

Date of writing report July 13, 1959 Received London Port Baltimore, Md. No. 11679
 Survey held at Baltimore, Md. No. of visits In shops First date June 10 Last date June 24, 1959
 On vessel 12

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. 64506 Name M.S. "HEDDA DAN" Gross tons 5188
 Owners J. Lauritzen (D/S Ocean A/S) Managers J. Lauritzen, Copenhagen Port of Registry Esbjerg
 Copenhagen, Denmark By Pennsylvania Shipyard, Inc. Yard No. 315 Year Month 1944
 Hull built at Beaumont, Texas Eng. No. TSM-21689 (s) When 1944
 TSM-21690 (p) When 1944
 Main Engines made at Milwaukee, Wis. By Nordberg Manf. Co.
 Bearing made at Buffalo, N.Y. By Farrel Birmingham Co.
 Donkey boilers made at Danville, N.Y. By Foster Wheeler Corp. Blr. Nos. - When 1944
 Machinery installed at Beaumont By Pennsylvania Shipyard, Inc. When 1944
 Particulars of restricted service of ship, if limited for classification none
 Particulars of vegetable or similar cargo oil notation, if required none

Is ship intended to carry petroleum in bulk? no
 If so, is it for cargo purposes? - Type of refrigerant -
 refrigerating machinery fitted? no
 Is the refrigerated cargo installation intended to be classed? -

the refrigerating machinery compartment isolated from the propelling machinery space?
 The following particulars should 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. Where the
 ording is not applicable to the installation, a black line may be inserted. 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 number should be stated.

No. of main engines 2 No. of propellers 1 Brief description of propulsion system Twin 2 sc. S.A. Electro Magnetic Slip Coupled to
 SR gear to one propeller shaft

MAIN RECIPROCATING ENGINES. Licence Name and Type No. Nordberg two cycle mechanical injection marine Diesel Engine

No. of cylinders per engine 6 Dia. of cylinders 21 1/2" stroke(s) 29" 2 or 4 stroke cycle 2 Single or double acting single

Normal approved BHP per engine 2075 at 220 RPM of engine and 90 RPM of propeller.

Corresponding MIP 73 lbs (For DA engines give MIP top & bottom) Maximum cylinder pressure 750 lbs Machinery numeral 830
 Are the cylinders arranged in Vee or other special formation? no No. of crankshafts per engine 7 (scavenge pump)

TWO STROKE ENGINES. Is the engine of opposed piston type? no If so, how are upper pistons connected to crankshaft?

Is the exhaust discharged through ports in the cylinders or through valve(s) in the cylinder covers? ports in cyls. No. and type of mechanically driven scavenge pumps or blowers per
 engine and how driven one each main engine, single piston type, main engine driven

No. of exhaust gas driven scavenge blowers per engine - Where exhaust gas driven blowers only are fitted, can the engine operate with one blower out of action?

If a stand-by or emergency pump or blower is fitted, state how driven - No. of scavenge air coolers - Scavenge air pressure at full
 power 2 lbs 2 oz Are scavenge manifold explosion relief valves fitted? yes

FOUR STROKE ENGINES. Is the engine supercharged? - Are the undersides of the pistons arranged as supercharge pumps? - No. of exhaust gas driven blowers per
 engine - No. of supercharge air coolers per engine - Supercharge air pressure - Can engine operate without supercharger? -

TWO ~~FOUR~~ STROKE ENGINES-GENERAL. No. of valves per cylinder: Fuel 1 Inlet none Exhaust none Starting 1 Safety 1

Material of cylinder covers cast steel Material of piston crowns cast steel Is the engine equipped to operate on heavy fuel oil? no

Cooling medium for -Cylinders fresh water Pistons lub oil Fuel valves fresh water Overall diameter of piston rod for double acting engines -

Is the rod fitted with a sleeve? - Is welded construction employed for: Bedplate? no Frames? no Entablature? no Is the crankcase separated from the

underside of pistons? no Is the engine of crosshead or trunk piston type? trunk Total internal volume of crankcase - No. and total area of explosion relief

devices 6(p), 6(s) 6 x 100 sq.in. per engine Are flame guards or traps fitted to relief devices? yes Is the crankcase readily accessible? yes If not, must the engine be removed for

overhaul of bearings, etc? - Is the engine secured directly to the tank top or to a built-up seating? built up by seating air is the engine started?

Can the engine be directly reversed? yes If not, how is reversing obtained? -

Has the engine been tested working in the shop? yes How long at full power? not known

CRANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system 23-3-59 439F. State barred speed range(s), if imposed

for working propeller none For spare propeller - Is a governor fitted? yes Is a torsional vibration damper or detuner fitted to the shafting? no

Where positioned? - Type - No. of main bearings 9 Are main bearings of ball or roller

type? roller Distance between inner edges of bearings in way of crank(s) 26" Distance between centre lines of side cranks or eccentrics of opposed piston engines -

Crankshaft type: Built, semi-built, solid. (State which) solid

Diameter of journals 14 3/4" Diameter of crankpins 14 3/4" Breadth of webs at mid-throw 20" Axial thickness of webs 7"

If shrunk, radial thickness around eyeholes - Are dowel pins fitted? - Crankshaft material Journals steel & white Approved by ABS

Webs steel Tensile strength -

Diameter of flywheel 95 1/2" Weight - Are balance weights fitted? no Total weight - Radius of gyration -

Diameter of flywheel shaft 14 3/4" Material steel Minimum approved tensile strength -

Flywheel shaft: separate, integral with crankshaft, integral with thrustshaft. (State which) Outer element of magnetic coupling bolted directly on end
 flange of crankshaft. Timer element bolted to gear quill shaft flange.

MAIN GAS TURBINES. Name and Type No.

No. of sets of turbines..... Open or closed cycle..... BHP per set..... at..... RPM of output shaft.....

How is drive transmitted to propeller shaft?.....

ARRANGEMENT OF TURBINES. HP drives..... at..... RPM HP gas inlet temperature..... pressure.....

(A small diagram should be attached showing gas cycle.)

IP drives..... at..... RPM IP gas inlet temperature..... pressure.....

LP drives..... at..... RPM LP gas inlet temperature..... pressure.....

No. of air compressors per set..... Centrifugal or axial flow type?..... Material of turbine blades..... Mate.....

compressor blades..... No. of air coolers per set..... No. of heat exchangers per set..... How are turbines started?.....

How is reversing effected?..... Are the turbines operated in conjunction with free piston gas generators?.....

Total No. of free piston gas generators..... Diameter of working pistons..... Diameter of compressor pistons..... No. of double stroke.....

minute at full power..... Gas delivery pressure..... Gas delivery temperature..... Have the turbines and attached equipment been tested w.....

in the shop?..... How long at full power?.....

ELECTRIC PROPULSION (Reciprocating engines or gas turbines. Electrical particulars to be reported on Form 4d.)

No. of generators..... KW per generator..... at..... RPM AC or DC?..... Position.....

No. of propulsion motors..... SHP per motor..... at..... RPM Position.....

How is power obtained for excitation of generators?..... Motors?.....

REDUCTION GEARING (Reciprocating engines or gas turbines. A small line sketch should be attached showing arrangement of gearing.)

Is gearing of single or double helical type? double..... If single, position of gear thrust bearing..... Is gearing of epicyclic type? and helix.....

PCD of pinions: 1st reduction 14.044" Second reduction..... PCD of wheels: First reduction..... Main 106.608".....

Material of pinions steel..... Tensile strength..... Material of wheel rims forged carbon steel..... Tensile strength.....

Are gear teeth surface hardened? no..... How are teeth finished? machined by generating process..... Diameter of pinion journals 15"..... Wheel journals 16".....

Are the wheels of welded construction? yes..... Is gearcase of welded construction? casting..... Has the wheel/gearcase been heat treated on comp.....

of welding? wheels..... Where is the propeller thrust bearing located? forward of reduction gear..... Are gear bearings of ball or roller type? roller.....

CLUTCHES, FLEXIBLE COUPLINGS, ETC. If a clutch or other flexible connection is fitted between engine/turbine and gearing or between engine and line shafting give

description and, for clutches, state how operated magnetic coupling by Westinghouse, Excitation voltage 240 DC, 88 Amps.

Can the main engine be used for purposes other than propulsion when declutched? no..... If so, what?.....

STRAIGHT SHAFTING. Diameter of thrustshaft 14 3/4"..... Material steel..... Minimum approved tensile strength.....

Shaft separate or integral with crank or wheel shaft? separated..... Diameter of intermediate shaft 14 3/4"..... Material steel.....

Minimum approved tensile strength..... Diameter of screwshaft cone at large end 16 3/8"..... Is screwshaft fitted with a continuous liner? yes.....

Diameter of tube shaft. (If these are separate shafts)..... Is tube shaft fitted with a continuous liner in way of stern tube..... Thickness of screw/tube shaft line.....

bearings..... Thickness between bearings..... Material of screw/tube shaft steel..... Minimum approved tensile strength.....

Is an approved oil gland fitted? no..... If so, state type..... Length of bearing next to and supporting propeller 5' 6 1/4".....

Material of bearing Lignum Vitae..... In multiple screw vessels is the liner between stern tube and A bracket continuous?..... If not, is the exposed length of shafting bet.....

liners readily visible in dry dock?.....

PROPELLER. Diameter of propeller 17' 6"..... Pitch 16' 3"..... Built up or solid solid..... Total developed surface 101 sq.ft.....

No. of blades 4..... Blade thickness at top of root fillet 7 3/4"..... Blade material Manganese bronze..... Moment of inertia of dry propeller.....

If propeller is of special design, state type no..... Is propeller of reversible pitch type? no..... If so, is it of approved design?.....

State method of control..... Material of spare propeller Manganese bronze..... Moment of inertia.....

AIR COMPRESSORS & RECEIVERS. No. of main engine driven compressors per engine none..... Can they be declutched?.....

No. of independently driven air compressors. (State capacity, prime mover, position in ship, and Port and No. of certificate) Two main, 100 g.f.p.m. each, elect.....

driven (ss) inboard and outboard; one aux. 10 g.f.p.m. elect. driven (ss).....

No. of starting air receivers. (Main and Aux. State capacity of each, position in ship and Port and No. of Certificate) Outboard (s) ECIW.14219.WP.500 lbs TP 100.....

ABS 2144TS 2-1-44. Center (s) ECIW.14221.SP.500 lbs.TP1000. ABS 2144TS. 2-1-44 inboard (s) ECIW 14226 WP.....

TP 550 ABS 2144TS 2-1-44.....

How are receivers first charged? emergency Diesel generator hand started for aux. air compressor..... Maximum working pressure of starting air system 275 lbs..... Are the safety devices.....

accordance with the Rules? yes..... Has the starting of the main engines been tested and found satisfactory? yes.....

COOLERS. No. of main engine fresh water coolers 3..... No. of main engine lubricating oil coolers 3.....

OIL FUEL TANKS. No. and position of oil fuel settling or service tanks not forming part of hull structure none.....

MAIN ENGINE DRIVEN PUMPS (No. and Purpose) none.....

INDEPENDENT PUMPS Name below essential pumps, state position and how driven. Give capacity of bilge pumps.	SUCTION										DELIVERY					
	Bilge Main	Bilge Direct	Ballast Main	Oil Fuel	Fresh Water Cooling	Sea	Feed Tanks	Lub. Oil	Boiler Feed	Salt Water Cooling	Fresh Water Cooling	Oil Fuel Tanks	Fire Main	Lub. Oil	Piston Cooling	Overboard
Ballast(p.s.a.) elect.425	X	X	X	X		X										X
(2) bilge (p) fore and aft elect. 425 each (g.p.m.)	X	X	X	X												X
(1) fire(p) elect. 400(g.p.m.)						X							X			
One gen.service (p) elect.400(g.p.m.)						X							X			
3 S.W.cooling (p.f.a).elect.		X				X				X						
3 F.W.cooling(p.f.a).elect.					X		X				X					
3 Lub.oil (p.f.a) elect.								X						X	X	
2 gear lub.oil(p.i & o)								X						X		
1 fuel oil transfer (p) elect				X								X				
2 fuel oil booster (s) elect.				X												
2 boiler feed (p) steam								X		X						X

BILGE SUCTIONS. No. and size in each hold, deep tank or pump room..... one (p) and one (s) in each hold 3"

No. and size connected to main bilge line in main engine room..... 1-5" and 4-4"..... In tunnel one 3"

In aux. engine room..... Size and position of direct bilge suction in machinery spaces 5"(1p), (1s).....

Size and position of emergency bilge suction in machinery spaces one 5" (p.s.aft in engine room).....

Is the bilge or ballast system fitted with means for separating oily water on the overboard discharge side? yes..... Do the piping arrangements comply with the Rules governing.....

special arrangements for ships carrying petroleum in bulk, cargo oil or closed for navigation in ice? (strike out words not applicable). yes.....

STEAM & OIL ENGINE AUXILIARIES

Position of each	Type	Made by	Port and No. of Rpt. or Cert.	Driven Machinery (For electric generators, state output)
ER.STBD. on floor level inboard and outboard two 6 cyl heavy duty oil engines	Enterprise Engine and Foundry Co.	American Bureau of Shipping	San Francisco, Cal.	two 250 K.W. each

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

Is an electric generator driven by Main Engine? no.....

STEAM INSTALLATION. No. of donkey boilers burning oil fuel one..... W.P. 65 lbs..... Type one cross drum straight tubes.....

Position upper flat after end of engine room.....

Is a superheater fitted? no..... Are these boilers also heated by exhaust gas? no..... No. of donkey boilers heated by exhaust gas only? one..... W.P. 60 lbs.....

Type one cross drum straight tubes..... Position forward of oil fired boiler..... Can the exhaust heated boilers deliver steam directly to the steam range 2-4-6-8-10-12-14-16-18-20-22-24-26-28-30-32-34-36-38-40-42-44-46-48-50-52-54-56-58-60-62-64-66-68-70-72-74-76-78-80-82-84-86-88-90-92-94-96-98-100..... yes.....

Port and No. of report on donkey boilers Baltimore 11679..... Is steam essential for operation of the ship at sea? no..... Are any steam pipes over 3 ins. bore? yes..... If so, what is their material? steel.....

For oil fired boilers is the arrangement of pipes, valves, controls, etc., in accordance with the Rules? yes..... No. of oil burning pressure units one.....

No. of steam condensers one..... No. of Evaporators one.....

STEERING GEAR. (State No. and Type of Steam Engines, Electric Motors, Hydraulic Pumps and other particulars) Lidgerwood electro hydraulic, opposed ram, slide type, 2 Westinghouse motors, 230 V x 129 Amps, 850 RPM, 35 HP, 2 pumps (Northern Pump Co.)

Have the Rule Requirements for fire extinguishing arrangements been complied with? yes..... Brief description of arrangements CO₂ system, 44 g1/min, 1500# pressure of which 30 bottles directly to engine room. 2-50# CO₂ bottles at donkey boiler flat. 6 portable foam extinguishers "Swift", 15 liters each, 2 CO₂-15# and 2-lgl. carbontetrach at switchboard

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..... Date and duration of full-power sea trials of main engines - 1944..... Does this machinery installation contain any features of a novel or experimental nature? (Give particulars) none.....

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). Vessel has been in continuous service since built and no abnormal vibrations observed.

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 vessel were constructed under Special Survey by the American Bureau of Shipping and U.S.C.G., the conditions and standard of workmanship is considered to be good and satisfactory. The machinery as far as opened for survey (see Report 9) is in good condition and examined under working conditions and found satisfactory.

The machinery of this vessel is eligible in my opinion to be classed with this Society with record of LMC 6.59 and DBS 6.59 on completion; subject to the oil fired boiler being re-tubed by September 1959 (3 mos. limit), boilers examined under steam and their safety valves adjusted under steam.

List of plans forwarded herewith:

General Arrangement

Arrangement of Shafting and Detail of Shafts

Boiler Feed & Blow Down System

Bilge Piping System in Engine Room

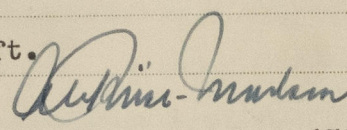
Fuel Oil, Ballast Systems in Double Bottom & Deep Tanks Forward

Bilge Piping System Forward

Fuel Oil Ballast Systems in Double Bottom and Deep Tanks Aft.

Fuel Oil Transfer & Ballast System - Engine Room

Waste Heat Boiler & Oil Fired Stand By Boiler


Engineer 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

Surveyed by the American Bureau of Shipping

CRANKSHAFT OR ROTORSHAFT

FLYWHEEL SHAFT

THRUSTSHAFT

GEARING

INTERMEDIATE SHAFTS

SCREW AND TUBE SHAFTS

PROPELLERS

OTHER IMPORTANT ITEMS

Is the installation a duplicate of a previous case?

yes

If so, state name of vessel

"GERDA DAN", "PAULA DAN", "MARNA DAN" & "TENNA DAN"

Date of approval of plans for crankshaft

Straight shafting

Gearing

Clutch

Separate oil fuel tanks

Pumping arrangements

Oil fuel arrangements

Cargo oil pumping arrangements

Air receivers

Donkey boilers

Dates of examination of principal parts:-

Surveyed by the American Bureau of Shipping

Fitting of stern tube

Fitting of propeller

Completion of sea connections

Alignment of crank shaft in main bearings

Engine chocks & bolts

Alignment of gearing

Alignment of straight shafting

Testing of pumping arrangements

Oil fuel lines

Donkey boiler supports

Steering machinery

Windlass

Date of Committee

NEW YORK

JUL 15 1959

Special Survey Fee

Decision

LMC 6.59

Subject

2 oil Engines

Classed 6.59

SPS 6.59

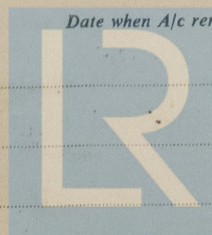
TS.(CL) 9.58.

2 WTDB 65 lbs.

Electric Light

Date when A/c rendered

Note:- DBS 6.59 on completion.



© 2021

Lloyd's Register
Foundation