

# REPORT ON MACHINERY

Chicago No. 19.

No. 14698.

Received at London Office THU. 5 APR. 1917

Survey Report 12th March 1917. When handed in at Local Office 4th Oct. 1917 Port of Stockholm & Chicago, Ill.  
Survey held at Stockholm & Manitowoc. Date, First Survey 10th July 1916 Last Survey 22nd Feb. 1917  
on the T.S. MOTOR VESSEL "ADA" STARBOARD ENGINES. (Number of Vents 18 Chicago 15th Sept. 1917  
+15=33. Gross 2124  
Tons } Net 1667  
When built 1917-9.

Built at Manitowoc, Wis. By whom built Manitowoc S.B. & Dry Dock Co. No. 80. when made 1917.  
made at Stockholm By whom made Messrs. J. & C. G. Bolinders Co. Ltd. (Cap. nos. 12444/12447. America order no. 125) when made 1917.  
made at ✓ By whom made ✓ when made ✓

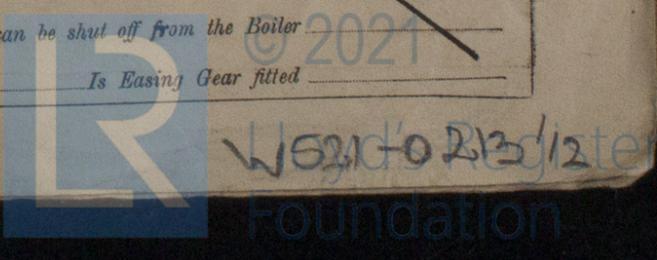
Horse Power 320 Owners United States Shipping Board Emergency Fleet Corp. Port belonging to Not stated.  
Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes.

ES, &c.—Description of Engines Bolinder two stroke cycle reversible No. of Cylinders 4 No. of Cranks 4  
with air injection. Length of Stroke 480 Revs. per minute 225 Dia. of Screw shaft as per rule 7" Material of screw shaft Steel  
as fitted 7 1/2" Dia. of Crank shaft journals as per rule 1 7/8" Dia. of Crank pin 180" Size of Crank webs 270" Dia. of thrust shaft under  
as fitted 180" Dia. of screw 6'-6" Pitch of Screw 5'-3" No. of Blades 3 State whether moveable No Total surface 15.5 sq ft.  
Length of stern bush 2'-10"  
If the liner is in more than one length are the joints burned ✓ If the liner does not fit tightly at the part  
bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive ✓ If two  
fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 2'-10"  
Dia. of Crank shaft journals as per rule 1 7/8" Dia. of Crank pin 180" Size of Crank webs 270" Dia. of thrust shaft under  
as fitted 180" Dia. of screw 6'-6" Pitch of Screw 5'-3" No. of Blades 3 State whether moveable No Total surface 15.5 sq ft.  
Diameter of ditto 100" Stroke 50" Can one be overhauled while the other is at work Yes.  
Diameter of ditto 110 Stroke 130" Can one be overhauled while the other is at work ✓  
No. and size of Suctions connected to both Bilge and Donkey pumps  
Room 1-3" to well. 2-3" to Bilges (Ballast pump). In Holds, &c. 3" - Port & Starboard. Forward hold & after hold.

Injections ✓ sizes ✓ Connected to condenser, or to circulating pump ✓ Is a separate Donkey Suction fitted in Engine room & size Portable. 2"  
Bilge suction pipes fitted with roses Yes Are the roses in Engine room always accessible Yes Are the sluices on Engine room bulkheads always accessible ✓  
Connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Inlet Valves. Blow off cock.  
Are they sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes Are the Discharge Pipes above or below the deep water line Above  
Are they fitted with a Discharge Valve always accessible on the plating of the vessel Yes Are the Blow Off Cocks fitted with a spigot and brass covering plate Yes  
Are they carried through the bunkers No Bunkers How are they protected ✓  
Are cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes  
Are Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges Yes  
Is Shaft Tunnel watertight No Tunnel Is it fitted with a watertight door ✓ worked from ✓

S, &c.—(Letter for record ) Manufacturers of Steel

Is Forced Draft fitted No. and Description of Boilers  
Tested by hydraulic pressure to Date of test No. of Certificate  
Area of fire grate in each boiler No. and Description of Safety Valves to  
Area of each valve Pressure to which they are adjusted Are they fitted with easing gear  
Mean dia. of boilers Length Material of shell plates  
Are the shell plates welded or flanged Descrip. of riveting: cir. seams  
Pitch of rivets Lap of plates or width of butt straps  
Working pressure of shell by rules Size of manhole in shell  
No. and Description of Furnaces in each boiler Material Outside diameter  
Description of longitudinal joint No. of strengthening rings  
Thickness of plates crown bottom Description of longitudinal joint No. of strengthening rings  
Combustion chamber plates: Material Thickness: Sides Back Top Bottom  
If stays are fitted with nuts or riveted heads Working pressure by rules  
Area at smallest part Area supported by each stay Working pressure by rules End plates in steam space:  
How are stays secured Working pressure by rules Material of stays  
Material of Front plates at bottom  
Greatest pitch of stays Working pressure of plate by rules  
Material of tube plates Thickness: Front Back Mean pitch of stays  
Girders to Chamber tops: Material Depth and  
Number and pitch of stays in each  
Steam dome: description of joint to shell % of strength of joint  
Description of longitudinal joint Diam. of rivet holes  
Crown plates Thickness How stayed  
Tested by Hydraulic Pressure to  
Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler  
Is Easing Gear fitted



IS A DONKEY BOILER FITTED?

Yes

If so, is a report now forwarded?

Yes.

SPARE GEAR. State the articles supplied:—

See continuation sheet.

The foregoing is a correct description,

MANITOWOC SHIP BUILDING CO.

Charles West

Manufacturer.

VICE PRESIDENT & MANAGER.

Dates of Survey while building... Total No. of visits 18 + 15 = 33.

Is the approved plan of main boiler forwarded herewith?

Dates of Examination of principal parts... Cylinders... Covers... Pistons... Rods...

Stern tube 29-3-17 Steam pipes tested... Engine and boiler seatings 19-5-17...

Completion of pumping arrangements 15-9-17... Boilers fixed... Engines tried...

Completion of fitting sea connections 21-4-17... Stern tube 21-4-17... Starting air receiver 22-2-1917...

Material of Crank shaft S.M. Steel... Identification Mark on Do... Material of Thrust shaft S.M. Steel...

Material of Tunnel shafts... Identification Marks on Do... Material of Screw shafts S... Identification Marks on Do...

Material of Steam Pipes solid drawn copper... Test pressure 60 atm... Is an installation fitted for burning oil fuel Yes...

Have the requirements of Section 49 of the Rules been complied with Yes... Is this machinery duplicate of a previous case Yes...

General Remarks (State quality of workmanship, opinions as to class, &c. (See appended sheet))

Material of compressor crank shaft S.M. Steel... Identification mark on ditto...

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Stockholm

Continuation of Report No. 1658 dated the 12th March 1917 on the

NER 320 B. H. P. motor, Cyl. Nos 12444/12447.

The designs of the crank & thrust shafts and the connecting rods of this type and size of Bolinder Motor have been submitted and approved (See letters E. 3/10/11; 1-7-14; 10-1-16...).

These shafts and connecting rods have been manufactured at the Sandviken and Björneborg Steel Works in accordance with the Rules. They inspected while being roughturned and finished and found good and sound. Their materials have been tested by the undersigned and found to fill requirements.

The cylinders, of cast iron, have been examined and found sound. Thickness of cylinderwalls stated to be 30 mm. and of waterjackets... Cylinders tested with hydraulic pressure to 529 lbs per sq. inch or twice the working pressure of 18 Atm. and found tight. They have been upper flange of each cylinder: Lloyd's Test 529 lbs 9.2.17 A Their waterjackets have been tested to 50 lbs and found tight.

The compressor cylinders (2 stage) and their waterjackets have been tested: H. P. cyl. to 60 Atm., L. P. cyl. to 16 Atm., or twice the g pressures, and waterjackets to 50 lbs and all found tight.

The starting air receiver, of low tensile S. M. S. plates, lapwelded by the ordinary 'water gas' method, is manufactured at the Avesta Steel have also manufactured and rolled the steel. Length of receiver 405 mm.; outside diam. 450 mm., platethickness 7 mm. Plan sub- approved (See Secretary's letter E. 8.3.16.). The steel material has been tested by the undersigned and found good, and the receiver been tested hydraulic pressure to 30 Atm. or twice the working pressure and found sound and tight. It has been stamped as follows:

Lloyd's Test 20 Atm. Working Pr. 15 Atm. No. 2095 Skm. 22.2.17 A

The injection air receiver, of solid drawn S. M. S. tube, is manufactured at the Avesta Steel Works from tube, manufactured at the Storfors is. Length of receiver 1300 mm., outside diam. 152 mm., platethickness 45 mm. Plan submitted and approved (See Secretary's letter E. The material has been tested by the undersigned and found good, and the receiver tested by me with hydraulic pressure to 60 Atm. or twice the pressure and found sound and tight. It has been stamped as follows:

Lloyd's Test 60 Atm. Working Pr. 30 Atm. No. 2096 Skm. 22.2.17 A

The motor has been tried in shop under full power in my presence and found to give an effect at normal load and 225 revolutions of H. P. It has also been tried with a continuous overload at 352 B. H. P. and found to work well.

The Society's Rules with regard to the details of construction, fitting of valves, lubrication, accessibility, etc., have been adhered to so farz as the motor itself. The remaining requirements will have to be attended to at the fitting of the motor in ship, if a classed vessel.

I am of opinion, that this motor is of superior material and workmanship, and as it has been designed and constructed under my special have respectfully to submit, that it will be eligible to be classed \*LMC, as soon as it has been fitted in a vessel to the satisfaction of the Society's Surveyors.

A. Bakson Engineer Surveyor to Lloyd's Register of Shipping.

The above engines have been fitted on board in a satisfactory manner. They were id under full power, in presence of the undersigned, at a trial trip on Lake Michigan on Sept. 1st 1917 and worked satisfactorily. at an average motor speed of 215 revs. per min. on Port & Starboard motors, the speed of the vessel was found to be 8.79 knots per hour. The average revolutions of the motors at all astern speed were 180 per min. The lowest motor speed for manoeuvring was 105/110 revs. per min. The mean draft during the trial trip was 8'-9". In the opinion of the undersigned, this vessel is eligible for the notation +L.M.C. in the Register Book, with date of entry 9.17.

H.R. McCalland, Chicago

A. Bakson Engineer Surveyor to Lloyd's Register of Shipping. Assisted by Mr. V. Schrödl.

H.R. McCalland, Chicago

The amount of Entry Fee ... £ \$5.00 : When applied for, 27.50 : Special ... 11 : 6 : 2 : 4-10-17 Chicago. Donkey Boiler Fee ... £ \$29.00 : Travelling Expenses (if any) £ \$29.00 :

Committee's Minute New York OCT 9 1917

Assigned See Chi. Rpt No. 18.

