

28 JAN 1960

Rpt. 13.

No. 35215

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 12th Jan. 1960 When handed in at Local Office 25-1-1960 Port of Antwerp

No. in Survey held at Antwerp Date, First Survey 19-5-59 Last Survey 2-12-1959
Reg. Book. (No. of Visits 15)

40414 on the tanker "HECTOR HAWK" Tons Gross 16807 Net 10252

Built at Tamise By whom built Jos Boel & Sons Yard No. 1362 When built 1959

Owners Hector Whaling Ltd. Port belonging to London

Installation fitted by Electro Navale et Industrielle S.A. When fitted 1959

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

Plans, have they been submitted and approved yes System of Distribution Three phase three wire Voltage of Lighting 115

Heating 115 Power 440 D.C. or A.C., Lighting Power If A.C. state frequency 60

Prime Movers, has the governing been found as per Rule when full load is thrown on and off yes Are turbine emergency governors fitted

with a trip switch - Generators, are they compound wound Alternators with exciters, and level compounded under working conditions -

Are the generators arranged to run in parallel yes Is the compound winding connected to the negative or positive pole -

Have machines 100 kw. and over been inspected by the Surveyors during manufacture and testing yes Have certificates of test for machines

under 100 kw. been supplied and the results found as per Rule yes Position of Generators One forwd. Stbd. side, one aft
stbd. side and one forwd. port side all in main engine room.

is the ventilation in way of generators satisfactory yes are they clear of inflammable material and protected from mechanical injury and

damage from water, steam and oil yes Switchboards, where are main switchboards placed Platform deck

Port side main engine room, thwart ship against forwd. bulkhead.

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

steam and oil yes, what insulation is used for the panels Dead front type (Resarm), 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 construction as per Rule, including locking of screws and nuts yes Description of Main Switchgear

for each generator and arrangement of equaliser switches three pole circuit breakers S.A.C.E. Series P1 size 800 amp.

and the switch and fuse gear (or circuit breakers) for each outgoing circuit three pole circuit breakers S.A.C.E. series Z2,

P1 and Z and two pole circuit breakers Siemens, series SN with back-up protection by Gehess fuses.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule yes Instruments on main switchboard 6

ammeters 5 voltmeters 2 synchronising devices. For compound machines in parallel are the ammeters and reverse current

protection devices connected on the pole opposite to the equaliser connection - Earth Testing, state means provided earth

fault indicating lamp on each pole Preference Tripping, state if provided yes, and tested yes

Switches, Circuit Breakers and Fuses, are they as per Rule yes, are the fuses an Approved Type yes

make of fuses Gehess, are all fuses labelled yes If circuit breakers are provided for the generators, at what

overload do they operate 580 amp. 20 sec., and at what ^{power} current do the reverse ^{power} current protective-

devices operate 24 KW 10 sec. Cables, are they insulated and protected as per Rule yes

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 6 volts. Are all paper insulated and varnished cambric insulated cables sealed at the ends 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 any cables laid under machines or floorplates yes, if so, are they adequately protected yes State

type of cables (if in conduit this should also be stated) in machinery spaces V.I.R. IC & A., galleys V.I.R. IC & A.

and laundries V.I.R. LC & A., VC. LC & A. MIC. VC. LC & A. MIC. State how the cables are supported or protected clipped to steel trays or to bulk-

heads. Run in heavy steel conduit. Protected against mechanical damage where necessary. Cables on fore and

aft gangway installed with adequate expansion bends.

Are all lead sheaths, armouring and conduits effectually bonded and earthed yes 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, provision Refrigerated/chambers, are the cables and fittings as per Rule yes

Have refrigeration fan motors been constructed under survey - and test certificates supplied -

Are the motors accessible for maintenance at all times -



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Lloyd's Register
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Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule yes Emergency Supply, state position one battery on poopdeck (P.S.) and one on top of wheel house.

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, fitted and adequately ventilated as per Rule yes state battery capacity in ampere hours One of 60 amp/hr. and one of 40 amp/hr. Where required to do so does it comply with 1948 International Convention -

Lighting, is fluorescent lighting fitted yes If so, state nominal lamp voltage 115 volt and compartments where lamps are fitted Engine and Boiler rooms.

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof yes

Searchlights, No. of one, whether fixed or portable portable, are they of the carbon arc or of the filament type filament

Heating and Cooking, is the general construction as per Rule yes, are the frames effectually earthed yes, are heaters in the accommodation of the convection type none 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 yes 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 yes

Lightning Conductors, where required are they fitted as per Rule -

Ships carrying Oil having a Flash Point of 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 Cehess Are the fittings for pump rooms, 'tween deck spaces, etc., in accordance with the special requirements for such ships yes Are all cables lead covered as per Rule yes

E.S.D., if fitted state maker M.I.M.C.Co.Ltd. location of transmitter and receiver in cofferdam between frames 37/38

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				TYPE.	PRIME MOVER.
			Kw. per Generator.	Volts.	Amps.	Revs. per Min.		
MAIN	3	W.H. Allen Sons & Co. Ltd.	240	450	340	450	Diesel	W.H. Allen Sons & Co. Ltd. Bedford.
EMERGENCY ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	No. of	Kw.	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	3	240	2	51/06	385	400	28	MIC.	copper sheathed
EQUALISER									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER: MOTOR GENERATOR									

440 V MAIN DISTRIBUTION CABLES (to Auxiliary Switchboards, etc.) From main switch board.

DESCRIPTION.	No. of	Kw.	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.			
P.MP.01/PMP.02 feeder to steering gear	1		1	7/.064	180	56	64	VC	LC & A.
PF.14 to sect. board. T14	1		1	19/.052	40	45	34	V.R.I.	LC & A.
PM.13 to sect. board T13	2		2	19/.083	215	282	26	V.C.	LC & A.
PV.V2 to sect. boards V2-V3	1		1	19/.083	130	141	36	VC.	LC & A.
PA.7 to sect. board T7	1		1	19/.052	65	77	58	VC.	LC & A.
PM.11 to sect. board T 11	1		1	19/.064	50	58	15	V.R.I.	LC & A.
PM.01 to cargo oil pump.	2		2	5I/15	595	660	15	MIC.	copper sheathed
PG.3/PGG3 to sect. board T 3.	1		1	19/.052	60	77	105	VC	LC & A.
sh. G.P. shore connection	1		1	5I/1	250	260	40	MIC.	copper sheathed
PV.V1 to sect. brd.V1	1		1	19/.052	70	77	108	VC	LC & A.
PG. TR. 1-3 to transformers.	1		1	52/0I45	80	90	10	MIC	copper sheathed
TR1 GP from transformers to 115 volt main switchboard.	1		1	5I/06	175	200	10	MIC	copper sheathed

115 V. DISTRIBUTION CABLES (to Section-Boards and Distribution-Fuse-Boards, etc.) from main switchboard.

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).	INSULATION.	PROTECTIVE COVERING.
			In the Circuit.	Rule.			
P.E.12 to distr.fuse board T12	1	7/.044	20	22	26	V.R.I.	LC & A.
P.G.10 to distr.fuse board T10 & T7	1	19/.083	115	141	62	VC	LC & A.
P.E.8 to distr.fuse board T8 & T5	1	19/.064	75	100	31	VC.	LC & A.
P.E.9 to distr.fuse board T9 & T6	1	19/.052	60	77	42	VC.	LC & A.
P.E.15 to distr.fuse board T15	1	7/.036	10	17	29	V.R.I.	LC & A.
P.T.TA. to fender alarm board.	1	7/.029	10	15	18	V.R.I.	LC & A.
3GTR4/5/6 from 440 Volt sect.br.d.T3 to transformers.	2	7/.052	60	64	5	V.R.I.	LC & A.
TR4/5/6 G3 from transformers to 115 Volt. Sect. board T3.	1	19/064	130	143	5	VC.	LC & A.
FROM SECTION BOARDS TO DISTRIBUTION FUSE BOARDS.							
3E2 from 115 V. Sect. brd. T3 to distr. fuse board T2	1	19/.064	50	58	26	V.R.I.	LC & A.
3N1 from 115 V. Sect. brd. T3 to distr. fuse board T1	1	3/.036	10	10	28	V.R.I.	LC & A.
3.E.4 from 115 V. Sect. brd. T3 to distr. fuse board. T4.	1	7/.064	20	32	70	V.R.I.	LC & A.
7A8 from 440 V. Sect.br.d.T7 to distr. fuse board T8.	1	3/036	10	10	30	V.R.I.	LC & A.

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.R.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.			
D1M01 to Emergency M.E. blower	1	70	1	19/.064	88	100	28	VC	LC & A.
D1M02/03 air compressors	2	80	1	19/.083	100	141	29	VC	LC & A.
D1M04/05 SW & FW cooling pumps	2	75	1	19/.064	92	100	15	VC	LC & A.
D1M06/07 Lub.oil pumps	2	85	1	19/.083	106	141	26	VC	LC & A.
D2M01/02 Lub.oil pump blowers.	2	1.8	1	3/.036	3.8	10	22	V.R.I.	LC & A.
D2M03/04 Fuel valve cooling pps.	2	1.5	1	3/.036	2.6	10	17	V.R.I.	LC & A.
D2M06 Fuel transfer pump.	1	25	1	19/.064	35	58	30	V.R.I.	LC & A.
D2M07 Sea water pp. aux. motor	1	5.5	1	3/.036	7.1	10	15	V.R.I.	LC & A.
D2M08 General Service-Fire pp.	1	12.5	1	7/.044	16.5	22	35	V.R.I.	LC & A.
D2M10 Diesel oil transfer pp.	1	1.5	1	3/.036	2.9	10	12	V.R.I.	LC & A.
13M01 Exhaust boiler feed pump.	2	3	1	3/.036	4.5	10	8	V.R.I.	LC & A.
13M04/05 Forced draught fans	2	35	1	7/.064	51	56	15	VC.	LC & A.
13M06/07 Induced draught fans.	2	32	1	7/.064	44	56	15	VC.	LC & A.
13M08/09 Primary feed pumps	2	2.5	1	3/.036	4	10	22	V.R.I.	LC & A.
PMP01/02 Steering gear motor.	2	25	1	7/.064	34	56	64	VC.	LC & A.

26/2/60

NOTE.—Use Rpt. 13 Continuation Sheet if the above space is insufficient.

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.

S. H. R.
L'ELECTRO-NAVALE & INDUSTRIELLE S.A.

Electrical Contractors.

Date 25-1-60

COMPASSES.

Have the compasses been adjusted under working conditions. yes

CHANTIERS NAVALS JON. ROEL & FRA

Société Anonyme

PARIS

Builder's Signature.

Date 25-1-60

F. C. Van Dyck

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 and materials, opinions as to class, etc.) The electrical equipment of this vessel has been constructed and installed under the Special Survey of the Society's Surveyors in accordance with the Rules, the Secretary's letters and the approved plans. The materials and workmanship are good. Insulation and other tests required by the Rules have been carried out with satisfactory results.

The electrical equipment of this vessel is, in my opinion, eligible in my opinion, to be incorporated in the class assigned to the machinery.

Total Capacity of Generators 720 Kilowatts.

The amount of Fee ... £15 14/6 When applied for, 12-1-1960

Travelling Expenses (if any) £3 10/0 When received, 10

G. Valckeneers
Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRIDAY - 4 MAR 1960

Assigned