

Rpt. 4

Date of writing report 15/1/60. Received London GLASGOW No. 9093a  
 Survey held at Renfrew No. of visits 131 In shops 4.9.57 4.8.59  
 On vessel 55 First date 7.8.59 Last date 15.12.59

# FIRST ENTRY REPORT ON STEAM RECIPROCATING MACHINERY

No. in R.B.                      Name Boom Defence Vessel "LAYMOOR". Gross tons                       
 Owners Admiralty. Managers                      Port of Registry London.  
 Hull built at Renfrew. By Wm. Simons & Co. Ltd. Yard No. 810 Year 1959.12  
 Main Engines made at Renfrew. By Wm. Simons & Co. Ltd. Eng. No. 810 When 1959.12  
 Boilers made at Renfrew. By Wm. Simons & Co. Ltd. Blr. Nos. 810 When 1959.12  
 Machinery installed at Renfrew. By Wm. Simons & Co. Ltd. When 1959.12  
 Particulars of restricted service of ship, if limited for classification Boom Defence Vessel.  
 Is ship to be classed for navigation in ice? No. Particulars of vegetable or similar cargo oil notation, if required Not Required.  
 Is ship intended to carry petroleum in bulk? No.  
 Is refrigerating machinery fitted? No. If so, is it for cargo purposes? — Type of refrigerant —  
 Is the refrigerating machinery compartment isolated from the propelling machinery space? — Is the refrigerated cargo installation intended to be classed? —

The following particulars should be given as fully and as clearly as possible. Dashes, ticks and other signs of doubtful meaning are not to be used. Wording not applicable to the installation may be cancelled with a black line.

## BOILERS AND OTHER STEAM PRESSURE VESSELS.

No. of main boilers Two Type and licence name, if any 'D' Type Admt. Foster Wheeler. Position Fore and Aft in Blr. Rm.  
 Saturated safety valve pressure 257 lb/sq. in. Steam temperature if superheated — Superheater safety valve pressure —  
 Natural or forced draught Forced. Fuel Oil. Report on main boilers (Port and No.) Attached.  
 No. of aux./donkey boilers None. Type — W.P. — Position —  
 No. of steam heated steam generators None. W.P. — No. of evaporators — W.P. —  
 Report on aux./donkey boilers or steam generators (Port and No.) —  
 If the boilers are oil fired, is the arrangement of pipes, valves and controls in accordance with the Rules? Yes.  
 No. and position of oil burning pressure units One - Centre of Stokehold. - Wallsend Duplex.  
 No. and position of oil fuel settling or service tanks not forming part of hull structure. One Small Diesel Oil Service Tank in Eng. Rm. - Port Side  
 No. of forced draught fans and fan engines Two. - One Fan & Eng. per Boiler.

## MAIN ENGINES (If the main engines have been constructed at another Port and are covered by a separate report, the particulars given in that report need not be repeated below, but the Port and Report No. should be stated)

Description and licence name, if any Reciprocating Triple Expansion.  
 No. of main engines One No. of screws One Max. total I.H.P. 1300 with 63.8 per cent. H.P. cut off at 185 R.P.M.  
 No. of cylinders per engine Three Dia. of cylinders (in sequence from fwd. to aft) H.P. = 14 3/4": I.P. = 25": L.P. = 44" Stroke 24"  
 Machinery numeral 234 Type of valves I.P. & L.P. = Andrews & Cameron Type of valve gear Stephenson.  
 If engine is of enclosed forced lubricated type state crankcase volume Open Type No. and total area of explosion relief devices fitted? —  
 Which cylinders operate on Uniflow principle? — Is a steam reheater fitted? No. Is a governor fitted? No.  
 Are the main engine frames or bedplate of welded construction? Columns Welded - Bedplate Cast Steel Is the main engine secured directly to the tank top or to a built-up seating? Built-Up Seating & at For<sup>d</sup>. - End to D.B. Overflow Feed Tank Top.  
 Is an exhaust steam turbine fitted? No. S.H.P. of turbine — R.P.M. — Description of turbine and drive —

## SHAFTING

Working pressure for which shafting has been approved 250 lb/sq. in. Date of approval of torsional vibration characteristics of the propelling machinery system, if required Not Required. State barred speed range, if imposed —  
 CRANK SHAFT type Built, Solid Forged Dia. of journals 8 1/2" - 8 3/4" in Web. Dia. of pins 8 1/2"  
 Breadth of webs at mid length 13 3/4" Thickness 5 3/8" If shrunk, thickness around eyeholes 3 3/4"  
 Are dowel pins fitted? No. Crank shaft material F.S. Minimum approved tensile strength 28 ton/sq. in.  
 THRUST SHAFT Dia. at collar(s) 8 3/8" - Body 8" Material F.S. Minimum approved tensile strength 28 ton/sq. in.



INTERMEDIATE SHAFT. Dia. None. Material                      Minimum approved tensile strength                     

SCREW SHAFT. Dia. of cone at large end 9" Is screwshaft fitted with a continuous liner? No.

TUBE SHAFT. Dia. (if these are separate shafts) — Is tube shaft fitted with a continuous liner in way of stern tube? —

Thickness of screw/tube shaft liner at bearings — Thickness between bearings —

Is an approved oil gland fitted? Yes. If so, state type Newark.

Length of bearing next to and supporting propeller 36" Material of bearing G.M. White Metal Lined.

In multiple screw vessels is the liner between stern tube and A bracket continuous? — If not, is the exposed length of shafting between liners readily visible in drydock? —

Material of screw/rod shaft F.S. Minimum approved tensile strength 28 ton/sq.in.

PROPELLER

Dia. of propeller 8'9" ✓ Pitch 8'9" Built-up or solid? Solid Total developed surface 32.48 sq. ft. No. of blades 4

Blade thickness at top of root fillet.....5.118".....Blade material H.T. Brass E. Inc. Spec. 20- Moment of inertia of dry propeller.....100

MAIN ENGINE DRIVEN PUMPS. (State No. of each and give capacity of bilge pumps at normal revolutions)

AIR.....None.....CIRCULATING.....None.....FEED.....None.....LUB. OIL.....None.....BILGE.....None.....

## INDEPENDENT PUMPS

Name below each essential pump and state its position. Give capacity of bilge pumps.		Service for which each pump is connected to be marked thus X												
		SUCTION							DELIVERY					
		Bilge Main	Bilge Direct	Ballast Main	Oil Fuel Main	Condr. Extr.	Sea	Feed Tanks		Boiler Feed	Main Condr. Coolg.	Oil Fuel Burners	Oil Fuel Tanks	Fire Main
-	Fire & Bilge Pump.EngineRoom Cap. - 50 T.P.H. Stard.	X	X	X			X				X			X
1 -	Fire & Bilge Pump.Boiler Room Cap. - 50 T.P.H. Stard.	X	X	X			X				X			X
1 -	Fire Pump. Fan Flat. Cap. - 50 T.P.H.			X			X							X
1 -	Fire Pump Fan Flat. Cap. - 50 T.P.H.			X			X							X
1 -	Bilge Pump (Megator) Engine Room 3 T.P.H. Stard.		X											
1 -	Bilge Pump (Megator)Boiler Room 3 T.P.H. Star		X Emerg.								X			
1 -	Circulating Pump Engine RoomPort		X				X							
1 -	Air Pump Engine Room. Port					X								
1 -	Main Feed Pump Boiler Room Star <sup>d</sup> .					X		X		X				
1 -	Auxy.Feed Pump Boiler " Star <sup>d</sup> .					X		X		X				
2 -	O.F. Press.Pumps " " Mid.				X							X	X	
1 -	O.F.Light.Up Pump " " Port.				X							X		

If the main engine is of forced lubricated type state No. of lubricating oil pumps, including spare pump and No. of oil coolers None.

## BILGE SUCTIONS

BILGE SUCTIONS :

No. and size in each hold, deep tank or pump room 1 @  $2\frac{1}{2}$ " Hold, 1 @  $2\frac{1}{2}$ " Cannners Store, 1 @  $2\frac{1}{2}$ " Magazine.

No. and size connected to main bilge line in main engine room 1 @ 2 1/2" Art. 1 @ 2" Ford. In aux. engine room None.  
Coiff. p & s. Eng. Rm. 2 @ 2" Art. 3"

No. and size connected to main bilge line in machinery spaces. Corr. p. 4 s.

In boiler room } 1 @ 2½" 2 @ 2" In tunnel } None. Size and position of direct bilge suction in machinery spaces Eng. Rm. 2 @ 2"  
Blr. Rm. } 1 @ 2½" & 4 @ 2" by (Megator P) F. & A: P. & S. (Megator P) - F. & A.  
Aft. } 1 @ 2½" (Bilge Ejector). Aft. Size and position of emergency bilge suction in machinery spaces For. Engine Room 1 @ 2½"

Blr.Rm. ) 1 @ 2" (Bilge Ejector). A.R. Size and position of emergency bilge suction. E.R. ) 1 @ 2" B.R. ) 1

In coal burning ships is a flexible bilge hose and connection provided? E.R. ) 1 @ 2" B.R. ) 1

Is the bilge or ballast system fitted with means for separating oily water on the overboard discharge side? Yes. "Megator" Pumps Disch. to Oily Water Settling Tank.

Do the pumping arrangements comply with the Rules including special requirements for ships carrying petroleum in bulk, cargo oil or enclosed for navigation in ice? (Strike out words not applicable)

Yes.

## STEAM PIPES

Material of main steam pipes S.D. Steel. Ext. dia.  $4\frac{1}{2}'' - 5\frac{1}{2}''$  Thickness 5 w.g. -  $1\frac{1}{4}''$ . How are flanges

Material of main steam pipe \_\_\_\_\_  
 attached? Welded. \_\_\_\_\_ Material of valves and fittings for superheated steam None.

Are any aux. steam pipes for essential services over 3" bore? Yes. If so, what is the material? S.D. Steel.

Are any saturated steam pipes fitted in the smoke boxes of cylindrical boilers? No.

Hydraulic test pressure on steam pipes—main 500 lb/sq. in. aux. 500 lb/sq. in.

### FEED SYSTEM

Are all boilers provided with two separate means of feed? Yes. No. of pressure type feed heaters One.

No. of direct contact type feed heaters. None. No. of feed filters—Suction None. Extractors Fitted Pressure None.

No. of condensers—main One Aux. None Is feed system of closed type? No. No. of air ejectors -

Cooling surface of main condensers 1450 sq. ft. Material of condenser tubes Aluminium Brass.

## ELECTRIC GENERATOR ENGINES

[illegible]

Is electric current used for essential services at sea? No. If so, state the minimum No. and capacity of generators required in order that the ship may operate at sea

STEERING GEAR (State type and No. of steam engines, electric motors, hydraulic pumps and other particulars)

Admny. - Type Bulkhead Steam Direct-Acting Steering Gear. Donkin & Co. Ltd. No. 10023.

AIR COMPRESSORS AND RECEIVERS FOR ESSENTIAL SERVICES (State purpose, capacity, prime mover, position in ship and Port and No. of certificate)

Have the Rule Requirements for fire extinguishing arrangements been complied with?.....		Brief description of arrangements.....
<u>Engine Room.</u>	{ 1-2 1/2" Hydrant with Hose. { 2-2 Gall. Extinguishers. { 2-Foam Inlet Tubes. { Steam Smothering Pipes.	{ 1 - 2 1/2" Hydrant with Hose. { 2 - 2 Gall. Extinguishers. { 2 - Foam Inlet Tubes. { 1 - Foam Generator Conn. to Boiler Casings { Steam Smothering pipes
	<u>Boiler Room</u>	

Has the spare gear required by the Rules been supplied? Yes. Has all the machinery been tried under full working conditions and found satisfactory? Yes.

Has the spare gear required by the Rules been supplied: \_\_\_\_\_

Date and duration of full-power sea trials of main engines 21st & 22nd Nov. 1959 & 9th Dec. 1959 4 hours full power and

2 hours final acceptance at full power.

Does this machinery installation contain any features of a novel or experimental nature? (State particulars) No.

Is the installation a duplicate of a previous case? No. If so, state name of vessel \_\_\_\_\_

Date of approval of plans for main boilers 22/10/57. Aux. boilers None. Donkey boilers None.

Shafting 6/5/57. Pumping arrangements 19/7/57 & 9/9/58. Oil fuel burning arrangements 15/1/58.

Boiler feed system.....17/6/57.

The foregoing description of the main engine and installation is correct and the particulars are as approved ~~for torsional vibration characteristics~~ (strike out words not applicable).

*J. W. Simons & Co.,*

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GENERAL REMARKS

State if the machinery has been constructed and/or installed under special survey in accordance with the Rules, approved plans and Secretary's letters. State quality of materials and workmanship and give recommendations for classification, including any special notation to be assigned. Where existing machinery is submitted for classification the circumstances should be explained as fully as possible.

The machinery and boilers of this ship have been constructed and installed under Special Survey in accordance with the Rules, approved plans, Secretary's letters and Admiralty specification.

The materials and workmanship are good and on completion of the installation the machinery was examined during basin and sea trials under working conditions and found satisfactory.

This machinery is eligible, in my opinion, to be classed in the Register Book

\* LMC 12,59, Screwshaft OG, 2 WTB (250 lb) "Fitted for oil fuel - F.P. above 150° Fah."

Engine Surveyor to Lloyd's Register of Shipping.

PARTICULARS OF IDENTIFICATION MARKS (Including Port of origin) of important Forgings and Castings. (Copies of certificates should be forwarded with report.)

RODS (Main Connecting) Lloyds Sld. 4598 - J.M. - 23.10.57 - T.H.S. - 3.2.59  
(Piston) Lloyds Gls. 322A - T.H.S. - 3.2.59

CRANK SHAFT Lloyds Gls. 35908 - T.H.S. 1.10.58

THRUST SHAFT Lloyds Sld. 3754 - J.M. - 10.9.57 - T.H.S. - 1.6.59

INTERMEDIATE SHAFTS None

SCREW AND TUBE SHAFTS Lloyds Sld. 3047 - J.M. - 26.10.57 - T.H.S. - 8.5.59

PROPELLERS Lloyds RIH. 4516 - R.J.B. - 25.9.57

OTHER IMPORTANT ITEMS

Spare Screwshaft - Lloyds Sld. 3048 - J.M. - 1.11.57 - T.H.S. - 19.12.58

Spare Propeller - Lloyds R2H.4516 - R.J.B. - 17.10.57

N.B. Spare Screwshaft and propeller sent to Admiralty Base Stores.

Dates of examination of principal parts:-

Fitting of stern tube 11.5.59 Fitting of propeller 20.5.59 Completion of sea connections 13.7.59 Alignment of crankshaft in main bearings 1.10.58  
Engine chocks & bolts 17.8.59 Alignment of straight shafting 17.8.59 Testing of pumping arrangements 15/11/59-24/11/59  
Oil fuel lines 16.10.59-30.10.59 Boiler supports 22.6.59 Steering machinery 22.11.59 Windlass -

Date of Committee GLASGOW 23 FEB 1960 Special Survey Fee Eng. Const. £42.10. - ✓  
Installation £57.10. - ✓

Decision + LMC ES } 12,59 (Lon. Ltr. 28.1.57) Admy. Specifications £130. - - ✓  
MBS }  
TS (OG) }  
OF }

Expenses £ 9.16. - 1.3

Date when A/c rendered



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