51, TS CL 2.51, and notation of "Fitted for oil fuel 3.51 F.P. above 150° F", subject to main boiler furnaces being renewed by 3.52 year's limit).

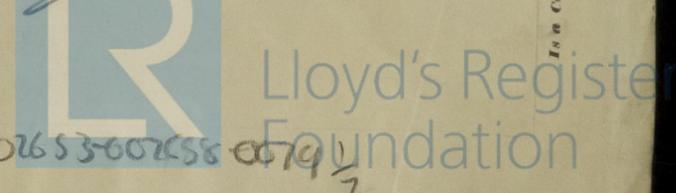
Survey Fee (per Section 20)	LMC	54	0	0
Special Damage or Repair Fee (if any) (per Section 21)	TSCL	4	0	0
Working expenses (per Section 22)	Repairs	15	0	0
	OF Conversion	50	0	0
	EL. Installation	8	0	0
Committee's Minute Trav. Exp.		7	0	0

Fee applied for **1950** returned **1951**
 Received by me, **W. H. Allen**
4.49

TUES. 31 JUL 1951

Signed **See Sign. 18139.**

W. H. Allen
 Engineer Surveyor to Lloyd's Register of Shipping.



Insert Character of Ship and Machinery precisely as in the Register Book.

Is a Certificate required? If so, to be sent to _____

002653-602558 0079 7

About 70 tubes in main condenser renewed (erosion). Cast iron inlet pipe to condenser renewed, (cracked at f
Attached pump rams skimmed and glands rebushed. Attached pump lever fulcrum bracket (Q1) renewed in fabricat
(cracked).

Main feed pump valves renewed (wear), and pumps overhauled. Ballast pump liner (water end), renewed (wear),
pump overhauled. Fan and engines, one unit, renewed (wear). Circulating pump clearance rings fitted and engi
valve and liner renewed. Bilge and ballast lines overhauled, tested and part renewed as necessary.

MAIN BOILERS: All plain tubes renewed. All superheater elements renewed (wasted). Elements tested hydraulica
Feed check valves renewed. Existing water gauge columns removed and new double water gauge columns fitted on
boiler in accordance with Rules (Owners' arrangements).

All furnaces jacked back into place.
After jacking back the furnaces, surface cracks were found in the crown of a number of the furnaces. The cra
were veed out and electric welded as follows: -

PORT BOILER: -

- After centre furnace - 2 cracks
- Forward centre furnace - 1 crack
- Forward port furnace - 1 crack
- Forward starboard furnace - 3 cracks

STARBOARD BOILER: -

Forward centre furnace: The cracks in the case of this boiler were more extensive and a part of the crown
in way of the cracks, approx. 30" long by half the circumference, was cropped and renewed. Material tests of
the plate removed showed the strength of the steel to be low.

Other minor cracks in the furnaces were veed out and electric welded.
In view of the general condition of these furnaces, it is recommended that the furnaces of both boilers be
renewed by 3.52.

Local corroded areas of the furnaces along the line of fire bars, water side, of the tube plates and combu
chambers built up by electric welding. About 20 c.c. stays renewed in each boiler (wasted).
On completion of repairs, both boilers subjected to a hydraulic test with satisfactory results.

NOTE: Donkey boiler safety-valves adjusted to 100 lbs/sq.in. (Owners' arrangement).
Quayside trials of main engines and auxiliaries carried out with satisfactory results.

ELECTRICAL INSTALLATION (12.5 & 11.4 KW Sets).

Both dynamos removed ashore, cleaned, megger tested and overhauled.
Boiler room and engine-room wiring part renewed. Lighting wiring and fittings in aft accommodation (altere
renewed. Additional light points under boilers and at oil fuel overflow sight glass fitted.
Switchboard and all main and distribution switches and meters renewed.
Insulation resistance of all circuits tested on completion and found or made satisfactory.
Dynamos examined under working conditions and found satisfactory.

CONVERSION TO OIL FUEL BURNING: The main and donkey boilers have been converted to oil fuel burning. The
of the boilers have been modified and Todd type boiler fronts fitted.
Todd's type of oil fuel units (duplex), hand starting unit and transfer pump satisfactorily installed on
welded seatings to double bottom tank top between boiler and engine-room spaces. Oil fuel filling, hot oil
and steam smothering, bilge and oily bilge lines, ballast line/oil fuel lines change-over devices satisfact
installed and tested in accordance with approved plans and amendments, and Rule requirements.

CONTINUED.....

S.S. "CROSTAFELS"

On completion, boilers examined under steam and installation examined under working conditions and
all found satisfactory. Deck controls to oil fuel valves on settling and side bunker tanks, to steam
valves to units, fan engine and transfer pump and steam smothering system examined and tested and
found satisfactory.

ADDITIONAL MACHINERY: Todd's oil fuel unit, two Weirs pressure pumps Nos.244755/6 and transfer pump
No.242768, Heaters and filters Nos.T 1989, LLOYD'S TEST, test pressure and date.

h.c.