

11. AUG. 1965

Rpt. 4b/4f REPORT ON INSTALLATION OF INTERNAL COMBUSTION MACHINERY (Inst) (Sheet 1)

Received London

FOR CONSIDERATION BY THE COMMITTEE OF LLOYD'S REGISTER OF SHIPPING

NOTE.—The particulars in this report are to be given as fully and as clearly as possible. Where the answer is "NO" or "NONE", say so. Ticks and other signs of doubtful meaning are not to be used. Wording not applicable to be cancelled. Where items are marked with an asterisk the particulars need not be repeated here if they have already been given on the relevant Rpt. 4b (Cons) or 4f (Cons).

Ship's Name "DAWNLIGHT" I Port GREENOCK

Processing Number: LR - Date of completing rpt. 20.7.65 Rpt. No. 27750

Gross tons 199 Place of survey, if different from above -

No. of visits:
In shops First date Last date
On ship **Eighteen.** First date 15/4/65. Last date 29/6/65.

Owners Ross & Marshall Ltd. Port of registry Greenock

Ship built by	Scotts' Shipbuilding & Engineering Co. Ltd.	Yard No.	703	When	65	Mo.	6
Main engines made by	Crossley Bros. Ltd. Man.	Engine No.	149163	When	65		6
Gearing made by	Modern Wheel Drive Ltd.	Gear No.	13230	When	65		6
Boilers made by	Boiler Co.	Boiler No.	When	When	65		6
Machinery installed by	Scotts' Shipbuilding & Engineering Co. Ltd.			When	65		6

Particulars of service of ship if limited for classification } For U.K. & Eire Service

Particulars of vegetable oil or other special cargo notation, if required } None

If ship is to be classed for navigation in ice, state whether class 1, 2 or 3 None

Is ship an oil tanker? No Is refrigerating machinery fitted? No

If so, is it for cargo purposes? - Type of refrigerant -

Is the refrigerating machinery space isolated from the propelling machinery space? -

Is the refrigerated cargo installation to be classed? -

No. of main engines 1 Brief description of propulsion system } Oil Engine driving through reverse reduction gearbox and metalastik coupling.

No. of propellers 1

12.8.65 Fee £30. 0. 0. Expenses -

MAIN INTERNAL COMBUSTION RECIPROCATING ENGINE

To be reported on Rpt. 4b (Cons) Port Manchester Rpt. No. 1079

~~INTERNAL COMBUSTION~~

To be reported on Rpt. 4f (Cons) Port Rpt. No.

~~ELECTRIC PROPELLION~~ (Internal combustion reciprocating engines or gas turbines)

Electrical particulars to be reported on Rpt. 4d Port Rpt. No.

REDUCTION GEARING. (Internal combustion reciprocating engines or gas turbines)

To be reported on Rpt. 4e Port London Cert Rpt. No. MWD.2990

*Are flame guards or traps fitted to crankcase relief devices?

*Is a torsional vibration damper or detuner fitted to the shafting?

*Where positioned?

*Type

Is the engine equipped to operate on heavy fuel? No

No. of fresh water coolers	MAIN One	AUX. None
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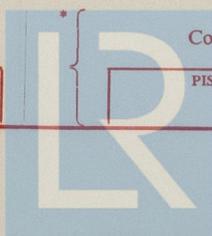
No. of lub. oil coolers MAIN One AUX. one on gearbox

Is engine fitted directly on tank top, or on a built-up seating? Open floors

*Can engine/turbine be reversed?

*If not, how is reversing effected?

Cooling medium for CYLINDERS PISTONS FUEL VALVES



Lloyd's Register Foundation W. Jimer Lee Surveyor to Lloyd's Register of Shipping

CLUTCHES, FLEXIBLE COUPLINGS, &c. If a clutch or other flexible connection is fitted between engine/turbine and gearing, or between engine and line shafting, give Makers' name, brief description and, for clutches, state how operated.

Metalastic 21/842 Flexible Coupling.

If main engine can be used for purposes other than propulsion when declutched, state what purpose also at what maximum B.H.P. & R.P.M.

AIR COMPRESSORS AND RECEIVERS

State No. of independently driven air compressors, also capacity of each and whether a separator or filter is provided between each compressor and the air receivers, type of prime mover, position in ship, Port and No. of cert.

One - 12.25 cu.ft./min capacity. Yes separator provided.
Hand started oil engine. port side - Nottingham Cert. No. C46016

State No. of starting air receivers, both main and auxiliary, capacity of each, position in ship, Port and No. of cert.

2 - Main. One P.S. For'd one s.s. aft. 5 cu.ft. each
Nottingham C.29861 & C.30109.

How are air receivers first charged? Hand started
Oil engine driven air compressor.

Are the safety devices in accordance with the Rules? Yes
Are bursting discs or flame arresters fitted at the starting air valves on each cylinder? Yes

Maximum working pressure of starting air system 350 lbs./sq.in.

Has the starting of the main engines been tested and found satisfactory? Yes

STEAM INSTALLATION

No. of aux./donkey boilers (see Key to R.B.) burning oil fuel

Can the exhaust heated boilers deliver steam directly to the steam range or do they operate only as economisers in conjunction with oil-fired boilers?

Working pressure

Port and rpt. or cert. Nos. for aux./donkey boilers

Type

Position

Is steam essential for the operation of the ship at sea?

Is a superheater fitted?

Are these boilers also heated by exhaust gas?

If so, are any steam pipes over 3 ins. bore?

No. of aux./donkey boilers (see Key to R.B.) heated by exhaust gas only

What is their material?

Working pressure

For oil-fired boilers, is the arrangement of pipes, valves, controls, &c., in accordance with Rules?

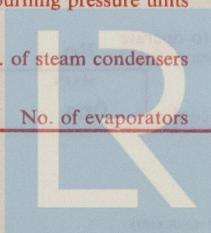
Type

No. of oil-burning pressure units

Position

No. of steam condensers

No. of evaporators



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Rpt. 4/4a/4b/4f (Inst)
(Sheet 2)

Ship's Name "DAWNLIGHT I"

Port GREENOCK

Rpt. No. 27750

Date of approval of torsional vibration characteristics of the propelling machinery system with:—

6/4 Z

Particulars of barred speed range(s) if imposed, with:—

(a) Working propeller 23rd March, 1965

29.6.65

(a) Working propeller None

(b) ~~Spare propeller~~

(b) ~~Spare propeller~~

STRAIGHT SHAFTING

Max. BHP/SHP approved for each line of shafting
THRUST SHAFT. Separate or integral with crank, wheel or electric motor shaft?

300 at 750 rpm Corresponding RPM 200 of propeller

MN 60

Integral with gearcase

Thickness of liner between bearings
How is the after end of the liner made watertight in the propeller boss?

1/2"

Rubber ring

Diameter adjacent to collar

5 1/4"

Material of screw/shaft

Forged steel

Material

steel B.S.E.N.9

Minimum approved tensile strength

28 tons/sq.in.

Minimum approved tensile strength

48 tons/sq.in.

Is an oil gland fitted?

No

INTERMEDIATE SHAFT

Diameter

4 5/8"

What type?

Material

Forged steel

If an approved type, state name

Minimum approved tensile strength

28 tons/sq.in.

Length of bearing next to and supporting propeller

1' 8 7/8"

SCREWSHAFT. Dia. of cone at large end

5 1/2"

> 5" at Coupler

Material of bearing

Lignum Vitae

Is screwshaft fitted with a continuous liner?

Yes

Material of sterntube

Cast iron

TUBE SHAFT (if separate)

Diameter

N/A

Is tube shaft fitted with a continuous liner in way of stern tube?

Is sterntube fabricated? In multiple screw ships, is the liner between sterntube & "A" bracket continuous? If not, is the exposed length of shafting between liners readily visible in drydock?

No

N/A

Thickness of screw/shaft liner at bearings

1/2"

PROPELLER

If of special design, state type

Not of special design

State method of control

-

Is it of reversible pitch type?

No

If so, is it of approved design?

-

PROPELLER	BLADE MATERIAL	TENSILE STRENGTH tons/sq.in.	BUILT OR SOLID	LEFT HAND (LH) OR RIGHT HAND (RH)	NO. OF BLADES	DIAMETER	PITCH mean	TOTAL DEVELOPED SURFACE
Working	Manganese Bronze	33.4	Solid	R.H.	4	6' 3"	5' 2"	16sq.ft.
Spare								

FOR ICE STRENGTHENING ONLY

PROPELLER	DESIGN MOMENT OF INERTIA OF PROPELLER (DRY)	CLASS 1, 2 OR 3	THICKNESS OF BLADES			LENGTH OF BLADE SECTION AT 25% RADIUS	RAKE OF BLADES
			AT TOP OF ROOT FILLET	AT 25% RADIUS	AT TIP		
Working	1556 lbs.ft. ²						
Spare							

OIL FUEL TANKS

No. and position of oil fuel settling or service tanks not forming part of ship structure

One. Top platform

LUBRICATION

1 gear box
1 elect. drive
No. of lub. oil pumps and how driven 2 Main Engine

Is an alarm device fitted to indicate failure or reduction of supply from the pumps?

Yes

Can normal supply be maintained with any one pump out of action?

Yes

No. of oil coolers

Two

Is an emergency supply automatically available as per Rule? (turbines only)

-

No. of ~~lubrication~~ oil strainers

SUCTION None

PRESSURE Two

Are the strainers of magnetic type?

No

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W. Gilmer Lee
Surveyor to Lloyd's Register of Shipping

INDEPENDENT PUMPS	SERVICE FOR WHICH EACH PUMP IS CONNECTED TO BE MARKED THUS X														
	SUCTION								DELIVERY						
	Bilge Main	Bilge Direct	Ballast Main	Oil Fuel Tanks	Condenser Extraction	Sea	Feed Tanks	L.O.	Boiler Feed	S.W. Cooling	Oil Fuel Burners	Oil Fuel Tanks	Fire Main	Overboard	Deck
Fire & Bilge Pump p.s. Elect. drive 10 tons/hour	X		X			X			X				X	X	
G.S. pump. Port side attached Aux. Eng. 20 tons/hour	X	X	X			X			X				X	X	
O.F. transfer pump port side For'd Elect. drive				X							X				X
Gearbox standby L.O. pump starb'd aft elect. drive							X								X

L.O.

X

BILGE SUCTIONS

No. and size in each hold, deep tank, cofferdam and pump room

1 - 2" aft end of Hold

Sizes and positions of direct suction in machinery spaces

1 - 2" centre

No. and size connected to main bilge line in:—

Main engine room

1 - aft 2"

Sizes and positions of emergency suction in machinery spaces

1 - 2" forward (on M.E.D. bilge pump)

Are all suction of non-return type? Yes

Has the bilge or ballast system means for separating oily water on the overboard discharge side? No

Do the pumping arrangements comply with the Rules, including special requirements for oil tankers, ships classed for carrying oil in bulk? (Strike out words not applicable) Yes

STEERING GEAR. (State type, also No. of steam engines, electric motors, hydraulic pumps and other particulars, including particulars of the alternative means of steering)

Hand type Rod & Chain. Alternative means Blocks & tackle.



Ship's Name "DAWNLIGHT I" Port GREENOCK Rpt. No. 27750

STEAM AND OIL ENGINE AUXILIARIES

REF	POSITION OF EACH	TYPE	MADE BY
a	Port Side	Oil Engine	Lister Blackstone
b		2 cy. 4 SA	Marine Ltd.
c			-
d			-
e			
f			
g			
h			

REF	PORT & No. OF REPORT OR CERTIFICATE	DRIVEN MACHINERY (for electric generators state kw, volts & amps)
a	Bristol Cert. No. S.C. 350 ✓	One G.S. pump. One air-cooled Air
b	-	Compressor, One 5 Kw D.C. Generator
c		110 V. 45.5 A.
d		
e		
f		
g		
h		

If electric current is used for essential services at sea, state the minimum No. and capacity of generators required

- (1) So that the ship may operate at sea Not required
- (2) ~~For emergency use~~

Has the spare gear required by the Rules been supplied? **Yes**
 Has all the machinery been tried under full working conditions & found satisfactory? **Yes**
 Date & duration of full-power sea trials of main engines **28.6.65 2 hrs.**
 Has the manœuvring of the main engines been tried and found satisfactory? **Yes**

DECLARATION TO BE SIGNED BY INSTALLING ENGINEERS

To the best of our knowledge this machinery has been installed in conformity with the Rules, Regulations and requirements of Lloyd's Register of Shipping, and the foregoing particulars of main and auxiliary machinery and pressure vessels (as shown on sheets 1, 2 & 3) are correct.

SCOTT'S SHIPBUILDING AND ENGINEERING CO. LTD.

(date) 27TH JULY 1965

(signature) James Nicol

A previous similar case was for (name) M.S. "RAYLIGHT" Port and Rpt. No. Greenock No. 27341

IDENTIFICATION MARKS (copies of certificates to be forwarded)

- Thrust shaft Integral with gear case
- Intermediate shafts Lloyds JM Sld. 4696/3.12.64
- Screw down shafts Lloyds SLD. 4695 2.12.64
- Propellers Lloyds A.J. 19/5/65 ZS 1875 B.R.H.
- Other important items -



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DATES OF APPROVAL OF PLANS

Straight shafting	11th November, 1964	Oil burning Compressed air system	-
Air receivers	-	Boiler room system	-
Reversing gear & control	-	Deck hoist	-
Flexible coupling	-	Feed water	-
Separate fuel tanks	10th June 1965	Superheater	-
General pumping arrangements	21st Dec. 1964	Deck hoist	-
Bilge, ballast & oil fuel pumping arrangements in the machinery space	2nd Nov. 1964	Deck hoist	-
Oil fuel lines & fittings at stern & service tanks		Propeller Propeller (including spare, if supplied)	-
General pumping arrangements		Stern gear (if not shown on shafting plan)	11th Nov. 1964

DATES OF EXAMINATION OF:-

Fitting of stern tube	May 24th 1965	Alignment* of straight shafting	June 16th 1965	Light
Fitting of propeller	May 28th 1965	Testing of pumping arrangements	June 25th 1965	
Completion of sea connections	June 1st 1965	Oil fuel lines	June 28th 1965	
Alignment* of crankshaft on board	June 17th 1965 light	Boiler support		
Alignment* of turbines/engines & gearing	June 17th 1965 light	Steering machinery	June 28th 1965	
Holding down bolts & chocks	June 17th 1965	Windlass	June 28th 1965	

*State if aligned when ship in light, ballast or loaded condition

† The machinery reported above has been constructed and installed under Special Survey in accordance with the Rules, approved plans and Secretary's letters. The materials and workmanship are good, the spare gear required by the Rules has been supplied and the machinery is eligible, in my opinion, to be classed. ‡ LMC 6,65 T.S. (CL) 6,65

NOTE:- The screwsaft keyway is in accordance with C.1102 of the Rules.

H.K.T.

W. Fisher Lee
Surveyor to Lloyd's Register of Shipping

Date of Committee

GLASGOW 110 AUG 1965

Minute

+ LMC ES }
TS. CL } 6,65

- † (a) If the installation contains any features of a novel or experimental nature, give particulars.
- ‡ (b) If centralised and/or bridge control is fitted for main propelling and/or essential auxiliary machinery, state on a Rpt. (cont.) where the control room is situated, the machinery controlled from it and give a brief description of the control system, including any automatic system for controlling essential auxiliary machinery.
- ‡ Include any special notation to be assigned.

* See Rpt. 4 Cont. Sheet

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NOTE.—Where existing machinery is submitted for classification, the circumstances are to be explained as fully as possible, and the recommendation should be suitably amended.

Rpt.

(cont.)

Ship's Name ~~SS~~MS "DAWNLIGHT I"

Port GREENOCK

Rpt. No. 27750

Manual control (Bloctube System) for the main machinery is provided on the bridge by means of which speed regulation of the main engine can be carried out, together with starting stopping and reversing control of the reverse reduction gear box. This is in addition to the normal hand controls at the engine.

Both systems were tested under working conditions during the sea trial and found to operate satisfactorily.

W. Filmer Lee.
SURVEYOR TO LLOYD'S REGISTER
21 JUL 1965
GREENOCK

