Rpt. 9.

No. 106075

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

(Received at London Office 15 FEB 1950)

Date of writing Report ____ 19 ____ When handed in at Local Office 10 FEB 1950 19 ____ Port of NEWCASTLE-ON-TYNE

No. in Reg. Book. 11136 — Survey held at Jarrow-on-Tyne — Date. First Survey 7th Sept 1949 Last Survey 16th Jan 1950 (No. of visits 33)

on the Machinery of the ~~Wood, Iron or~~ Steel S/S "Grandyke" to be named "Benwannoch"

Tonnage 3626 — Gross 7069 — Net 4079

Vessel built at Sunderland — By whom Shipbuilding Corp Ltd (Wear Branch) — When Year 1944 Month 4

Engines made at Dumbarton — By whom Wm Denny & Bros Ltd — When 1944

Nominal Horse Power 510 MN

No. of Main Boilers 3 SB (Spt) — Boilers, when made (Main) 1944 (Donkey) ✓

No. of Donkey Boilers ✓ — Owners Ben Line Steamers Ltd — Owners' Address ✓ (if not already recorded in Appendix to Register Book.)

Steam Pressure in Main Boilers 220 lbs — Managers Wm Thomson and Co. — Port London to be altered to Leith — Voyage ✓

in Donkey Boilers ✓ — If Surveyed Afloat or in Dry Dock Afloat & in dry dock at (State name of Dock.) Palmers-Hebburn Ld, Jarrow-on-Tyne

Last Report No. ____ Port ____

## Particulars of Examination and Repairs (if any)

LMC; T.S; DAMAGE; SRL; OIL FUEL CONVERSION

*Periodical Surveys, when held, must be reported in detail and seriatim 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 Yes Not required Damage No. 1, 2 & 3. Buckland & Young Underwriters Surveyors.

Was a damage report made by anyone else? If so, by whom? Damage No 4 Alex. Coull & Co. " "

Did the Surveyor personally go inside each Main Boiler separately and make a thorough examination at this time? Yes

" " Donkey " " " ✓

If this was not done, state for what reasons ✓

And what parts of the Boilers could not be thus thoroughly examined? ✓

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? ✓

State latest date of internal examination of each boiler Port 13/12/49, Centre 2/12/49, Stard 2/12/49 Present condition of funnel(s) Efficient

Did the Surveyor examine the Safety Valves of the Main Boiler? Yes To what pressure were they afterwards adjusted under steam? 220 lbs

Did the Surveyor examine the Safety Valves of Donkey Boiler? ✓ To what pressure were they afterwards adjusted under steam? ✓

Did the Surveyor examine all the manholes, doors and their fastenings of the Main Boilers? Yes, and of the Donkey Boilers? ✓

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? ✓

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? No

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 Shaft 19/12/49 State the distance between lignum vitæ ~~or bearing metal of~~ stern bush and top of after bearing of screw shaft 3/64" Rewooded

*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

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

| CHARACTER. ✠ for Special Survey Date of last Survey and of Periodical Surveys. | Years assigned now expired. | Machinery and Boiler Surveys (including date of N.B., if any). |
|---|---|---|
| ✠ 100 A1 with freeboard 9,48 | | ✠ LMC 7,44 BS 7,48. CL 6,47 |

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

Now done:- Vessel in dry dock - ex'd propeller; ends of sterntube; outside fastenings of the sea connections; sea valves and cocks opened up; screwshaft (CL) drawn in; all found or placed in efficient working order.

LMC Survey:- Ex'd. opened up - all main engine cylinders, pistons, valves, and chests; crankshaft complete; thrust and intermediate shafts; attached air and bilge pumps; main condenser (tested).

Auxs. Circulating pump and engine; two independent feed pumps; General Service Pump; ballast pump; F.D. Fan Engine; two generator engines; H.P. Feed Heater; aux. condenser (tested); pumpings arrangements under working conditions; windlass and steering engines. The Electrical Installation Ex'd See Sheet No 1. See Sheet No 2.

General Observations, Opinion, and Recommendation:— The machinery of this vessel is eligible

*(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 ✠ LMC C&S 3.34 140 lb., F.D., &c.)*

in my opinion to remain as classed with fresh records of ✠ LMC 1,50; T.S. (CL) 12,49; "Fitted for Oil Fuel 1,50 F.P. ~~above~~ 150°F.", and the items in the S.R.L. regarding the main condenser water box; forward door of aux. condenser; and the centre furnaces of the centre and stard boilers may now be deleted.

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

| | | |
|---|---|---|
| Survey Fee (per Section 29) | ✠ LMC | £32 : 0 : 0 |
| | T.S. | £3 : 0 : 0 |
| | ELECTRICAL L.M.C. | £5 : 0 : 0 |
| Special ~~Damage or~~ Repair Fee (if any) (per Section 29.) | | £10 : 10 : 0 |
| | DAMAGES (Nos 1,2&3) | £31 : 10 : 0 |
| ~~Travelling expenses (if chargeable)~~ | DAMAGE (No 4) | £10 : 10 : 0 |
| | OIL FUEL CONVERSION | £15 : 15 : 0 |
| | FITTING NEW GENTR. | £6 : 6 : 0 |

Fees applied for 13 FEB 1950 19 ____

Received by me, ____ 19 ____

J. W. Singleton for R. K. Colton

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute Vet

TUES. 18 APR 1950

Assigned + LMC 1.50, without spl. Cond. S. 16. 49 Fitted for oil fuel &c.

CERTIFICATE WRITTEN. 009896 - 009903 - 0350 4

LMC Survey :- The three main scotch boilers exd. in their entirety with the
Continued. smoketube superheaters and the mountings opened up, and
placed in efficient working order. On the completion of
repairs the boilers exd. under steam and the safety valves
adjusted to 220 lbs.

Damage No 1. An examination now carried out on account of damage
stated to be caused by the propeller striking a submerged
object when the vessel was leaving Pensacola on 31/10/48.
The cast iron propeller tips were found to be broken off. The
damaged propeller now removed, the screwshaft exd in the
lathe and found to be true and in efficient condition,
the shaft replaced and a new cast iron propeller efficiently
fitted. New propeller stamped Lloyds 303 W.H.F. 21/11/49

Damage No 2. An examination now carried out on account of damage
stated to be caused by heavy weather on various voyages
between 5/10/48 and 16/7/49.
The main engines exd opened up together with thrust and
intermediate shafting; sternbush and tube; attached pumps;
main condenser; and steering engine. The main engines removed from the ship to allow tank top repairs to be effected.

Repairs now effected:- The sternbush rewooded all round.
The sterntube neck ring and gland bush renewed.
The intermediate shafting re-aligned throughout.
Nos 1 & 3 intermediate shaft bearings remetalled, the
remainder dressed up and all rechocked.
The thrust block bottom half bearings remetalled and the
block rechocked to suit alignment and the aft coupling
bolts of the thrust shaft renewed
The main engine replaced in the ship on the completion of the
tank top repairs
All holding down bolt holes in the T.T. plate welded up.
The main engine lined up to the thrust shaft and all
the bedplate chocks and H.D. bolts renewed.
All crankshaft main bearings completely remetalled.
The H.P. top half & the M.P. complete bottom end bearings remetalled.
The L.P. guide shoe remetalled.
The M.P. and L.P. piston rings renewed.
The piston rods skimmed, neck bushes renewed, & metallic packing overhauled.
The air pump liner bored and the bucket renewed, and the
bucket rod skimmed and the glands bushed.
The pump crosshead skimmed in the way of the bearings
and the brasses renewed
See Gibraltar Rpt No. 3361. One stay renewed in the main condenser and the remainder exd and found efficient, and the condenser tested.
The steering engine main bearing brasses renewed, one main bearing keep renewed, the top end brasses renewed, the piston & control valves renewed
The piston & valve rods skimmed, neck rings renewed, & glands rebushed.

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GRANOYKE SHEET Nº 3.

Damage No 3. An examination now carried out to the three scotch boilers and superheaters on account of damage stated to be caused by mud entering the boilers at Pensacola on 31/10/48.

Repairs now effected:- Port boiler - Centre furnace renewed, all plain and stay tubes renewed.

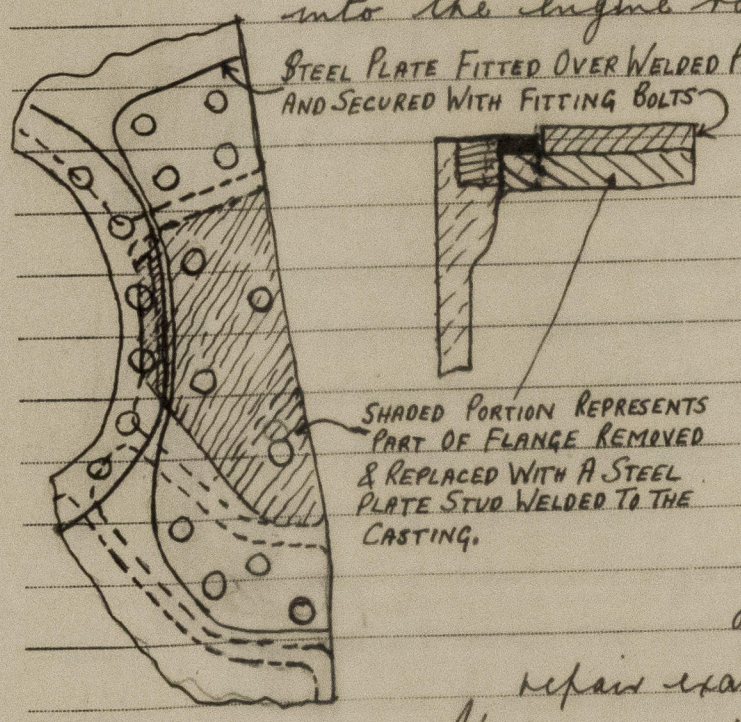
Centre boiler - Centre furnace renewed (See S.R.L.) and approx 50% of the plain tubes renewed.

Stard boiler - Centre furnace renewed (See S.R.L.) and approx 50% of the plain tubes renewed.

All superheater elements and headers removed and forwarded to the North Eastern Marine Eng. Co. Ltd at Wallsend and part renewed and reconditioned (Copy of certificate attached). On completion of repairs the boilers given a warm water hyd test to 220 lbs. and found sound and tight.

Copy of Certificate for Furnaces attached.

Damage No 4. An examination now carried out on account of damage stated to be caused to the M.P. cylinder top flange on 22/12/49 whilst repairs were in progress, by gear slipping out of the sling and striking the cylinder whilst being lowered by the crane into the engine room.




The top flange found to be fractured in several places on the starboard side (See sketch). The fractured pieces removed and a piece of steel plate fitted & stud welded to the cast iron. The whole covered by a reinforcing steel plate 3/4" thick bedded down & secured with 1 1/8" fitted bolts. The cylinder wall specially exd. & no evidence of any fractures found. On completion the repair examined under steam & found to be efficient It is recommended that the repair be considered permanent without any restriction in respect of Special Exms.

S.R.L. The main Condenser water box now renewed (See W&T Repairs).
The aux. Condenser forward water box door now renewed ( do ).
The stard & centre boilers - centre furnaces now renewed (See Damage no 3).

R. R. Boltmy

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GRANDYKE SHEET Nº 4

Repairs W&T:- Main Engines The H.P. piston valve chamber bored and the valve rings renewed.
The M.P. piston renewed complete on account of slack fit in cyl. bore.
The H.P. & L.P. matchbox valves & cages adjusted and fitting strips fitted to the valves to reduce the side clearance
The M.P. & L.P. valve rods built up by EW in way of guide domes, turned up true & the dome bushes renewed.
The H.P. crosshead pins skimmed
One bilge pump ram renewed and the other skimmed & bushed.

1 Boilers. The main condenser water box renewed (S.R.L).
Staid boiler:- Approx 50% of the plain tubes renewed to complete renewal of all the plain tubes. (See damage No. 3)
Safety valve lids & seats machined; Main check V. seat & lid renewed;
Aux. check valve rejointed to shell & lid & spindle renewed;
Blowdown V. lid & spindle renewed; Scum V. lid & spindle renewed;
Water gauge column rejointed to the shell.
Centre boiler:- Approx 50% of the plain tubes renewed to complete renewal of all the plain tubes (See damage No. 3).
Safety valve lids & seats machined; Main check V. lid & seat renewed;
Aux. check V. rejointed to the shell; Aux. stop V. rejointed to the shell;
Water gauge column rejointed to the shell; Scum V. rejointed to shell & lid renewed; Blowdown V. rejointed to shell & lid renewed.
Port Boiler:- 13 cc back screwed stays renewed; a small number of c.c. top rivets renewed; Safety valve lids & seats machined;
Main stop V. seat renewed; Main check V. rejointed to shell and lid renewed; Aux. check V. rejointed to shell & lid & spindle renewed;
Blowdown V. spindle & lid renewed.

Auxiliaries. Independent feed pumps:- New water ends complete fitted (Stamped "Tested to 500 lbs. 30/8/49 A.S.). Piston & bucket rings renewed.
Circulating pump and engine:- Piston valve renewed, piston rings renewed;
Tof end pin & brasses renewed; piston rod skimmed, neck ring renewed & gland rebushed;
Valve spindle built up & skimmed; impeller shaft skimmed & bearings remetalled.
G.S. Pump:- New water end complete fitted, piston & bucket rings renewed;
Ballast Pump:- Piston & bucket rings renewed; valve gear overhauled; bucket rods skimmed
Inboard generator engine:- Piston valve renewed, piston rings renewed; piston & valve rods skimmed.
Outboard " " :- Piston rod renewed & neck ring & gland renewed, piston rings renewed,
Tof end pin renewed.
Fan engine:- Piston rod, neck ring & gland renewed, piston rings renewed.
Windlass engine:- Tof end pins & brasses renewed, piston rings renewed.
Aux. condenser:- Forward water box door renewed (S.R.L)

R. R. Bolton.
SURVEYOR TO LLOYD'S REGISTER
NEWCASTLE-ON-TYNE.

GRANDYKE SHEET Nº 5.

Oil Fuel Conversion. The three main boilers now converted to burn oil fuel Flash Point above 150°F. in accordance with the Rule Requirements and the Secretary's letters.

A Todd type Duplex oil fuel unit and a lighting up set (No T1805 Lloyds Test 500 lbs 11/7/49 E.M.S) fitted.

A Weir type oil fuel transfer pump 7"×6½"×15" (No. 234509 Lloyds tested 200 lbs. 29/3/49) fitted.

The oil fuel filling, suction and transfer lines hydraulically tested upon completion to 60 lbs/□", and the hot oil pipes from the pressure pumps to the furnace fronts hydraulically tested to 400 lbs/□" and all found to be sound and tight.

All lead pipes in the machinery space removed and replaced with steel

The bilge & ballast suction pipes to the G.S. Pump now removed.

The oil fuel transfer pump oily bilge suction line cross-connected to the main bilge line to make up the bilge pumping capacity.

The bilge suctions fitted to the port and starboard oil fuel bunkers now fitted with blank flanges.

The ballast valve to the aft peak now converted to a S.D.N.R. valve and arranged so that the tank can be pumped out only by the ballast pump, and the tank arranged to carry fresh water only for the crew quarters aft.

The fore peak ballast line now rearranged and led through a pipe tunnel fitted through the port oil bunkers and fitted with an expansion gland at the E.R. end. The fore peak can thus be readily arranged to carry fresh water in the future if so desired.

Nos 3 & 4 D.B. ballast or oil fuel tanks now fitted with blank flanges in the ballast suction pipes.

No funnel damper is fitted in this vessel

The oil fuel installation fitted with deck control gear and steam smothering installation to the Rule Requirements, and upon completion tested under working conditions and found to be efficient

On the completion of the conversion and repairs the oil fuel installation and the main and auxiliary machinery exid. under steam during a quay trial and found to be in efficient working order.

Alteration. The Owners have now removed the side ballast tanks in the engine room which now extends to the ship's side P & S.

The oil fuel unit and transfer pump have been fitted in the space formerly occupied by starboard side tank and the bottom of the tank sides left proud of the tank top to form a save all.

On the port side of the engine room the independent feed pumps, ballast pump, aux. condenser, H.P. feed heater have been resited and the discharge valves fitted to the ship's side.

(See As Fitted Plan)

R. R. Bolton.

SURVEYOR TO LLOYD'S REGISTER
NEWCASTLE-ON-TYNE.

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GRANDYKE SHEET 6.

Change of Ownership:

On the completion of the LMC and Damage Surveys and the Oil Fuel Conversion the vessel was purchased by the Ben Line Steamships to be renamed Benvannoch.

The new owners have now fitted an additional 30 K.W. steam generator in the starboard side of the E.R, Sunderland Forge Engine No 43579 Generator No. 43580. This engine seen efficiently fitted and eid. under load and the governor tried and all found to be efficient.

The new owners have also fitted a Turbulo Oily Bilge Water Separator Ref No. A.C. 17 in the port "tween" deck space, and Pneumacator depth gauges to the cross bunkers and settling tanks.

Copies of Approved and as fitted Plans for S/S Benvannoch attached.

Pumping Arrangement
Underfloor Pipes
Diagram of O.F. Suctions and Discharges with O. Bilge Conns.
Arrgt. of heating coils in O.F. Tanks.

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SURVEYOR TO LLOYD'S REGISTER.