

REPORT ON AUXILIARY INTERNAL COMBUSTION RECIPROCATING ENGINES

FOR CONSIDERATION BY THE COMMITTEE OF LLOYD'S REGISTER OF SHIPPING

Ship's Name (or contract No.) "AMUR" Port Yokohama

Gross tons _____ Date of completing rpt. 20-3-65 Rpt. No. 6004

Place of survey, if different from above Yokohama

No. of visits in shops 36 First date 15-5-64 Last date 20-2-65

Ship built by Hakodate Shipyard, Hakodate Yard No. A 356
Hakodate Dock Co., Ltd.

Aux. engines made by Mitsubishi Heavy Industries Ltd., Eng. No. D13019
Yokohama Shipyard & Engine Works, Eng. No. D13021 When Feb. 1965
Yokohama

Fee ¥185,250.- Expenses -

Description (including type name) 4SC, SA, trunk piston, supercharged by exhaust gas turbo charger with air cooler No. of sets 2
Yokohama M.A.N. G5V 24/30AL type generator engine

No. of cylinders, each engine	5	No. of exhaust gas driven blowers/superchargers, each engine	1	
Dia. of cylinders	240mm	Is welded construction used for	Bedplate? No	
Stroke	300mm		Entablature? No	
2 or 4 stroke cycle	4	Total internal volume of crankcase, if 20 cu.ft. or over	1.59m ³	
Approved service B.H.P., each engine	650 (metric)	Crankcase explosion relief devices	No. 3	
Corresponding R.P.M.	750		Total area	259.5cm ²
Corresponding M.I.P.	14.0kg/cm ²	Are flame guards or traps fitted to relief devices?	Yes	
Maximum cyl. pressure	90 kg/cm ²	Cooling medium for	Cylinders Fresh water	
Fuel	Die sel oil		Pistons	None
If cylinders in vertical or other special formation, state / shafts, each engine		No. of attached pumps	Fuel valves	
Angle of valve No. of crankshafts, each engine			F.W. COOLING 1	
Is engine of opposed piston type?	No	S.W. COOLING none		LUB. OIL one
No. and type of mechanically driven scavenge pumps/blowers, each engine		How is engine started? Compressed air		

SHAFTING

Is a damper or detuner fitted?	No	Webs	Dia. of journals	190mm
	Type		Breadth at mid-throw	268mm
No. of main bearings	6	Nominal shrinkage allowance if dowel pins are not fitted	Axial thickness	88mm
Are bearings of ball or roller type?	No		Flywheel	Diameter
Distance between inner edges of bearings in way of cranks	302mm	Weight		1500kg
Is crankshaft built, semi-built or solid?	Solid	Are balance weights fitted?	Yes	
Material of crankshaft	Forged steel	Total weight of balance weights	290 kg	
Minimum approved tensile strength	55 kg/mm ²	Radius of gyration	202mm	
Dia. of crankpins	190mm	Dia. of flywheel shaft		

NOTE:—The particulars in this report are to 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. Wording not applicable to be cancelled.

Has each engine been tested in the shop? **Yes** Was it tested with driven machinery attached? **Yes**
 How long at full power? **2 hrs** Was the governing tested and found satisfactory? **Yes**
DATE OF APPROVAL OF TORSIONAL VIBRATION CHARACTERISTICS
 (If 150 B.H.P. or over) Kobe **17-4-65** **616 ✓**

PARTICULARS OF DRIVEN MACHINERY

2-A.C. Generators 240KVA 400 Volt 346 Amp.
 2-D.C. Generators 195KW 200 Volt 975 Amp.
 1-Air compressor 1400m³/h 8kg/cm²

PORT & No. OF CERTIFICATES FOR STARTING AIR RECEIVERS

Hakodate Nos. HAR 16 & 17

ELECTRIC GENERATORS (Copies of certificates to be forwarded)

If 100 kW or over { Port **Kobe** If less than 100 kW, have makers' certificates been supplied? **-**
 No. of cert.

DECLARATION TO BE SIGNED BY ENGINE BUILDERS

To the best of our knowledge this machinery has been soundly constructed in conformity with the Rules, Regulations and requirements of Lloyd's Register of Shipping, and the foregoing particulars of auxiliary sets are correct.

(date) **22-6-1965** *[Signature]*
 MITSUBISHI HEAVY INDUSTRIES, LTD.
 YOKOHAMA SHIPYARD & ENGINE WORKS

DATES OF APPROVAL OF PLANS Crankshaft Kobe 8-8-64

<u>IDENTIFICATION MARKS ON SHAFTING</u>	D13019	D13021
	LLOYD'S YKA	LLOYD'S YKA
	No. Y-23611	No. Y-23440
	KN 25-6-64	TN 19-6-64
	RT 18-12-64	RT 18-12-64

A previous similar case was for (name or contract No.) Yard No. A355 of Hakodate Dock Co., Ltd., Hakodate Shipyard

Engine No. **D13017, D13018** Rpt. No. **5965**

The machinery reported above has been constructed under Special Survey in accordance with the Rules, approved plans and Secretary's letters. The materials and workmanship are good, the spare gear required by the Rules has been supplied and the machinery is eligible, in my opinion, to be fitted in a classed ship.

[Signature] R. Taneda
 Surveyor to Lloyd's Register of Shipping

DECLARATION TO BE COMPLETED AND SIGNED BY THE SURVEYOR AT THE PORT OF INSTALLATION

The above machinery has been fitted in "AMUR"
 at **Hakodate** in a proper manner and found satisfactory
 when tested on (date) **27th & 28th April 1965** under full working conditions.

[Signature]
 Surveyor to Lloyd's Register of Shipping

Date of Committee **FRIDAY - 1 OCT 1965**

Minute **See Rpt. 1.**

H. Terashima

Note.—Where existing machinery is submitted for classification, the circumstances are to be explained as fully as possible, and the recommendation should be suitably amended.

