

Ship's Name \_\_\_\_\_ Port **Yokohama**

Gross tons \_\_\_\_\_ Date of completing rpt. \_\_\_\_\_ Rpt. No. **6469**

Place of survey, if different from above **Tokyo**

No. of visits in shops **4** First date **20-10-65** Last date **11-11-65**

Ship built by **Yokohama Yacht Co., Ltd.** Yard No. **S.535-A**

Gearing made by **Tokyo Boat Inc.** Gear No. \_\_\_\_\_ Year \_\_\_\_\_

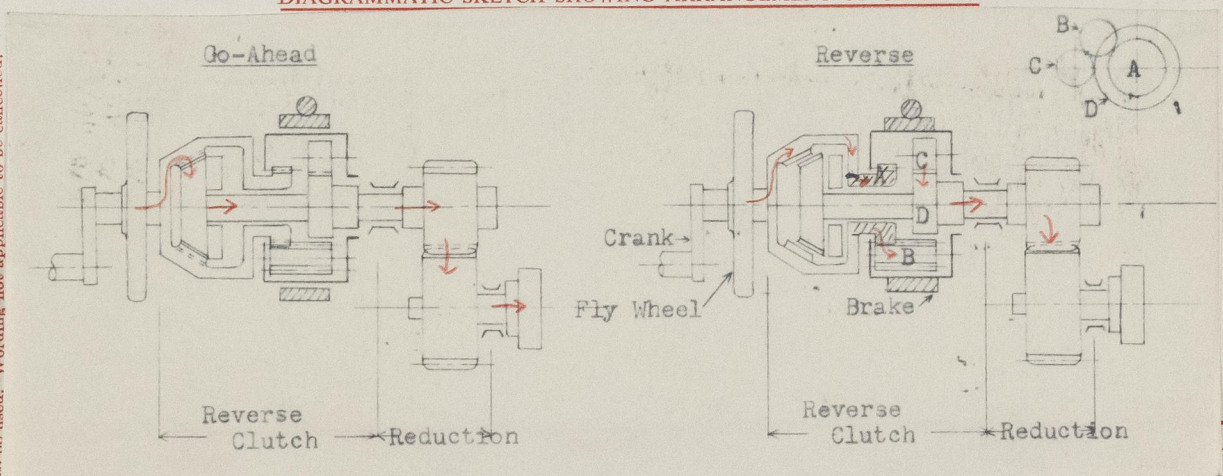
Fee **¥5250.-** Expenses **-**

Description of gearing, including reversing arrangements and clutches, if any, and No. of sets. State if ball or roller bearings

Single reduction gearing, oil clutch reversing gear  
Both ball & roller bearing

Type of engine with which gearing is to be used	<b>4 stroke trunk piston engine</b>	Helix angle	Primary <b>Double helical 22.5°</b>
State if for Class 1 or 2 ice strengthening	<b>-</b>	Secondary	
If single helical, state type and position of gear thrust bearing	<b>-</b>	Type of tooth form	<b>Involute</b>
		Approved max. total S.H.P. each set	<b>90</b>
		Corresponding R.P.M. of main wheel	<b>1150</b>

## DIAGRAMMATIC SKETCH SHOWING ARRANGEMENT OF GEARING



Max. S.H.P. to be delivered to primary pinions	<b>90</b>				
Corresponding R.P.M.	<b>2300</b>				
Dia. of pitch circle	<b>88 mm</b>				
No. of teeth	<b>22</b>				
Total width of face parallel to axis	<b>65 mm</b>				
Width of gap	<b>0</b>				
Dia. of shaft at bearings	<b>60 mm</b>				
No. of bearings	<b>2</b>				
Span between inner edges of bearings	<b>84 mm</b>				
Min. approved tensile strength of material	<b>85 kg/mm<sup>2</sup></b>				



	PRIMARY			SECONDARY		
	H.P.	M.P.	L.P.	H.P.	M.P.	L.P.
<u>QUILL SHAFTS</u>						
Diameter						
Min. approved tensile strength						
<u>FLEXIBLE COUPLINGS</u>						
Type of coupling						
Material, driving member						
Min. tensile strength						
Material, driven member						
Min. tensile strength						

Do couplings permit axial float of pinions ?

Have floating parts of flexible couplings been dynamically balanced ?

Have primary pinions with half-couplings been dynamically balanced ?

Have secondary pinions been dynamically or statically balanced ?

WHEELS	PRIMARY			MAIN
	H.P.	M.P.	L.P.	
Dia. of pitch circle	140 mm			
No. of teeth	35			
Rim material minimum approved tensile strength	85 kg/mm <sup>2</sup>			
Dia. of shaft at bearings	60 mm			
Dia. of shaft adjacent to thrust collar				
Min. approved tensile strength	85 kg/mm <sup>2</sup>			

Have wheels been statically or dynamically balanced ? (State which)

-

What post-hobbing process was applied ?

Lapping

Are bodies of cast or welded construction ?

forged

How are bodies connected to shafts ?

force fit

Machine used for finishing process

Makers' name

Lapping Machine  
Okamoto in Japan

Material of bodies

Serial No.

Are rims shrunk, bolted or welded to bodies ?

-

If teeth are surface hardened state method

Case hardened with liquid and temper, and annealing

If shrunk, has the shrinkage allowance been checked and found as approved ?

-

No. and diameter of radial or axial dowels fitted

-

Which gears were cut under conditions of temperature control ?

-

How were teeth cut ?

If hobbed, state for hobbing machine

Makers' name  
Sunderland  
Karatsu in  
Japan

Serial No.

Is gearcase of cast or welded construction ?

Cast

If welded, has it been stress-relieved ?

-

Have trammels or other means been supplied for verifying that gearcase is free from distortion when secured in ship ?

Has gearing been run light/loaded in the shop and the tooth contact found satisfactory ? (State maximum R.P.M. reached)

What is the backlash ? (state whether measured circumferentially or normal to the teeth and if in no-clearance bearings)

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Foundation  
Surveyor to Lloyd's Register of Shipping



Ship's Name

Port YokohamaRpt. No. 6469

If undulation records were taken, state maximum height from crest to trough and wave length and type of instrument used.

Pinions

Not measured

Wheels

-

If maximum adjacent and accumulated pitch errors normal to the teeth were measured, give particulars

Pinions

Not measured

Wheels

DECLARATION TO BE SIGNED BY GEAR MAKERS

To the best of our knowledge this reduction gearing has been soundly constructed in conformity with the Rules, Regulations and requirements of Lloyd's Register of Shipping, and the foregoing particulars (as shown on Sheets 1 & 2) of reduction gearing are correct.

(date) 2-3-66

(signature)

Factory Manager  
W. L. L.A previous similar case  
was for (name)

Gear No.

Port and Rpt. No.

DATES OF APPROVAL  
OF PLANS26-10-65IDENTIFICATION MARKS. (Copies of certificates to be forwarded)

(continued overleaf)

Primary pinions

KM

Primary quill shafts

Secondary pinions

Secondary quill shafts

Flexible couplings

Primary wheel rims

Primary wheel shafts



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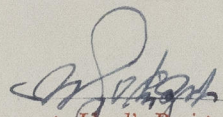
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IDENTIFICATION MARKS (continued)

Main wheel <del>rim</del>	KM	Integral with rim
Main wheel shaft	KM	

- \* The reduction gearing reported above has been built 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 gearing is eligible, in my opinion, to be fitted in a classed ship.

  
Surveyor to Lloyd's Register of Shipping

- \* When gearing is made at a port other than the port of installation, the Surveyors at the former should send this report to Head Office as soon as possible after completion of the gearing for checking, after which it will be sent to the Surveyors at the port of installation who should attach it to their First Entry report on the machinery after completing and signing the Declaration below.

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

The above reduction gearing has been fitted on board the MS "CUST-1"  
at Yokohama in a fit and proper manner and found  
satisfactory when tested on (date) 28-2-66 under full-power conditions for  $1\frac{1}{2}$  hours  
and when examined subsequently

  
H. Terashima  
Surveyor to Lloyd's Register of Shipping

Date of Committee

Minute



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