

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

14 APR 1948

Received at London Office.....

Date of writing Report. 8.4.48 When handed in at Local Office. 13th April 1948 Port of Sunderland

No. in Survey held at Sunderland. Date, First Survey. 9.3.48 Last Survey. 6.4.1948
Reg. Book. (Number of Visits. 5)

on the S.S. "CYRUS SEARS" Tons { Gross. 1814
Net. 1019

Built at San Francisco Cal. U.S.A. By whom built. Pacific Bridge Co. Yard No. - When built. 1943

Owners. Stephenson Clarke Ltd Port belonging to. London

Electrical Installation fitted by - Contract No. - When fitted. 1943

Is vessel fitted for carrying Petroleum in bulk. No Is vessel equipped with D.F. No E.S.D. Yes Gy.C. No Sub.Sig. No

Have plans been submitted and approved. Slips plans examined at this port. System of Distribution. Two wire insulated Voltage of supply for Lighting. 110

Heating. - Power. 110 Direct or Alternating Current, Lighting. Yes Power. Yes If Alternating Current state periodicity. - Prime Movers,

has the governing been tested and found as per Rule when full load is suddenly thrown on and off. Yes Are turbine emergency governors fitted with a

trip switch as per Rule. - Generators, are they compound wound. Yes, are they level compounded under working conditions. Yes,

if not compound wound state distance between generators. - and from switchboard. - Where more than one generator is fitted are they

arranged to run in parallel. Yes, are shunt field regulators provided. Yes 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. No and the results found as per rule. - Are the lubricating arrangements and the construction

of the generators as per rule. Yes Position of Generators. engine room situated on raised platform.

is the ventilation in way of generators satisfactory. Yes are they clear of inflammable material. Yes, if situated

near unprotected combustible material state distance from same horizontally. - and vertically. - are the generators protected from mechanical

injury and damage from water, steam and oil. Yes, are the bedplates and frames earthed. Yes and the prime movers and generators in metallic

contact. Yes Switchboards, where are main switchboards placed. on angle frame next generators

are they in accessible positions, free from inflammable gases and acid fumes. Yes, are they protected from mechanical injury and damage from water, steam

and oil. Yes, if situated near unprotected combustible material state distance from same horizontally. - and vertically. - what insulation

material is used for the panels. Stone "Aindanyo" if of synthetic insulating material is it an Approved Type. Yes, if of

semi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule. - Is the frame effectually earthed. Yes

Is the construction as per Rule. Yes, including accessibility of parts. Yes, absence of fuses on the back of the board. Yes, individual fuses

to pilot and earth lamps, voltmeters, etc. Yes locking of screws and nuts. Yes, labelling of apparatus and fuses. Yes, fuses on the "dead"

side of switches. Yes Description of Main Switchgear for each generator and arrangement of equaliser switches. double-pole air-
break circuit breaker with O/L & P.S. trips and a separate linked equalising switch

and for each outgoing circuit. a double-pole Rief's switch and double-pole fuse.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule. Yes Instruments on main switchboard. 2

ammeters. 2 voltmeters. - synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to the

equaliser connection. Yes Earth Testing, state means provided. E lamps connected to E through fuses

Switches, Circuit Breakers and Fuses, are they as per Rule. Yes, are the fuses an approved type. Yes, are all fuses labelled as

per Rule. - If circuit breakers are provided for the generators, at what overload current did they open when tested. full load the reversed current

protection devices connected on the pole opposite to the equaliser connection. Yes, have they been tested under working conditions, and at what current

did they operate. 59 Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule. Yes

Cables, are they insulated and protected as per the appropriate Tables of the Rules. 6 B.I.E. Standards if otherwise than as per Rule are they of an approved type. Yes,

state maximum fall of pressure between bus bars and any point under maximum load. - are the ends of all cables having a sectional area of 0.04

square inch and above provided with soldering sockets. Yes Are paper insulated and varnished cambric insulated cables sealed at the ends. Yes

Handwritten signature and date: 7.5.48



with insulating compound — or waterproof insulating tape Yes. 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 Yes, are cables laid under machines or floorplates No, if so, are they adequately protected —. Are cables in machinery spaces, galleys, laundries, etc., lead covered Yes or run in conduit —. State how the cables are supported and protected Main feed in solid metal trough through bulkhead fore & aft: In accommodation, cables on open hangers suspended from the deckhead.

Are all lead sheaths, armouring and conduits effectually bonded and earthed Yes. Refrigerated chambers, are the cables and fittings as per Rule —. Are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands Yes, where unarmoured cables pass through beams, etc., are the holes effectively bushed Yes and with what material Lead. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule Yes. Emergency Supply, state position — and method of control —.

Navigation Lamps, are they separately wired Yes controlled by separate double pole switches Yes 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. Secondary Batteries, are they constructed and fitted as per Rule —, are they adequately ventilated — what is the battery capacity in ampere hours —.

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof Yes. Are fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present No, if so, how are they protected — and where are the controlling switches fitted —, are all fittings suitably ventilated Yes, are all fittings and accessories constructed and installed as per Rule Yes. Searchlight Lamps, No. of —, whether fixed or portable —, are their fittings as per Rule —. 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 Yes and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil Yes, if situated near unprotected combustible material state minimum distance from same horizontally — and vertically —. Are motors coupled to oil fuel transfer and unit 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 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 —, are all fuses of the cartridge type — are they of an approved type —. Are the fittings for pump rooms, tween deck spaces, etc., in accordance with the special requirements for such ships —. Are the cables lead covered as per Rule —. Spare Gear, if the vessel is for open sea service have spares been provided as per Rule Yes, are they 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	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	25	120	208	400	Steam Engines		
EMERGENCY								
ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
		No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATOR	25	1	37/064	208	210	48	V.C.	L.C. & B.W.A.
" " EQUALISER		1	37/064		210	24	"	"
" " EQ.	25	1	37/064	208	210	36	"	"
" " EQ.		1	37/064		210	18	"	"
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
	No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
AUX. SWITCHBOARDS AND SECTION BOARDS							
Deck Lighting Section Panel 'B'	1	7/064	17	75	110	V.C.	L.C. & B.W.A.
Bridge Deck " " 'C'	1	7/064	40	75	180	"	"
Engine Room " " 'D'	1	7/064	62	75	36	"	"
Aft Tg " " 'E'	1	7/052	16	57	176	"	"

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION.	No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
			In the Circuit.	Rule.			
WIRELESS	1	7/064	30	75	180	V.C.	L.C. & B.W.A.
NAVIGATION LIGHTS	1	7/029	6	15	120	"	"
LIGHTING AND HEATING							
Aft Deck Tg Pump. 'L-18'	1	7/029	5	15	150	V.C.	L.C. & B.W.A.
Fore " " " 'L-14'	1	7/029	6	15	280	"	"
Handlight Panel 'A'	1	7/052	24	57	108	"	"
D.S. Supply	1	7/064	62	75	18	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
			No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
Main Circulating Pump	1	25	1	37/064	190	210	140	V.C.	L.C. & B.W.A.
No. 1 Condensate "	1	3	1	7/044	26	42	120	"	"
No. 2 " " "	1	3	1	7/044	26	42	120	"	"
Refrigerating Motor	1	1/2	1	7/029	15	15	160	"	"
Fore Water Pump Motor	1	15	1	7/029	57	15	100	"	"

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 Engineers.

Date *12-4-1948*

V.S. Green

COMPASSES.

Minimum distance between electric generators or motors and standard compass.....

Minimum distance between electric generators or motors and steering compass.....

The nearest cables to the compasses are as follows:—

A cable carrying Amperes feet from standard compass feet from steering compass.

A cable carrying Amperes feet from standard compass feet from steering compass.

A cable carrying Amperes feet from standard compass feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power.....

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted.....

The maximum deviation due to electric currents was found to be degrees on course in the case of the standard compass, and degrees on course in the case of the steering compass.

Builder's Signature. Date.....

DESIGN N.3-S-R1. CARGO VESSELS U.S.A.

Is this installation a duplicate of a previous case..... If so, state name of vessel.....

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

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

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 examined, tested, and found to comply in general principle with the Society's "Rules for Electrical Equipment". The ship's set of plans was examined and found to be a true record of the installation as fitted. The cables are to the standards of the R.I.E.E. and of adequate current-carrying capacity for their several duties. The generators and motors were operated on load with satisfactory results and the insulation resistance of all circuits was found good. This equipment is in my opinion suitable for a vessel bearing the Society's class.

*-noted
B
9.5.48.*

Total Capacity of Generators *(2x25)* 50 Kilowatts.

The amount of Fee ... £ : : When applied for,19.....

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

B.S. Wain

Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI 14 MAY 1948*

Assigned *See minute on p. 111*

5m.498.—Transfer. (MADE AND PRINTED IN ENGLAND.) (The Surveyors are requested not to write on or below the space for Committee's Minutes.)



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