

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 8 OCT 1949  
Sunderland

Date of writing Report 20 -9-49 19 When handed in at Local Office 19 Port of Sunderland

No. in Survey held at Sunderland Date, First Survey 16-7-49 Last Survey 16-9-49 19  
Reg. Book. (No. of Visits 10)

on the s.s. "GEMMA" Tons { Gross 5146  
Net 2516

Built at Sunderland By whom built J.L. Thompson & Sons Ltd Yard No. 663 When built 1949

Owners Anglo-Saxon Petroleum Co. Ltd Port belonging to London

Installation fitted by Sunderland Forge & Engineering Co. Ltd When fitted 1949

Is vessel equipped for carrying Petroleum in bulk.  Is vessel equipped with D.F.  E.S.D.  Gy.C.  Sub.Sig.  Radar

Plans, have they been submitted and approved.  System of Distribution 2-wire ins. Voltage of Lighting 110

Heating  Power 110 D.C. or A.C., Lighting D.C. Power D.C. If A.C. state frequency

Prime Movers, has the governing been found as per Rule when full load is thrown on and off.  Are turbine emergency governors fitted with a trip switch.  Generators, are they compound wound.  and level compounded under working conditions.

if not compound wound state distance between generators.  and from switchboard.  Are the generators arranged to run in parallel.  are shunt field regulators provided.  Is the compound winding connected to the negative or positive pole negative  Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing.  Have certificates of test for machines under 100 kw. been supplied.  and the results found as per Rule.

Position of Generators Engine room starboard on raised stools

is the ventilation in way of generators satisfactory.  are they clear of inflammable material and protected from mechanical injury and damage from water, steam and oil.  Switchboards, where are main switchboards placed. on angle iron framework on platform near generators

are they in accessible positions, free from inflammable gases and acid fumes and protected from mechanical injury and damage from water, steam and oil.  what insulation is used for the panels. ebony "Sindanyo" if of synthetic insulating material is it an Approved Type.  if of semi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule.  Is the construction as per Rule, including locking of screws and nuts.  Description of Main Switchgear

for each generator and arrangement of equaliser-switches. a double-pole quick-break knife switch and double-pole fuse.

and the switch and fuse gear (or circuit breakers) for each outgoing circuit. as for generators

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule.  Instruments on main switchboard 2  
ammeters 2 voltmeters  synchronising devices. For compound machines in parallel are the ammeters and reversed current protection devices connected on the pole opposite to the equaliser connection.  Earth Testing, state means provided. E lamps

Switches, Circuit-Breakers and Fuses, are they as per Rule.  are the fuses an Approved Type.  make of fuses. "Zed" are all fuses labelled.  If circuit breakers are provided for the generators, at what overload do they operate.  and at what current do the reversed current protective devices operate.

Joint Boxes, Section Boards and Distribution Boards, is the construction as per Rule.  Cables, are they insulated and protected as per Rule.  if otherwise than as per Rule are they of an Approved Type.

state maximum fall of pressure between bus bars and any point under maximum load. less than 6 v. are the ends of all cables having a sectional area of 0.01 square inch and above provided with soldering sockets.  Are all paper insulated and varnished cambric insulated cables sealed at the ends.  Are all the cable runs in accessible positions, not exposed to drip or accumulation of water or oil, high temperatures or risk of mechanical damage.  are any cables laid under machines or floorplates.  if so, are they adequately protected.  Are cables in machinery spaces, galleys, laundries, etc., lead covered.  or run in conduit.

or of the "HR" type.  State how the cables are supported or protected. main feeders along main tank deck

in iron pipe: In accommodation, L.C.B. cables on the surface and protected where required by metal guards.

Are all lead sheaths, armouring and conduits effectually bonded and earthed.  Are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands.  where unarmoured cables pass through beams, etc., are the holes effectively bushed.  Refrigerated chambers, are the cables and fittings as per Rule.



LIGHTING, HEATING, WIRELESS, NAVIGATION LIGHTS, ETC., CABLES.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
Navigation lighting D.B. D-1	1	7/.044	20 ✓	31	70	V.I.R.	L.C.
Midship lighting D.B. D-2	1	7/.044	22 ✓	31	20	"	"
" " " D-3	1	7/.044	27 ✓	31	20	"	"
Navigation Alternative supply	1	1/.064	3 ✓	5	80	"	"
Instrument lighting D.B. D-12	1	7/.044	11.6 ✓	31	32	"	"
Cargo lighting D.B. D.9	1	7/.044	4.3 ✓	31	20	"	L.C.A.B.
Forecastle D.B. D.11	1	7/.036	3.2 ✓	24	292	"	L.C.
Crew lighting D.B. Port D-4	1	7/.064	41 ✓	75	148	V.C.	"
" " " Star.D-5	1	7/.064	46 ✓	75	108	"	"
Aft Cargo lighting D.B.	1	1/.064	2.1 ✓	5	148	V.I.R.	"
Engine Room lighting D.B. 7a & b.	1	7/.064	21 ✓	46	20	"	"
Boiler Room " " 8	1	7/.064	21 ✓	46	60	"	"
Galley D.B.	1	1/.064	3 ✓	5	40	"	"

Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule... Yes Emergency Supply, state position skeleton lighting system, battery-fed, operating on failure of ship's supply or E.R.fuses.

Navigation Lamps, are they separately wired Yes controlled by separate double pole switches and fuses... Yes Are the switches and fuses in a position accessible only to the officers on watch... Yes, is an automatic indicator fitted... Yes Is an alternative supply provided... Yes

Secondary Batteries, are they constructed and fitted as per Rule... Yes, are they adequately ventilated... Yes state battery capacity in ampere hours 2 of 80 amp hour

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof... Yes Are any fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present... Yes if so, how are they protected... "Wigan" flameproof lighting fittings as approved in centrecastle. and where are the controlling switches fitted... in officers' quarters Are all fittings suitably ventilated... Yes

Searchlight Lamps, No. of -, whether fixed or portable... -, are they of the carbon arc or of the filament type... -

Heating and Cooking, is the general construction as per Rule... -, are the frames effectually earthed... -, are heaters in the accommodation of the convection type... - Motors, are all motors constructed and installed as per Rule and placed in well-ventilated compartments in which inflammable gases cannot accumulate and protected from damage from water, steam and oil... Yes

Are motors coupled to oil fuel transfer and pressure pumps capable of being stopped from a position accessible in the event of fire in the pump compartment... - Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing... -

Have certificates of test for motors under 100 BHP intended for essential sea services been supplied and the results found as per Rule... -

Control Gear and Resistances, are they constructed and fitted as per Rule... Yes Lightning Conductors, where required are they fitted as per Rule... - Ships carrying Oil having a Flash Point less than 150° F. Have all the special requirements of the Rules for such ships been complied with... Yes, are all fuses of an Approved Cartridge Type... Yes, make of fuse... "Zed" Are the fittings for pump rooms, 'tween deck spaces, etc., in accordance with the special requirements for such ships... Yes Are the cables lead covered as per Rule... Yes

E.S.D., if fitted state maker... - location of transmitter... - and receiver... -

Spare Gear, if the vessel is for open sea service have spares been provided as per Rule and suitably stored in dry situations... Yes

Insulation Tests, has the insulation resistance of all circuits and apparatus been tested and found satisfactory... Yes

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	MAKER.	RATED AT				PRIME MOVER.	
			Kilowatts per Generator.	Volts.	Ampères.	Revs. per Min.	TYPE.	MAKER.
MAIN ...	2	Sunderland Forge	25	110	227	675	steam	Sunderland Forge
EMERGENCY ...								
ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
		No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATOR ... No. 1	25	1	37/.072	227 ✓	246	66	V.C.	L.C.A.B.
" " EQUALISER ... No. 2	25	1	37/.072	227 ✓	246	72	V.C.	L.C.A.B.
EMERGENCY GENERATOR ...								
ROTARY TRANSFORMER: MOTOR GENERATOR ...								

MAIN DISTRIBUTION CABLES (to Section Boards, Distribution Fuse Boards, etc.).

DESCRIPTION.	No.	MAKER.	Kilowatts per Generator.	Volts.	Ampères.	Revs. per Min.	TYPE.	MAKER.	
Midship Section Panel S-1	1			37/.083	82 ✓	296	540	V.C.	L.C.A.B.
Bridge " " S-2, off S-1	1			7/.044	106 ✓	31	80	V.I.R.	L.C.
Aft " " S-3	1			19/.064	92.2 ✓	135	132	V.C.	L.C.A.B.
E.R.Vent " " S-4	1			7/.064	70 ✓	75	108	V.C.	L.C.A.B.

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
			No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
Midship thermotank	1	3	1	7/.044	20.4 ✓	31	70	V.I.R.	L.C.
Aft " "	1	3	1	7/.044	20.4 ✓	31	184	"	"
Engine Room Vent Fans	1	4	1	7/.052	35 ✓	37	66	"	"
" " " "	1	4	1	7/.052	35 ✓	37	114	"	"
Galley Blower No.1	1	.5	1	3/.029	1.8 ✓	10	40	"	"
" " 2	1	.5	1	3/.029	1.8 ✓	10	46	"	"

The Electrical Equipment is installed in accordance with the approved plans and the requirements of the Rules.  
 All Insulated Conductors are guaranteed to have been tested at the maker's works as specified in the Rules.  
 The foregoing is a correct description.

Sunderland Forge & Eng Co Ltd. Electrical Contractors. Date 19. 9. 1949  
N. S. Gilling

COMPASSES.

Have the compasses been adjusted under working conditions yes

PER AND ON BEHALF OF  
**JOSEPH L. THOMPSON & SONS, LIMITED.**

Builder's Signature. Date 21/9/49.

Have the foregoing descriptions and schedules been verified and found correct yes

Is this installation a duplicate of a previous case no If so, state name of vessel -

Plans. Are approved plans forwarded herewith yes If not, state date of approval -

Certificates. Are certificates of test for ~~motors engaged on essential sea services and~~ generators forwarded herewith yes

General Remarks. (State quality of workmanship, whether insulation tests, etc., have been made, opinions as to class, etc.)

The electrical equipment of this vessel has been installed under special survey in accordance with the approved plans and the "Rules For Electrical Equipment": The materials and workmanship are good: Upon completion, trials of the equipment were witnessed as satisfactory and the insulation resistance of all circuits was measured and found good. This equipment is in my opinion suitable for a classed vessel.

*Noted SWK 24/11/49*

2m. 3. 10. Transfer. (MADE AND PRINTED IN ENGLAND.) (The Surveyors are requested not to write on or below the space for Committee's Minute.)

Total Capacity of Generators (2x25) 50 Kilowatts.

The amount of Fee ... £47. 10. 0. When applied for, OCT 17 1949

Travelling Expenses (if any) £ : : When received, 19

*B. D. Mann*  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI 25 NOV 1949

Assigned \_\_\_\_\_