

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

Name of Ship..... M.S. "HEDDA DAN"
(Or Contract No. if name unknown).

Owners J. Lauritzen / S/S Ocean A/S Copenhagen, Denmark
(Or Consignees)

Ship Built at Beaumont, Texas by Pennsylvania Shipyard, Inc. when 1944 Yard No. 15

Auxiliary Engines or Gas Turbines made at San Francisco by Enterprise Engr. & Foundry Co. when 1944 Eng. Nos. 15

Total No. of sets and description (including type name) two 6 cyl. 250 kw each Enterprise and one (emergency) 4 cyl.
catterpillar diesel engine 15 k.w.

INTERNAL COMBUSTION RECIPROCATING ENGINES. No. of cylinders per engine 6 Dia. of cylinders 12" Stroke 15"
2 or 4 stroke cycle 4 Maximum approved BHP 450 at 450 RPM Corresponding MIP - Maximum pressure 700 lbs
Fuel diesel oil Are cylinders arranged in Vee or other special formation? no If so, No. of
crankshafts per engine - Is engine of opposed piston type? no No. and type of mechanically driven scavenge pumps or blowers
per engine none No. of exhaust gas driven blowers or superchargers per engine none Is welded construction
used for: Bedplate? no Entablature? no Total Internal volume of crankcase (if 20 cu. ft. or over) - No. and total area of
crankcase explosion relief devices 2 on each, 28.2 g.i. Are flame guards or traps fitted? yes Cooling medium for: Cylinders fresh water
Pistons splash No. of attached pumps: F.W. cooling one S.W. cooling none Lubricating oil one How is engine started? air

SHAFTING. Is a damper or detuner fitted? no No. of main bearings 7 Are bearings of ball or roller type? roller Distance between inner edges of bearings in way of cranks ✓ 12 $\frac{1}{4}$ " Crankshaft: Built, ~~semi-built~~, solid. Material of crankshaft steel Approved minimum tensile strength - Dia. of pins 8" Journals 8 $\frac{1}{2}$ " Breadth of webs at mid throw 12 $\frac{1}{2}$ " Axial thickness 3 1/8" If shrunk, radial thickness around eyeholes - Dia. of flywheel - Weight - Are balance weights fitted no Total weight - Rad. of gyration - Dia. of flywheel shaft 8 $\frac{1}{2}$ " Has each engine been tested in shop? - How long at full power? - Was it tested with driven machinery attached? - Was the governing tested and found satisfactory? - Date of approval of torsional vibration characteristics (for engines of 150 BHP and over) - Date of approval of shafting - Identification marks on shafting - Particulars of driven machinery -

Port and No. of Certificate for Starting Air Receivers Same as report 1b

AUXILIARY GAS TURBINES.

BHP per set.....	At.....	RPM of output shaft.	Open or closed cycle?.....
Arrangement of turbines.	HP drives..... at.....	RPM	HP gas inlet temp..... pressure
(A small diagram should be attached showing gas cycle)	IP "..... at.....	"	IP " " " " " "
	LP "..... at.....	"	LP " " " " " "
No. of air compressors per set.....	Centrifugal or axial flow type?	Material of turbine blades.....	
Material of compressor blades.....	No. of air coolers per set.....	No. of heat exchangers per set.....	How are
turbines started?.....	Are the turbines operated in conjunction with free piston gas generators?.....		
Total No. of free piston gas generators.....	Dia. of working pistons.....	Dia. of compressor pistons.....	No. of double strokes
per minute at full power.....	Gas delivery pressure.....	Gas delivery temperature.....	
Have the turbines and attached equipment been tested in shop?.....	How long at full power?.....	Were they tested with driven machinery	
attached?.....	Particulars of gearing.....		
Date of approval of plans.....	Identification marks.....	Particulars of driven machinery.....	

ELECTRIC GENERATORS. Port and No. of Certificate for generators of 100 Kw. and over.....
 For generators under 100 Kw., has Makers' Certificate been obtained?..... Are Certificates attached?.....

The foregoing description is correct and the particulars are as approved for torsional vibration characteristics (strike out words not applicable)

Is this machinery duplicate of a previous case? yes If so, which? "MARNA DAN", "PAULA DAN", "GERDA DAN", "TENNA DAN"

GENERAL REMARKS. *State if the machinery has been constructed under special survey in accordance with the Rules, approved plans and Secretary's letters. State quality of materials and workmanship. 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 was examined under working conditions and found satisfactory and in my opinion eligible to be classed in conjunction with the main engines and donkey boiler with record of LMC 6.59

Survey Fee

Expenses

Date when a/c rendered.

Engineer Surveyor to Lloyd's Register

Declaration to be signed by Surveyor at fitting-out Port:— The above described machinery has been fitted on board the.....
at..... in a proper manner and found satisfactory when tested on the (date)..... under full working conditions.

Engineer Surveyor to Lloyd's Register

012925-012932-0128

Rpt. 4c

Date of writing report.....

Received London.....

Port.....

No.....

Survey held at.....

No. of visits.....

First date.....

Last date.....

FIRST ENTRY REPORT ON AUXILIARY STEAM TURBINE OR STEAM RECIPROCATING ENGINES

Name of Ship.....

(Or Contract No. if name unknown)

Owners.....

(Or Consignees)

Ship Built at.....

by.....

when.....

Yard No.....

Auxiliary turbines or engines made at.....

by.....

when.....

Eng. Nos.....

Total No. of sets and description.....

STEAM TURBINES.

No. of turbines per set.....

BHP per set.....

Steam pressure.....

Steam temperature.....

Type of turbines.....

Particulars of gearing.....

RPM of turbine shaft(s).....

PCD of pinion(s).....

PCD of wheels(s).....

Material of

pinion(s).....

Material of wheel rim(s).....

Has rotor been dynamically balanced?.....

Diameter of rotor

shaft at bearings.....

Does the set Include a steam condenser?.....

Is an emergency governor fitted?.....

No. and purpose of

attached pumps.....

Has the set been tested in the shop?.....

If so, for how long at full

power?.....

Was the governing tested and found satisfactory?.....

Was the set tested with driven machinery attached?.....

Identification marks.....

Particulars of driven machinery.....

STEAM RECIPROCATING ENGINES.

BHP of each.....

at.....

RPM.....

Steam pressure.....

Dia. of cylinders.....

Stroke.....

Dia. of crankshaft journals.....

Pins.....

Material of

crankshaft.....

Is crankcase enclosed?.....

If so, is the internal volume 20 cu. ft. or over?.....

No. and total area of crankcase

explosion relief devices fitted?.....

Are the bearings forced lubricated?.....

No. and Purpose of attached pumps.....

Is a Governor Fitted?.....

Identification Marks.....

Particulars of Driven Machinery.....

ELECTRIC GENERATORS.

Port and No. of Certificate for generators of 100 Kw. and over.....

For generators under 100 Kw., has Makers' Certificate been obtained?.....

Are Certificates attached?.....

The foregoing description is correct.

Manufacturer.....

Is this machinery duplicate of a previous case?.....

If so, which?.....

GENERAL REMARKS.

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

Survey Fee.....

Expenses.....

Date when a/c rendered.....

Engineer Surveyor to Lloyd's Register

Declaration to be signed by Surveyor at fitting-out Port — The above described machinery has been fitted on board the.....

at..... in a proper manner and found satisfactory when tested on the (date).....

conditions.

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Lloyd's Register

Engineer Surveyor to Lloyd's Register