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SPECIFICATIONS OF CONSTRUCTION FOR A STEEL SKIPJACK POLE AND LINE FISHING VESSEL FOR PAPUA NEW GUINEA

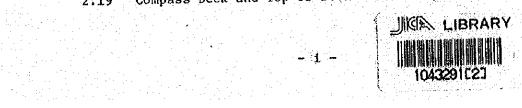
MARCH, 1977



JAPAN INTERNATIONAL COOPERATION AGENCY

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|---|--|
|   | CHAPTER 1. GENERAL   |
|   | from sumskeines, of allow built for a solar of   |
|   | Remaining and anonogram of the same both a second contract of  |
| The vessel to be of the   | steel skipjack pole and line fishing vessel, and   |
| to served in area of 200  | sea miles from the coast of PAPUA NEW GUINEA.  |
| 1.2 Rules and Regulations, S  | upervision   |
| 1, Rules and Regulation   | s to be applied hand in the size value is  |
| The Japanese Ships S  | afety Rules and other related Rules and Regulations  |
|   | ฉรัฐรัฐวิวิธีอิยัยหนึ่ง ผู้สินที่ใช้อิสุธส์ (อยู่) จริ (ออีตอิสต นที่ พิศ  |
| 2. Supervision  | ing box equilibria duralit seguriancia i uvo tach  |
| The vessel to be sup  | ervised by the Supervisors (hereinafter called   |
| "supervisors") nomin  | ated by the Owners.  |
| 1.2 Versella Tuno   |  |
| The vessel to be of sing  | le decker with sunken forecastle, raised quarter   |
| 이는 이는 것은 사용 것은 가슴을 가슴을 가슴을 가슴다.<br>같은 것은 것은 것은 것은 것은 것을 알았는 것을 같은 것을 알았는 것을 알았는 것을 알았는 것을 알았는 것을 알았는 것을 알았는 것을  | 이 사람이 해외 가슴을 가져 있었다. 이 것 같아요. 이 가지 않는 것이 같은 것이 있는 것이 가지 않는 것이 같이 있는 것이 같이 있는 것이 같이 있는 것이 없다. 이 가지 않는 것이 있는 것이 없는 것이 없는 것이 없는 것이 없는 것이 없는 것이 없는 것이 없다. 이 가지 않는 것이 없는 것이 없다. 이 가지 않는 것이 없는 것이 없 않는 것이 없는 것이 없 않는 것이 없는 것이 않이   |
| 1.4 Stability, etc.   |  |
| 이 가지 않는 것은 것이 같은 것이 많아들 것 같아요. 이 나는 것이 같아요.   | ty and seaworthiness.  |
| 2. To have good maneuva   |  |
| 计计时时间 山口 人名特雷 准确定于你的变形的变形的变形的   | ire impact of waves, and consider to keep good   |
| 计算法 化二乙基乙基 化乙基乙基 化乙基乙基乙基乙基乙基乙基乙基乙基乙基乙基乙基乙基乙基乙基  | ent vibration, wetness and heat.   |
| 그는 그는 것은 것을 하는 것을 수 있는 것 같이 않는 것 않는 것 같이 않는 것 같이 않는 것 않는 것 않는 것 않는 것 않는 것 않는 것 않는<br>것 같이 않는 것 같이 않는 것 않는 | ice ballast to adjust stability, trim and heel of  |
| the vessel.   | 사실 등 1999년 1월 1999년 1<br>1월 1999년 1월 1  |
| 1.5 Principal Particulars   |  |
| 1, Principal Dimensions   |  |
| Length (registered)   | 27.50 m  |
| Breadth (moulded)   | general an status <b>( 1999) se s</b> tatus esperal esperal esperal de la status de la seconda de la seconda de la seconda<br>El 1987 - El 199 <b>5, 80, m</b> a esperal de la seconda de la   |
| Depth (moulded)   | 2.70 m state states in the states of the sta           |
| 2. Gross Tonnage  | about 100 tóns   |
|   | output of not less than 550 ps 1 set   |
|   | engine, with a fixed pitch propeller.  |
| Medium sheer greet  | engline, when a provide the set of   |
| (i) A start for a second data for the spectra for the second s   | about 49 m <sup>3</sup> (bale)   |
| Fish hold (total)   | three holds) "26 m <sup>3</sup> (")  |
| Centerline hold (1  | three holds) and 20 m <sup>3</sup> ("Has) a factor and a state of the state of t |
|   |  |
| Fuel oil tank   | about 39 m <sup>3</sup> . The second sec |
| Fresh water tank  | u on seue aprilee voor al terretorij (j. 1990).<br>19 julie - Angele Angele and angele and angele and angele angele angele angele angele angele angele angele ange   |
| 5. Speed  |  |
|   | speed about 11 knots   |
| Designed trial max.   |  |
| Designed trial max.<br>6. Duration of fishing   | operation about 7 days   |
| Designed trial max.<br>6. Duration of fishing   | operation about 7 days<br>24 persons   |

## 1.6 Others

 The vessel to be built in accordance with this Specifications. and the attached General Arrangement and Midship Section.

日日日中心市

Details to be decided by mutual consent between the supervisors and the builder.

SNEXTES.

 Necessary matters for the purpose of the vessel to be provided, even : if they are not mentioned in this Specifications.
 Workmanship for the vessel to be of good, and easy repairing and

maintenance to be taken into consoderation.

4. Approval drawings, final drawings and instruction books to be in

Every sign and mark inboard to be in English.

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(3) An example in the second statement of the second statement of the second statement is a second statement for a second statement fo

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 Book désett. for a contribution to a solution of

- 2 -

# CHAPTER 2, HULL PART

1. Materials of hull construction to be complied with the authorized Standard, Scantlings of hull structual members to be in accordance with the requirements of the Rules and Regulations stated in 1.2 of CHAPTER 1., and attached Midship Section Plan. The efforts to make weight down and to make center of gravity down, the attention to be given to keep good succession in strength between each member and to prevent hull from vibration.

2. Hull construction to be as follows.

(1) Keel to be flat plate keel and false keel to be settled in under part.

(2) Stem to be of steel, and above part to be of fashion plate. (3) For bottom part of bow, considering about panting, and for stern

part, preventing vibration, suitable reinforcement to be provided.

(4) Rudder to be of stream line formed double steel plated balanced

(5) At the place where anchor and chains touch, hull plate to be thickened or suitable reinforcement to be provided.

(6) All decks to be of water tight steel plated construction.

Deck covering of exposed deck to be as follows.

Upper deck : wooden plank, thickness of not less than 65 mm

的一次的现在分词

Sunken forecestle deck : do.

Raised guarter deck i do. Top of deck house : wooden plank, thickness of not less than 50 mm

Compass deck : latex-deck composition, thickness of not-less than 8 mm

3. Zinc anodes for cathodic protection to be fitted on the shell plate around propeller, bilgekeel, stern frame, rudder and sea chest. Quantity and place to be decided by supervisors.

2.2 Tanks again to be provided with suitable swash plate and manhole, and

appointed tanks to be provided with piping, considering adjustment of

trimming and heeling, (2. Fresh)water tank to be similar to oil tanks in construction.

3. Ballast water tank to be able to be filled with sea water.
2.3. Stores to be installed at the bow, and provided with

- 3 -

removable wooden boards, shelves, etc.

The steel water tight hatch to be fitted on the sunken forecastle deck performance and and performant and to be provided with lock. 1.1.1.1、1.5.1.1、1.1、1.5.1.1、1.5.1、1.5.1、1.5.1、1.5.1、1.5.1、1.5.1、1.5.1、1.5.1、1.5.1、1.5.1、1.5.1、1.5.1、1.5.1、1.5.1

2. Aft Store

The aft store to be installed in the stern part under upper deck and provided with removable wooden boards, shelves, etc. Provision Store

The provision stores to be installed in the stern part under upper deck, and to be equipped with shelves, etc. according to the supervisors' instruction.

The inner surfaces of the stores are to be of galvanized steel sheet. Door locks to be fitted at the stores.

2.4 Anchoring Gear and Mooring Equipment

Anchors to be weighed by the capstan (1.5t x 13m/min., 3.7kw electric 1. motor driven) on the sunken forecastle deck through the tripple rollers (gun metal bushed) and fairleaders.

Anchor lashing device to be fitted on the sunken forecastle deck.

Mooring to be done by the above mentioned capstan and the stern 2. capstan (1.5t x 13m/min., 3.7kw electric motor driven). The following mooring equipments to be provided. One bitt on sunken forecastle deck, Each one bitt (port & starboard) on fore and after bulwark, Tripple rollers (gun metal bushed), Ring 人名马马克尔 医白细胞 . Antolem

plates, Cleats, etc. 1100,000

2.5 Cargo Gear

The rigging of steel wire to be fitted between the fore mast and the front of wheel house, and cargo blocks and wires to be provided above the hatches of centerline holds. don a la practició

One 0.5t electric motor driven hoist to be installed on the top of companion: One derrick boom (0.5t) to be fitted on starboard of deck house. Necessary fittings, such as goose neck bracket, topping bracket, blocks, wires, cleats, etc. to be provided. This boom to be employed for handling

of dinghy and others. 0.5t electric hoist on the top of companion or set capstan on the sunken forecastle deck to be used for cargo handling of the 0.5t boom, and blocks and other necessary fittings to be provided.

a part por a provider o Steering Gear 2.6

The steering apparatus to be a electro-hydraulic gear (1.5t+m x 1.5kw) and also emergency hand operating apparatus to be provided as a final of The steering stands set in with magnetic compass pilot & portable remote: control system to be installed in the wheel house and on the compass deck. These to be exchanged at each other by a hydraulic valve.

- 4 --

| 2.7 Lad                  | der and Handra   | ai1   |   | ning an an the state<br>The state state state  |  |             |
|--------------------------|--|---|---|--|--|-------------|
|                          | Ladder   |   |   |  |  |             |
|                          | a ser a s  | of galvani;   | ed steel or woo   | d. The woode   | n ladders to l   | be          |
|                          | with metal! f:   | 1 - 1 - 1 - 1 1 1   | 이 가슴을 많은 유민은 가슴에 가지 않는다.<br>같은 것이 같은 것이 있는 것이 없다. 것이 같은 것이 있는 것이 없는 것이 없는 것이 있는 것이 없는 것이 없는 것이 없는 것이 있는 |  |  |             |
|                          |  |   | ed as possible.   | and<br>Articles and Articles (1994)<br>Articles and Articles (1994)  |  | 21          |
| 2.                       | Handra11   |   |   | Hall of Helling  | a gleger an leasan   | et N        |
|                          | at a second s  | side to be  | of galvanized s   | teel, and one  | s inside to be   | of          |
|                          | and the second |   | or of stainless   |  |  |             |
| 3                        |  |   | ny horrestration  |  |  |             |
| ول ال                    | e data da sere a ser   | to be fitted  | l at the outside  | walls of dec   | k house, the   |             |
|                          | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  |   | se and other pla  | and the second second second   |  |             |
|                          | A CONTRACTOR OF  |   | vanized steel pi  | and the second | side of room a   | and         |
| *,<br>•                  | Maria di Santa di San  | <ul> <li>A second sec<br/>second second sec</li></ul> | el pipe or stal   |  |  |             |
|                          | of room.   |   |   |  |  |             |
| 2.8 Mas                  | t and Standing   | Riggings  | a na sha na shekara   | aran baar aha  | an da  |             |
| 1.                       |  |   | tripod type.  | n dae betweenen<br>De  |  |             |
| 2.                       | Span stays to  | be install  | led between the   | masts, and tw  | o flag lines t   | :0          |
|                          | be fitted on   | the fore su   | ban stay.   | 提供了自己的 <b>和</b> 的  | auto (M)   | i           |
| 3.                       | Fore mast to   | be fitted w   | with fore stay.   | tappa en l'hand de la de   | prest 1  | :           |
| •••xq<br><b>4</b> •∞     | The standing   | riggings to   | be covered with   | h vinyl pipe   | and to be fitt   | ed          |
| () (周秋)(1)<br>(1)<br>(1) | with rigging   | screw.  | ant là districtas   | velar ivezan del Vel<br>T  | dy the   | 1<br>2      |
| 5.                       | The following  | g principal   | equipments to b   | e fitted on e  | ach mast.  |             |
|                          | <b></b>  |   | Г   | T  | <u>in this is a second se</u> | 1           |
| 21 A 1                   | Fore mast  | Fishing   | Mast light  | Working<br>light (2)   | Anchor<br>light  |             |
|                          |  | light   | Loon entoring   | Light (2)  |  | -1:         |
| tiga da                  | la viegaga (rea).<br>Dodon mont  | Radar   | Loop antenna<br>for   | Motor  | Vane-type  |             |
|                          | Radar mast   | scanner   | direction   | siren  | anemometer   |             |
| ¢                        |  | <u>as an </u>   | finder  | ÷  |  | <b>-</b> ." |
|                          | After mast   | Stern<br>light  | Working<br>light  | <ul> <li>Automatical Automatical Systems</li> </ul>  | ्रिये हे अन्तर वि  |             |
| · · · ·                  |  |   | e javas – na tali e   | and Statistics (1985)  | - Angla - Angla  | J           |
| 6.                       | Flag staffs t  | o be instal   | lled at the bow   | and stern, an  | d fitted with  |             |
|                          | blocks and wi  | res.  |   | erthing a section.   | $\{f_{1,2},f_{1,2},f_{2,3},f_{3,3},f_{$      | έt. S       |
| 2.9 Awn                  | ing and Cover  |   | day, an harasa  |  |  |             |
| 1.                       | Awning   | an de la companya   | ana an   |  | and the first  |             |
| 1 > 00                   | The awning to  | be of synt  | hetic fiber, an   | d to be insta  | lled over the  |             |
|                          | fore & after   | parts of th   | ie upper deck, e  | nd the compas  | s deck.  |             |
| 2010 (4                  | The awnings t  | o be consis   | st of center-rid  | ge, stanchion  | , reach rope,  |             |

the awnings to be consist or center-ringe, standard, reach rope, etc.

The covers to be of synthetic fiber and to be fitted at the followings.

| . 1  | Hatch             | Vent11ator       | Main engine            | Search<br>11ght | Motor<br>siren                                      | A.S.<br>P. P. K. |
|------|-------------------|------------------|------------------------|-----------------|---|------------------|
| 4 Q. | Deck<br>machiner- | Working<br>light | Others<br>1f necessary |                 |   |                  |
|      | 1es               |                  |                        |                 | s i transformation († 1920)<br>General Statestander |                  |

2.10 Life Saving Appliances and Dinghy

- 1. Life Saving Appliances
  - (1) As the life saving appliances, provide the following items.
    - o Inflatable life raft, with FRP container, for 25 persons, 1 set

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25

2

AND THE FAIL MARKED BUT LEASE SEAL B. R. R.

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and the shall be there in the

energy of the second of the last second second

- in the **Ko'type** in the second s
  - Inflatable life jacket 0
  - Ring life buoy **O**.
  - "SOS" Auto-alarm (2182 KHz, output 5 W) 0
  - o Self igniting light
  - Self activating smoke signal 0
  - Rocket 0
  - o Parachute signal
- and the second states and a second and (2) The inflatable life rafts to be installed, on the top of deck house, and dropping platforms, releases, etc. to be fitted.
- (3) Other life saving equipments except the above said to be provided in accordance with the Japanese Special Rules for Fishing
  - Boats CLASS II.
- 2. Dinghy

A dinghy to be about 3.5 m length rubber boat with 9 PS outboard engine, and stowed instructed place on board. in an Éirice Binding appliance, handling appliances and other necessary fittings n han di ang barang to be provided.

On handling appliances, refer to "2.5 Cargo Gear". The following equipments to be provided. One foot stepping type air pump

One pair of loars shaw so at an inter the second part of lade being the

2.11 Fire Extinguishing Appliances

Fire hydrant to be installed at following places, and each one hose 1. and one nozzle to be attached to each hydrant.

Engine room opening x 1, Engine room x 1, Near the companion x 1, No. 2 crew space x.1, Mess room x 1 first adaptive solution of the state

Portable fire extinguisher (powder type x 3, liquide type x 6) to be 2. provided.

Other fire extinguishing appliances to be provided in accordance 3. with the Japanese Special Rules for Fishing Boats CLASS II. i san si si s

- 6 --

4. An international shore connection for fire extinguishing (1960, angen solas)sto be installed. Sas three loss file frances of the

2.12 Warlous Piping and Learn and the second of the second second of the second

yarlous pipings to be installed in accordance with the followings.

"Fresh water pipe, seatwater pipe, oil pipe, air pipe, filling pipe and sounding pipe on the decks are to be fitted with name plates in

- Figlish and to be arranged for convenience of installation, inspection and repairs and in growing on banade in the state of a set
- Pipings to be fixed by steel bands, and fitted with covers at the the and a search explored and a solit of the necessary parts.
  - All pipes except oil pipe to be of galvanized steel pipe.

1 . Bilge pipe the factor and any approved and a second second second second second second second second second

(1) The following spaces bilge to be discharged by the motor driven pump and/or hand bilge pump. 1.19

| e e a A   | TRACES ( Second Second Second Second   | Place Bilge pump      |                | and a set as        |
|---|--|-----------------------|----------------|---------------------|
|   | e se al presenta de la contra de | Motor                 | Hand           | Remark              |
| रहान प  | Bo'sn store  |                       | 0              |                     |
| н.<br>21 г.   | No. 1 crew space   | 0                     | 0              |                     |
|   | Fish hold  | 0                     | 0              |                     |
|   | Bottom space under fish hold   | 0                     | 0              |                     |
| ан (С. 1997)<br>1997 - С. 1997 - С. 1<br>1997 - С. 1997 - С. 19 | Engine room  | •                     | 0              |                     |
|   | Fore peak tank   | 0                     |                |                     |
|   | After peak tank  | €, guasata su         | อุโปรี 1 เรอมี | at bulkhead         |
|   | Steering gear room   |                       | 0              | do.                 |
| na seuse <sup>a</sup> n<br>Norsean  | Aft store  | nastin<br>Elizationes | <b>O</b>       | including provision |

searched has been a stranger and a second press of a description of the second for the second for the second for

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(2) Two (2) hand pumps to be provided.

(3) Rose boxes to be installed at the end of bilge pipes.

2. Wash deck pipe

الأحد الإلجاجة الموكولين والتعلي

- Wash deck pipe to be arranged along the ship's side of the (1) upper and sunken forecastle deck from a motor driven general s af tight of the second service & fire extinguishing pump. Hose coupling and stop as each and valves to be fitted at suitable positions.
  - (2) Three (3) rubber hoses (each 8 m length) with nozzle for deck super property washing to be provided. The same super state provide the

general and date of the structure of the second second second second second second second second second second

- 3. Fresh water pipe
  - (1) Fresh water line to be arranged to exchange fresh water among fresh water tanks, by motor driven fresh water service pump.

- (2) Fresh water line to be arranged to supply fresh water from each
- fresh water tank to following places by motor driven fresh
  - water service pump (automatic start and stop, home pump).
  - Sink in galley, Wash basin in No. 1 W. C. & No. 2 W. C., Shower, Wash basin in mess room and engine room.
    - (3) Fresh water line to be arranged to supply fresh water made by distilling plant to fresh water tank.
    - (4) Besides above mentioned, a hand fresh water pump to be provided to supply fresh water to the sink of the galley from fresh water tank.
  - 4. Sanitary pipe
    - Pipe line to be arranged to supply sanitary water to following place by electric motor driven sanitary pump (continuous running).
    - Sink in galley, No. 1 & No. 2 W. C. (for stool and floor cleaning), Shower.
    - Also connecting piping between wash deck pipe line and sanitary pipe line to be provided.
    - Besides above mentioned, a hand sea water pump to be provided to supply sea water to the sink of the galley from bottom.
  - 5. Scupper pipe

Scupper pipe to be thick steel pipe and of larger diameter than standard.

The scupper pipes to be arranged at the following spaces, Sunken forecastle deck, Upper deck, Compass deck, Top of deck house, Wheel house, Companion, Galley, Water closet, Raised quarter deck and other spaces, if necessary.

Rose plates to be provided at the deck part of scupper pipe. Also to be provided blockages for soil and waste water on deck not to flow outboard.

6. Sewage pipe

Sewage pipes to be arranged to discharge soil water outboard from the stools in water closets and sink in galley, and non-return values to be fitted at shell outlets.

7. Other pipe

Sounding pipe, air pipe, oil filling pipe, water filling pipe, etc. to be provided for oil tank, fresh water tank, fish hold, etc., where necessary.

8. 0il pipe

Refer to Machinery Part.

Freeing port 9.

Sultable number of freeing ports to be installed on bulwark. (T)The freeing ports to be constructed for waves not to flow inboard directly, and to be provided blockage for soil and waste water on deck not to flow outboard.

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2.13 Communications and Signalling

1. Voice tube

Voice tubes to be installed at the following places.

Near magnetic compass on compass deck Wheel house < - Engine room

The voice tube between wheel house and engine room to be fitted with whistles, and the tube in wheel house to be of non-magnetic material.

enage 2. Buzzer ergen firste alle aget

Buzzers (ordinary or emergency use) to be fitted at the following

places. 1.15

No. 1 crew space (answer type) No. 2 crew space ( tan satit y Sis. No. 3 crew space (

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Wheel house Mess room · · · · (

고 승규는 가 가 가 가 다.

( Engine room 网络小说是小说的 化十分分子

galdada bar da lat 3. Motor siren

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A motor siren to be of water proof type and 400W output. . . .

n en sent sont sont sont Telegraph 4.

Telegraphs to be of elect. type, and the telegraph in wheel house to be of console mounting type and in engine room to be of wall-setting oo jag

type.

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## Lighting and Ventilation 2.14

目前1年1985日 연습이 Lighting to be installed as follows. 1. The second wat have been at the

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| Designation                                 | Туре   | Material                    | Place  |
|---|--|-----------------------------|--|
| Square<br>window                            | Lifting type,<br>reinforced<br>glass                                     | Light metal.<br>alloy frame | Front of wheel house<br>(with skifting board) (7)  |
|   | N  |                             | .Side of wheel house (2)   |
| Scuttle                                     | Opening type<br>with blind<br>lid<br>(* marked:<br>without blind<br>lid) |                             | Companion, No. 2 Crew space,<br>No. 3 crew space, Mess room,<br>Galley, Wheel house*,<br>Captain room* |
| g Arrong Secure - Se<br>Harrong Secure - Se | Fixed type<br>(with blind<br>lid)  | trains in a condi           | No. 1.W. C. Oriov<br>Door of No. 2 W. C.   |
| Skylight                                    | Opening type<br>(water tight)  | Steel                       | No. 1 crew space (or emergency hatch), Engine room, Galley   |

(1) Eaves to be installed on the upper part of square window and

opening type scuttle.

One of the square windows in front of wheel house is to be (2) 新知道的 计上分对任何 of fixed type, and fitted with one motor driven clear view screen. Product of Section (1997)

(3) The skylights to be operated at inside and outside.

The skylight in No. 1 crew space to be fitted with a light 的建筑的现在分词 化合物合金 网络白色 intercepting cover. Mgn også 400

2.

Mechanical ventilation Motor driven axial blowers to be installed at the following places.

| Place       | Type of motor   | Output of motor | Quantity                  |
|-------------|-----------------|-----------------|---------------------------|
|             | Reversible type | 2.2 KW          | 1                         |
| Engine room | Keversiole Lype | 1.5 KW          | 1                         |
| Galley      | τ <b>έ</b>      | 0.4 KW          | $\mathbf{I}_{\mathbf{r}}$ |

Ducts to be made of galvanized steel plate, and at the neces-(1) sary place damper and pankalouvers to be fitted. Inlets and outlets for engine room to be fitted with steel net. The air inlets of ventilator to be provided with closing (2) appliance for emergency, and emergency stopper to be installed in wheel house.

33: Whatural ventilation and is of an instally setuciation for (C). Mush-room, goose-neck ventilators or wall ventilator to be installed stathe following places. Towardshood 24819

| Place With t | Quantity | Wilson Mace                | Quantity |
|--------------|----------|----------------------------|----------|
| Wheel house  | 1        | Store                      | each 1   |
| Mess room    | 1        | Galley                     | 1        |
| Engine room  | 1        | Air conditioner            | each 1   |
| W. C.        | each 1   | Battery room               |          |
| Crew space   | each 1   | Other spaces, if necessary |          |

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bela 54. Air Conditioning a source gui means buy in stand withe to but our (1) Two air conditioning plant (automatic) with refrigerant of R-22 (CHCLF2), to be installed, and to supply cooled air to the within St. specified spaces and to keep the described temperature and humidity Product souther during a first states at the (2) The condition of temperature and humidity to be following. Beach to (standing and over busy which parallel in , and again dates).

| i di |                                   | Condition | Air change                                     |
|--|-----------------------------------|-----------|--|
|  | op secondos no                    |           | e astrik wier werschaft                        |
|  | Dry<br><sup>100</sup> temperature | 35°C 30°C | 12 times/hour, fresh air<br>to be more than 40 |
|  | Humidity                          | 70 % 50 % | percent of total air                           |

- Auropatic real of a character of Jean und THEORY (3) The following spaces to be air conditioned. But \* marked spaces to be of spot cooling system, and to be exempted from above mentioned condition. SHE THE OTHER OUTLINES DOLLARS TH
- $1 \ge 1$

| Plant       | revenues Space we do she us volation                  |
|-------------|---|
| No. 1 plant | No. 1 crew space of an income of the states           |
| No. 2 planț | No. 2 & No. 3 crew space, Captain room,<br>Mess room* |

11 Ducts to be of galvanized steel plates, and to be covered with (4) insulation. At the suitable place, drain hole, damper and grille

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to be fitted.

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| Plant  | Compressor   | Constant Fan Bare Ander   |
|--|--|---|
| No. 1 plant  | 5,600 Kcal/hr x 1.5 KW   | 20 m <sup>3</sup> /min x 0.05 KW  |
| No, 2 plant  | 15,000 Kcal/hr x 3.75 KW   | 45 m <sup>3</sup> /min x 0.6 KW   |
| spare part<br>(7) Emergency<br>to be inst<br>Nautical and Measu<br>The following naut<br>necessary stands,<br>1.: Magnetic compa | ical and measuring instrum<br>wiring, accessories and space<br>uss (card dia, 150 mm table | thers necessary.<br>of air conditioning plan<br>nents to be provided, and<br>pares to be provided.  |
| With adjustabl   | e tools, azimuth mirror, a   | zimuth circle,  |
| azimuth rod.   | en de<br>Estadou de completadou en   | net na salahan na daga dakatan<br>Kirani dipadak dati (C)   |
| (each one set,   | in wheel house and on con  | npass deck)   |
| 2. Electric rudde  | r angle indicator  | <b>1</b> set  |
| Indicator to b   | e fitted in wheel house ar   | id on compass deck.   |
| 3. Radar (table t  |  | <b>1 set</b>  |
| Braun tube dia   | . of 7 inches, peak power  | of not less than  |
| 10 KW, range o   | f not less than 30 sea mil   | €S. Constant of the second se |
| 4. Automatic radi  | o direction finder (automa   | itic direct   |
| less transition and the  | read in  | ng type)  |
| Able to spot r   | eceive of not less than 20   | ) waves,  |
| direction find   | ing range 400 KHz - 9 MHz.   | eller in the state of several and and and   |
| 5. Vertical type   | fish finder (table type)   | l set.  |
| Frequency 50 K   | Hz - 200 KHz, two wave typ   | e, depth  |
|  | 0 m, two indicators (line  |   |
|  |  |   |
| 6. Sonar type fis  |  | 1 set   |
|  | t 75 KHz, range about 0 -  | tana dia 1990. Amin'ny kaodim-paositra dia mampika mpikambana mpikambana mpikambana mpikambana mpikambana mpika<br>Ny faritr'ora  |
|  | ecting angle about 360°, s   | 승규는 승규는 것은 것 같은 것 같아요. 가지 않는 것 같아요.   |
| about 180°.  |  |   |
| <ol> <li>OMEGA receiver</li> </ol>   |  | 1 set   |
| 2 lop type.  |  |   |
|  |  |   |
| 8. Electric anemor   | nator (vano tuno)  | l set   |

10. Electric thermometer

1

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Switching over reading type, for fish hold and cooling plant, with two indicators.

Binocular (8 cm x 15, with stand) 11.

2.16 Radio Equipment

The following radio equipment and public addressor to be provided, and also necessary spare parts, inventory, tools and documents to be provided. SSB system radio telephone apparatus 1. An in a ghraith na bh i bhe Anna ba dheann i bhean

| 2,8 4            | Name                             | traismitter & receiver de dauty no des   |
|------------------|----------------------------------|--|
|                  | Quantity                         | en en la servicie de la companie de contrate de la contrate de la contrate de la contrate de la contrate de la<br>Contrate de la contrate de la contrat |
| , or terminal re | Antenna power<br>output and type | $\frac{MHF}{HF}$ A3J50W, A3H12.5W  |
|                  | Frequency range                  | un un 2 MHz 🔊 8 MHz - deustation - editorial volgitario un   |
| wasself to re-   | No. of channel                   | strength Tx 10, Rx 10 and a strength almost  |
| Y magazine s     | Electric source                  | A.C. 110V, 60 Hz, D.C. 24V   |
|                  | Remarks                          | An plat Simplex Caster & Asta Bally and the second   |

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1. 2 .... Receiver addresser and the second as about the model of the second of the second of the second of the

| Name              | Receiver  |
|-------------------|---|
| Quantity          | the second states of the second press of the second                                   |
| Frequency range   | 535 KHz V 1605 KHz, 2.3 MHz V 20 MHz  |
| Type of reception | al Texestine at a A3 as granter free (1)  |
| Circuit system    | Sterneterodyne Style Style 13   |
| Electric source   | Anoral A.C. 110Vo the set of the set  |
| Remarks           | Transistor type, portable   |
|                   | Quantity<br>Frequency range<br>Type of reception<br>Circuit system<br>Electric source |

Savia3. Emergency automatic receiver 1 set  $f^{\pm}$ (2182 KHz, wall-hanging type)

(e) 1 set 4. Public, addressor

an (1) Main apparatus

output (no strain) : 30 W able for here circuit system : superhetrodyne system

frequency range : B.C. and short wave zone This to be coupled with receiver, monitor, cassette type trees no. Last, player, and emergency alarm.

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|      | (2) Speaker   |
|------|---|
|      | 30 W, water proof type trumpet 1  |
|      | (able to be turned in wheel house)                                      |
|      | 2 W, 6.5 inches, permanent  |
|      | (able to be forced, with volume adjustor)                               |
|      | (3) Microphone (hand type, with cord) 1                                 |
|      | On the front wall in wheel house, one                                   |
|      | microphone jack to be fitted.   |
|      | 5. Radio switchboard  |
|      | To be of dead front type, and to have branch of rectifier for B.K.      |
|      | electric source.  |
|      | 6. Antenna separating equipment 1                                       |
|      | 7. Antenna  |
|      | To be suitably provided for the above mentioned wireless equipments.    |
|      | 8. Electric source  |
|      | Each apparatus to be operated by inboard ordinary source in ordinary    |
|      | case, and S.S.B. transmitter & receiver, to be operated by emergency    |
|      | source (24 V x 200 AH, 1 set) in an emergency.                          |
| 2.17 | Fishing Gears   |
|      | The following fishing gears to be installed. The detail of gears, i.e., |
|      | size, installation, arrangement, etc. to be decided according to the    |
|      | supervisors instruction.  |
|      | Suitable reinforcement to be provided under fishing machineries.        |
|      | 1. Skipjack fishing gears   |
|      | (1) Sprinkling pipes to be installed on the fishing platform, and       |
|      | fitted with gun-metal sparkling nozzles.                                |
|      | The pipe to be provided with stop valves at an appropriate              |
|      | place. Angle and volume of sprinkling water to be adjusted at           |
|      | each nozzle. Pitch of nozzle to be 500 - 600 mm.                        |
|      | (2) As skipjack fishing equipment, temporary covers of steel wire       |
|      | net for the balt hold's hatches to be provided.                         |
|      | (3) Bait tubs, fishing pole places and other necessary equipments       |
|      | for fishing to be provided. Sea water to balt tubs to be                |
|      | supplied from wash deck pipe.   |
|      | (4) Fish suppressing boards & concrete blocks for shipjack fishing      |
|      | are to be provided.   |
|      | (5) One set of automatic pole fishing machine (2.2 KW electro-          |
|      | hydraulic driven, with one fishing pole) to be fitted on port-          |
|      | side. Two fishing poles (GRP) including working one to be               |
|      |   |

(6) Others Followings to be provided. (a) Fishing pole (GRP) 90 rods 1,600 pcs. (b) Hook 800 " (c) Artificial bait with hook 10 coils(d) Seizing wire (one coil : 200 m) 30 11 (e) Fishing line (Nylon-tex, one coil : 100 m) far tara Small size stick net fishing gears for fishing bait 2. Small size stick net fishing gears for skipjack fishing bait (1)to be provided. The stick net fishing winch to be of one set of four (4) drums (2)a de la winch and driven by electro-hydraulic system (electric motor 15 KW). Davits and other fittings for stick net fishing to be provided. (3) (4) Fishing lamp The following to be provided. 1.5 KW 2 sets (a) Under water lamp (incandescent) Render 1 (with slide regulator, 30 m electric cord, ree1, etc.) 1 set (b) Lamp above water (incandescent) 1 KW (with slide regulator, 30 m electric cord, reel, etc.) Fishing lamps to be controlled by the switch board on compass deck. المترجم والمنافي والمرجم (5) <u>Net</u> The following to be provided. 2 sets Net (length : 20 m, depth 23 m, with floating bamboo, sinker, rope, etc.) 2.18 Fish Hold 1. The fish hold to be refrigerated hold and to be divided nine compartments. Three centerline holds to be also used as bait holds. Caught fish to be stowed and preserved in the holds by cooled sea water. Hatches for centerline holds to be of square, and other hatches to be of circular type. Each hatches to be provided with insulated inner lids. (1) Refrigerated holds (9 holds) (a) Each hold to be refrigerated by hair pin type cooling pipe.

- 15 -

- (b) Cooled sea water to be circulated between each hold and sea water cooler by circulating pump, and necessary pipings to be provided.
- (c) Water in each hold to be discharged by bilge & circulation pump.
- (2) Centerline holds (3 holds)
  - To use these holds as bait holds, followings to be installed and provided.
  - (a) Sea water in these holds to be changed by overflow system. Fresh sea water to be charged by the circulating pumps for bait hold, and sea water in holds to be discharged through the overflow ports on hatch coamings to out board.
  - (b) Lighting appliance (with spare light and alarm) to be provided.
  - (c) Dead bait discharging appliances by hand pump to be installed.
  - (d) For easy take out of bait, up and down appliances including wire mesh with frame, etc. to be provided.
- 2. Insulation
  - Material of insulation to be of fire retarding polyurethane-foam or equal.
  - Linings to be of marine use water proof plywood and to be coated with GRP.

| Thickness | of insulator            | and linings      | to be as              | follows:             |
|-----------|-------------------------|------------------|-----------------------|----------------------|
|           | يسترقص فارتقد المرار ال | u jan isani dinu | States and the second | ori i sussena Bra¥na |

|          |         | Ins   | ulator       | (mm)         |                    | 2008 - 2009 - 2009<br> | angeren ber | Lini    |                 |
|----------|---------|-------|--------------|--------------|--------------------|------------------------|-------------|---------|-----------------|
|          |         |       |              |              | face t             |                        |             | (mm     | )               |
|          | Ceiling | Floor | Eng.<br>room | F.W.<br>tank | Side               | Fish                   |             | Ceiling | Floor<br>& wall |
| C.L.hold | 100     | 75    | 125          | 75           | - 1 <del>-</del> 1 | 75                     | 100         | - C 12  | 22              |
| Others   | 100     | 7.5   |              | 75           | 100                | 75                     | 100         | 12 ···· | 22              |

- Note: Minimum thickness of insulator in way of frame, stiffener, beam, etc. to be 50 mm.
- 2.19 Compass Deck and Top of Deck House and the stand the
  - 1. Compass deck
    - At the front and a part of side, steel, bulwark to be installed, and
    - at other places galvanized steel handrail to be installed.
  - A vertical ladder to be fitted at the port side.

|   | Table type<br>magnetic compass | Radar mast                          | Search light | Rudder angle<br>indicator |
|---|--------------------------------|-------------------------------------|--------------|---------------------------|
|   | steering stand                 | Main engine<br>remote<br>controller | Ventilator   | Binocular                 |
|   | Side light                     | Hoip antenna<br>for<br>wireless     | Vóice tube   | Fish finder<br>indicator  |
| 1 | Other                          | se el sites de la si                |              |                           |

The following equipments to be installed on the deck.

2. Top of deck house

Steel handrail to be installed around the top of deck house and a vertical steel ladder to be fitted at the aft wall and port side wall.

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The following equipments to be installed on the top of deck house.

| 1.<br>1.              | Engine room | Funne1 | Ventilator                             | Life raft |  |
|-----------------------|-------------|--------|--|-----------|--|
| ÷ រំរូវជាតិដំបូរ ដែលច | Aft mast    |        | Small size stick<br>net fishing winch. | Other     |  |

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2.20 Wheel House

1.1

1. The ceiling and wall to be insulated with insulation material of not less than 50 mm in thickness, and to be lined with water-proof treated plywood for marine use.

 The floor to be laid with linoleum on latex-deck composition (8 mm).
 The doors to be of light alloy and provided with thick square glass. Also rubber packings to be fitted around the door touching places.

Landsleid versaments on a construction with a state of the state of the second statements of

| Steering stand                      | Engine remote<br>controller                | Radar<br>indicator                            | Fish finder<br>Indicator                      |
|-------------------------------------|--|---|---|
| Table type<br>magnetic compass      | Electric<br>thermometer                    | OMEGA<br>receiver                             | Soner.<br>Indicator                           |
| Rudder angle<br>Indicator           | Direction<br>finder                        | Portable rudder<br>controller                 | Public<br>addressor                           |
| Sea water thermo<br>meter indicator | Chart table<br>with chart box<br>and blind | Anemometer<br>Indicator                       | SSB system<br>radio-telephone<br>& auto-alarm |
| Clock                               | Buzzer                                     | Barometer<br>indicator                        | Voice tube                                    |
| Motor siren<br>push button          | Binocular                                  | Navigation light<br>Indicator                 | Clinometer                                    |
| Black board                         | Book case                                  | Instrument stand<br>with locker<br>underneath | Wall type<br>ash tray                         |
| Fire<br>extinguisher                | Pen stand                                  | Signal flag box                               | Others  |

| 4. | The following | equipments        | to be | provided in | i the room   | ն∎∵_ |
|----|---------------|-------------------|-------|-------------|--------------|------|
|    |               | 도 집에 가슴 아파는 아파를 못 |       |             | ાં અને સામેન | 271  |

Note: 1. Gutter way to be provided around the wheel house floor and fitted with drainnage. 

Compartment of the wheel house shall be changed accord-2. ing to the type of selected instrument. Send Long 11.1

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2.21 Interior Fitting The furnishing in living room and mess room to be as follows.

The ceiling and wall of each room to be lined with water proof 1. 教育会研究的事業 建铁合物的工作

treated plywood for marine use.

Insulator (50 mm or more) for heat to be inserted between linings and steel deck and steel wall, and insulator for noise to be used for the part face to engine room.

Special care to be paid for preventing sweat on the after bulkhead

of No. 1 crew space.

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| Place                           | Covering               | sa<br>Tangang sa                       | Finishing  |
|---------------------------------|------------------------|--|--|
| nato (venit n                   | Material               | Thickness<br>(mm)  |  |
| Captain room                    | Latex-deck composition | 8  | Vinyl tile   |
| No. 1 crew space                |                        |  | ebas<br>eta do e   |
| No: 2                           | Wood deck              | o 1942 <b>50</b> (ma 184   | do.  |
| No. 3                           | do,                    | 50   | do.  |
| Mess room                       | do. 1                  | 50   | do.  |
| Galley                          | Cement                 | 30   | Non-skid tile  |
| Water closet                    | do.                    | 30   | do.  |
| Companion                       | Latex-deck composition | 8  | n an an an an an an Arrente.<br>Tha an |
| Entrance to No. 2<br>crew space | do.                    | 14. (* 1997)<br>1997 - <b>8</b> . (* 1997)<br>1998 - Charles Barris, 1997) | and an<br>Alashi ang                   |

Covering and finishing of floor to be as follows, some standard and 2.

Note: Gutter way to be provided on the floor around the captain room, No. 2 crew space and mess room, and fitted with Sec. 1 

|     | ulainage   | du yeriket de li<br>≹∎                   |   |                |  | ねっとり きょうちゅう   |
|-----|--|--|---|----------------|--|---------------|
|     |  |  |   |                | (1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,  |               |
|     | and we have a state of the second state of the |  | et e e e e e<br>T   |                |  |               |
| . 1 | an ing an and a state of the   | and the second                           |   |                | n grabboli<br>Tanang   |               |
|     | n alter av Alterative (1999) († 1999)<br>Andre ander and   | an a | <b>)</b><br>1   |                |  |               |
|     |  |  | 5<br>1<br>1   |                |  |               |
|     |  |  |   | :<br>:<br>:    |  | 446.3         |
|     |  |  |   |                |  | Nysia at in   |
|     |  | 1. A. 1. A.                              | li de la deservación de la deservación<br>El constante de la deservación de la de | tere de la com | Alexandre de la composición de la comp | a and states. |

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3. Inventory of each room to be as follows. The second second to were

| Room<br>Items               | Captain<br>room             | No.1<br>crew<br>space       | No.2<br>crew<br>space        | No.3<br>crew<br>space | Mess<br>room             | Remarko                                       |
|-----------------------------|-----------------------------|-----------------------------|------------------------------|-----------------------|--------------------------|---|
| Berth                       | Double<br>berth<br>for 2 P. | Double<br>berth<br>for 8 P. | Double<br>berth<br>for 12 P. |                       |                          | with<br>curtains                              |
| Mattress                    | for 2<br>persons            | for 8<br>persons            | for 12<br>persons            | fór 2<br>persons      | -                        | with 48<br>sheets                             |
| GOZA<br>(mattress)          | 2                           | 8                           | 12                           | 2                     | -                        |   |
| Pillow                      | 2                           | 8                           | 1.2                          | 2                     |                          | Stuffing Panya,<br>with 48 covers             |
| Blanket                     | 4                           | 16                          | 24                           | 4                     |                          | Single size,<br>with 42 covers                |
| Locker                      | 2                           | 8                           | 12                           | 2                     | n in <del>g</del> adi aa |   |
| Book case<br>or rack        | 1                           | 1                           | 1                            | 1                     |                          |   |
| Hat hook                    |                             | 10                          | 12                           | 2                     | 10                       |   |
| Table or<br>writing<br>desk | Writing<br>desk x 1         | Writing<br>desk x 1         | -                            |                       | Table<br>x 2             | With drawers                                  |
| Chair                       | Folding<br>type x 1         | Folding<br>type x 1         | <b>***</b>                   | -                     | Sofa x 1<br>Bench x<br>2 | Sofa and benches<br>with locker<br>underneath |
| Table ware<br>rack          |                             | -                           | **                           | •••                   | 2                        |   |
| Cup and<br>pitcher<br>rack  | 1                           | 1                           | 1                            | ł                     | . 1                      |   |
| Mirror                      | 1                           | 1                           | 1                            | 1                     | 1                        |   |
| Waste<br>basket             | 1                           | 1                           | 1.                           | 1                     | 2                        |   |
| Clock                       |                             | 1                           | 1                            | ••                    | 1                        | Transistor,<br>marine type                    |
| Ash tray                    | 1                           | 2                           | 2                            | 1                     | 3                        |   |
| Shoe case                   | 1                           | 1 set                       | l set                        | 1                     |                          |   |
| Life jacket<br>locker       | 2                           | 8                           | 12                           | 2                     |                          |   |

Note 1. Effective size of berth to be 1.9 m in length & 0.65 m in breadth, as standard.

2. Mattress to be foam mattress of not less than 5 cm in thickness.

3. Sofa to be stuffed with foam mattress (with spring) and to be with vinyl covered back. Benches to be covered with vinyly

4. Locks to be fitted at desks, lockers and necessary parts.

5. Rolling stopper to be fitted at dining table.

6. Medicine rack to be provided in mess room.

7. Black board (of magnetic steel) to be provided in mess room.

Notice boards (2) to be provided at the appointed places.
 2.22 Galley, Sink, etc.

Galley to be located in mess room without screen bulkhead.

 In the galley, a oil fire cooking range (with one burner) to be installed. A air tank (hand charging type) for the burners to be provided.

A service oil tank (with a gauge) for the cooking range to be installed on the top of deck house above galley. Pipe between the service oil tank and cooking range to be of copper.

Funnel of the cooking range to be insulated, and led to the top of deck house.

2. Two electric rice cooker (2.8 %, 0.95 KW) to be provided.

 One electric refrigerator (400 l, with freezing room) to be provided.
 Plate rack, tool rack and other necessary equipments to be provided in galley.

5. Each one cock for fresh water and sea water to be provided in sink of galley.

2.23 Shower and Water Closet

On starboard side of deck house, shower to be provided. Four shower nozzles to be fitted.

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Fresh water and sea water to be supplied for shower nozzles, and necessary piping to be provided.

Fresh water and sea water supply to be changed over by cock. Removable canvas cover and accessories to be fitted.

NOVADLE CANVAS COVEL AND ACCESSOILES COVEL STATUS

The the second part of the first of the first depart to departs.

to reach have we have not go that when the second three the training

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| Item             | Place                      | 1<br>1 | No. 1             | No. 2 | ÷ |
|------------------|----------------------------|--------|-------------------|-------|---|
| Western<br>(with |                            |        | 4 <u>, 5</u> , 65 |       |   |
|                  | style stool<br>storm rail) |        |                   | 1     |   |
|                  | lder                       |        |                   |       |   |
| Wash bas         | In                         |        | - 1               | 1     |   |

2. Water closet The following equipments to be installed in water closet.

Note 1. Sea water cleaning pipe to be fitted at each stool. 2. Sea water pipe (with cock) for floor cleaning to be

fitted in each water closet.

3. Sewage pipe to be fitted with non-return valve.

. Fresh water pipe (with cock) to be fitted at wash

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2.24 Battery Store

Battery store to be arranged in the engine room opening.

basin.

The inner surface to be covered with anti-acid paint, and gas outlet to be provided.

2.25 Steering Gear Room

The hatch cover to be of steel and to be water tight.

In the room, steering gear and accessories to be installed, and necessary pipings to be provided.

2.26 Painting and Cementing

Surface treatment and painting to be as follows. Coloring to be in accordance with the instruction of the supervisor except otherwise specified. Final painting of shell plates to be done in the dock before delivery. 1. Surface treatment

- Outside of shell plates to be treated by shot blast or sand blast. Inner plates of shell, surface of steel structures and steel outfittings on upper deck to be treated by sand paper or wire brush.
- (2) Wooden part to be painted after sealed.(without treated ply-wood)
- 2. Lower part of deck house wall and floor of engine room where is easy to be stained, to be coated with appointed color up to the suitable height.

- 3. Painting scheme
  - en an the second of the second state of the second s (1) Galvanized steel to be coated with appointed color.
  - (2) Fire extinguisher, piping for fire extinguishing and emergency
  - alarm to be coated with red paint. and produced by and the
  - Painting of the place not appointed in the table to be in (3)

accordance with supervisor.

(4) Painting scheme to be as follows. nat di

| Pain  | ited place   | Lower painting<br>(anti-rusting)   | Times   | Final painting   | Times |
|---|--|--|---------|--|-------|
|   | under water line   | wash primer  | 1       | Chlorinated<br>rubber A/F  | 2     |
|   | above water line   |  |         | Chlorinated<br>rubber paint  | 2     |
| <u>بد کر </u> | water line part  | Chlorinated rubber<br>A/C  | 2       | Chlorinated<br>rubber A/F  | 2     |
| Rudder –  | inner surface  | bitumínous<br>solution   | 1       | la de la companya de<br>La companya de la comp   |       |
|   | deck and water way<br>steel part   | oily A/C   | 2       |  | 2     |
|   | ck under wooden  | bitumatic solution   | 2       | asphalt pate   | 1     |
| Steel pa<br>boards                                | irt covered with   | anti-rusting paint   | 2       | n an an tha share a tha an tha an<br>tha an tha an<br>tha an tha an |       |
| Battery   | store  | anti-rusting paint<br>liquid enamel<br>(floor)   | 1<br>2  | diallyl phthalate  | 2     |
| Fish  | bottom   | liquid enamel  | <b></b> | na agus forda con a strono a deil<br>Taing a forda con a strono a strono   |       |
| hold  | other  | anti-rusting paint   | 2       |  |       |
| 011 tank  |  | oil wiping<br>after cleaning   |         |  |       |
| Water ta  | nten en fakasta en ar es<br><b>mk</b><br>Mengas k  | after cleaning<br>inner surface:<br>water cement<br>bottom part:<br>thick cement<br>or epoxy paint |         | remove the<br>hardness or<br>water washing   |       |
| Ballast   | tank for the second sec | wash primer<br>o11 A/C   | 1       | n an sharing the solution<br>and solution of ages<br>and solutions are solutions   |       |

| Pạir              | nted place   | Lower painting<br>(anti-rusting)                          | Times          | Final painting                                 | Times                         |
|-------------------|--|---|----------------|--|-------------------------------|
| Bottom            | one of the formation of | water cement and<br>thick cement<br>or<br>tar epoxy paint |                |  |                               |
| Others            |  | anti-rusting<br>paint                                     | 2<br>0. (1997) | diallyl phthalate                              | 2                             |
| Tank to           | p  | tar epoxy paint   |                | an a       |                               |
| Under p           | art of deck<br>ry stand  | thick cement or<br>tar epoxy paint                        |                |  |                               |
| Anchor,           |  | coal tar  | 2              |  |                               |
| Machine           | ry <sup>a</sup> tta an tao ing ang ang ang ang ang ang ang ang ang a   | anti-rusting<br>paint                                     | 2              | diallyl phthalate<br>(maker standard<br>color) | 2                             |
| Steel o           | utfitings  | anti-rusting paint  | 2              | diallyl phthalate<br>(maker standard<br>color) | 2                             |
| Accom-<br>moda-   | Part of hard<br>board  |   |                | color lac paint                                | 2                             |
| tion<br>lining    | Part of soft<br>board  |   |                | color paint                                    | 224<br>- 527 <b>2</b><br>- 45 |
| Furnitu           | re   |   |                | color lac paint                                | . 2                           |
| Wooden<br>describ | part without   |   |                | color paint                                    | 2                             |

2.27 Marks

Letters to be in English and figures to be of Arabic.

1. Name of vessel and port of registry

The followings to be written on shell plates.

Bow each side name of vessel

Stern name of vessel and port of registry

2. Draft marks

To be indicated on each side of bow, stern and midship.

3. Name plate of room

To be fitted at the entrance of each room.

4. Life raft, dinghy, others

Necessary marks to be indicated.

5. Fish finder and sonar to have projecting part under bottom shell, and the position of projecting part to be indicated by marks on both side shell.

| 2.28                                  | Spares of Hull Part  |
|---------------------------------------|--|
| -                                     | 1. Spares to be provided in accordance with the Japanese Special Rules<br>for Fishing Boats CLASS 11.  |
|                                       | 2. Other spares for machines and equipments on the vessel to be supplied according to the Builder's or Maker's standard, excluding specially   |
| Qui tant                              | noted in this specifications.  |
| 2.29                                  | Anchors, Chain Cables and Ropes  |
|                                       | Anchors, chain cables and ropes to be provided as follows.   |
|                                       | Bow anchor (Danforth type) and 70 Kg x 2 sets  |
| e in an Alige<br>A<br>Alexandri dhara | Bow anchor chain cable,  |
|                                       | (welded type) 14 mm dia. x 5 m x 2<br>Bow anchor rope  |
|                                       | (vinylon rope) 38 mm dia. x 110 m x 2<br>Stream anchor 40 Kg x 1 set (without stock)   |
| i de Element<br>1                     | Stream anchor rope in the state of the state state the state state of the state state of the state state of the state state of the stat |
|                                       | (vinylon rope) 38 mm dia. $\times$ 75 m $\times$ 1   |
| :<br>                                 | Towing rope (vinylon rope) 38 mm dia. x 135 m x 1 detail with the  |
| t de la te                            | Hawser (vinylon rope) 20 mm dia. x 165 m x 1.  |
|                                       | Bow anchor shackle 4 (including two spares)  |
|                                       | Buoy shackle   |
| 2.30                                  | Accessories and antional a track   |
|                                       | 1. To be provided in accordance with the Japanese Special Rules for  |
| n an b<br>Tanahi pe                   | Fishing Boat CLASS II.   |
| $(-\pi^{-1} t_H \lambda^{-1})$        | The stand a second of the seco |

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2. The following accessories to be provided. (including rules requirement)

| tions Items ( Array of the term  | Quantity   | Items   | Quantity                      |
|--|--|---|-------------------------------|
| Gong<br>Clock<br>Binocular (7 times x 50 mm)<br>Barometer<br>Hand lead ( <sup>3,2</sup> kg lead<br>with 46 m fine)<br>Log<br>Deck clock<br>Sextant<br>Magnetic compass<br>(table type)<br>Mast light (elect. lamp) | 1<br>5<br>7<br>2<br>7<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 | Stern light (elect. lamp)<br>Anchor light (elect. lamp)<br>Red light (oil lamp)<br>Fishing light (elect. lamp)<br>Fishing ball<br>Black ball<br>Driving anchor<br>(parachute type)<br>Nationality flag<br>International signal flag<br>Sign flag<br>International | 1<br>2<br>1 set<br>1 set<br>3 |
| Side light (elect, lamp)   | l pair   | communication book  |                               |
|  | tersta en j  | Medecine kit  | 1 set                         |

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2.31 Inventory 1. To be provided in accordance with the Japanese Special Rules for

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Fishing Boat CLASS II. Followings to be provided (including rules requirement). 2.

| Items   | Quantity   | Items Quantit  | -<br>   |
|---|--|--|---------|
| Stop watch                                      | <b>1</b> .<br>National de la constante de la c | Spanner (various kinds) each 1   |         |
| Chart (indicated)                               | 14 sheets  |  |         |
| Chart weight<br>(circular type, covered)        | <b>4</b><br>10<br>11<br>11<br>11<br>11<br>11<br>11<br>11<br>11<br>11<br>11<br>11<br>11   | Observation outline 1<br>Observation calculation sheet 1   |         |
| Triangle for chart                              | 1 set  | Clinometer 1   | •       |
| Divider   | <b>1</b>   | Hand flag  | у<br>У  |
| Nautical diary (Hull Part)                      |  | Owner's flag   | :       |
| Channel chart (neighboring<br>PAPUA NEW GUINEA) | <b>1 set</b>   | Tide table and the second s  |         |
| Official nautical diary                         | 2  | Wooden block (with tope) 2   |         |
| Light house table                               | 1 set  | Steel block (with rope) 2  |         |
| (neighboring<br>PAPUA NEW GUINEA)               |  | Steel & wooden snatch block / each 2   |         |
| Vinylon fender                                  | 3  | Picture frame 2  |         |
| Tire fender (with rope)                         | н <mark>6</mark><br>1 <b>6</b><br>арбана регологи  | Register of crew's name 1  |         |
| Megaphone                                       | <b>1</b>   | 011 feeder (trumpet & each 1<br>mouse type)  |         |
| Painting tool                                   | 1 set  | Spike (wooden & steel) each 2  |         |
| Sounding scale<br>(for water and oil)           | each 1   | Bucket (alumite & poly) each 2   |         |
| Hammer (large, medium<br>and small size)        | each 1   | Whetstone (various kinds) .each 1  |         |
| Nail pole                                       | 1  | Driver ( <u>+</u> large, medium, each l<br>small)  |         |
| Elect. torch                                    | 1 × 1 <b>2</b> , 1 ↓   | Sand Box   | tan tan |
| (water proof, with 3 cells)                     |  | Whistle  |         |
| Sail sewing tool<br>Scupper driver              | 1 set<br>2   | Mooring rope (vinylon rope<br>30 mm dia. x 50 m with<br>shackle)   |         |
| Throwing rope                                   | 2  | Small oil can  |         |
| Sea knife                                       | 2  | Dirical VII Company and the second se |         |
| Room cleaning tool                              | 1 set  | Funnel 1   | •       |

| Items  | Quantity                                     | Items Quantity   |
|--|--|--|
|  |  | - And the second sec  |
| Square mat   | 5  | Deck washing brush 5   |
| Step board   | 1  | Soap brush   |
| Folding chair  | 3  | Pliers 1   |
| Chisel   | each 2                                       | N1pper   |
| (with goose and flush)   | an an taraigh                                | Pipe wrench (large & small) each l   |
| Carpenter tool (with box)  | l set  | Claw bar   |
| Cutting plier  | 1  | Scissors for oil core  |
| Scissors (various kinds) ,   | each 1                                       | Tape measure (steel 10m, 2m) each 1  |
| File (various kind)  | each 1                                       |  |
| Set file   | 1 set  | Folding measure<br>(steel & wood)  |
| Nail & steel wire  | a few  | English spanner 1  |
| Search light (with 6 cells)  | Constantator<br>Professional de la constanta | Wash basin (poly) 3  |
| Chain block (for 0.5 t)  | 1 set  | Wash tub (poly) 2  |
| and the second |  | Pail (with 5 m rope) 3   |
| File (various kinds)   | each 1                                       |  |
| Name plate hanger  | () - 53 <b>1</b> -763<br>1 2117-83           | Vinyl hose 10 m  |
| Monkey wrench<br>(100 mm, 200 mm)  | each 1                                       | Mansl 1  |
| Paint (various kinds)  | a little                                     | Test hammer 2  |
|  |  | Wind sail and the second secon |
| <del>a gant (c. p. magaztica)</del><br>Maria (c. p. magaztica)   |  |  |
|  |  |  |

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2.32 Cooking Utencil

| Items   | Quantity  | Items                            | Quantity                                |
|---|---|----------------------------------|---|
| an (aluminium, large,<br>medium and small)        | each 1  |                                  | 30<br>20034(103                         |
| empura pan  | <b>2</b> .(9.8)   | Knife (stainless)                |   |
| ly pan (stainless, large)                         | ) <sup>(1)</sup>  | Spoon (stainless)                | 30                                      |
| ater spoon (100 mm)                               | 2   | Whinning tool                    | each 1                                  |
| oup spoon (stainless)<br>ice spoon                | 2.<br>  | plastic)                         | each 2                                  |
| ettle (large, small)                              | each 1  | Food can (aluminium)             | 2                                       |
| ooking knife                                      | 2<br>11 (116) (116) (116) (116)                                       | Grater                           | 13 0 1 SI                               |
| ashimi knife                                      | 1<br>*  | Barthenware mortar<br>(with bar) | <b>1 set</b>                            |
| etit knife  | in in in in it.<br>Anno 1. Anno 1. Anno 1.<br>Anno 1. Anno 1. Anno 1. | Peeler                           | Ste a (283)                             |
| hoyu & sauce pot                                  | each 3  | Whetstone Constant               |   |
| arge dish (plastic)                               | 30  | DIECTIO Jar                      | jelg og sk                              |
| mall dish (plastic)                               | 30.   |                                  | Montery at                              |
| urry dish (plastic)                               | <b>30</b><br>1946-001   | Chopping board (plastic)         | ( , ave ()2.1 )                         |
| oup bowl (plastic)                                | 30  | Pot (states and                  | 1 1 1 1 2 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 |
| hopstick (bamboo<br>including large<br>chopstick) | 30 sets   | Butt (alumite large &<br>medium) |   |
| up  | 30  | Circular & square tray           | each 2                                  |

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# 3.1 General Description

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Machinery part of this vessel, considering automation and rationalization of work in engine room as far as practicable, to be provided with such machinery and equipments as to operate free from overhauling and adjusting in a long time and also to consist of the most economical and man-powersaving engine room.

Machinery and equipment installed on this vessel to be provided in line with the above and also machinery arrangement and outfitting work to be carried out in line with the above.

3.2 Main Engine

Main engine to be specified as follows and free from injurious torsional and engine vibrations.

1 set

Not less than 550 ps

1. Type and No. of set

4-cycle diesel engine

Output (continuous rating)

Revolution (continuous rating) : Not more than 900 rpm No. of cylinder : 6

Starting method: by compressed airCooling system: Sea water cooling systemFuel oil: Diesel oil (A oil)

2. Reduction-Reversing Gear

Reduction gear to be free from overhauling in a long time and remoteoperated easily. All reduction gears to be hardened and polished and to be of good accuracy and sufficient durability. Coupling connected with main engine and reduction-reversing gear to be durable to be used continuously in a long time. Revolution of propeller : 380 rpm and under Clutch : Hydraulic, multi-disc type

Lubricating system : Forced lubricating system

Hydraulic pump and oil cooler to be provided.

3. A sea water cooling pump, a lubricating oil pump, a fuel oil supply pump to be main engine driven type.

 The governor to be of all-speed type and to have over-load fuel oil limitting device and over-speed trip as safety devices.
 Main engine to be provided with revolution indicator, lubricating oil pressure gauge, cooling water pressure gauge and other necessary instruments.

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|                                  |  |  | the discustored to the   | For   |
|----------------------------------|--|--|--|---|
| 6.                               | Main engine to be starte   |  |  | 101   |
|                                  | remote control and watch   | ing system, refer t  | :0 3.0.  | e di tato in<br>Nationali di tato internationali di tato internationali di tato internationali di tato internationali di tato i |
|                                  | fting and Propeller  |  | and the second second second   |   |
| 1,                               | Shafts to be of forged s   | 이 안동 같은 일찍은 방법이 가지 않는 것을 수 있다.   | y and propeller shaft  | . <b>CO</b> (1997)<br>1. State (1997)   |
|                                  | be of Class I with rubbe   | r lining.  | and the state of the second  |   |
| 2.                               | Propeller to be of fixed   |  | And the state Visual Band  |   |
| an i da n<br>An dere             | Blade to be of aluminium   | bronze of manganes   | e bronze and to be go  | od at   |
|                                  | dynamical and statical b   | alance.  | n an anna an agus an Britin Ail  |   |
| 3.                               | Stern tube to be cooled  | by sea water suppl:  | led from stern tube co   | oling   |
|                                  |  |  |  |   |
| 1 2 4 4 4 4<br>4                 | Bearing to be of lignum  | vitae and in contac  | et with the cut end.   |   |
|                                  | Gland packing of stern t   |  |  | 1eeve   |
|                                  | to wear little.  |  | ्रायाः व्यक्ति स्वतः स्वतः<br>स्वतः स्वतः स्व  |   |
| 4                                | Anti-corrosion device su   | ch as brush appara   | tus installed between  | shaft   |
|                                  | and hull to be provided  | and the second | n an   |   |
| 3.4 Gen                          | erator Engines   |  | n an an ann an Anna an Anna an Anna an Anna an Anna an Anna.<br>Anna an Anna a<br>Anna an Anna an  |   |
|                                  | erator engines to be spec  | ified as follows a   | nd free from injurious   |   |
|                                  | sional and engine vibrati  | the second s   | an an 1987 an 1  |   |
|                                  |  | cycle diesel   | an ing pagta panganan dara da karangan sa  |   |
| 1.                               | Type 4-<br>No. of set  | 2  | 1997 - 1998 - 1997 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 -<br>1998 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -   |   |
|                                  | · · · · · · · · · · · · · · · · · · ·  | 0. PS and above  | e de gine ante i statistist.<br>A constante a c  |   |
|                                  | · · · · · · · · · · · · · · · · · · ·  | 200 rpm and below  |  |   |
|                                  | 이 가지 이 것을 타하겠어? 유명이 가락   | <ul> <li>Address of the second state of the second state</li> </ul>  | is - Arthor Ch<br>Sy Afrika a Gig Barger e a   |   |
|                                  | No. of cylinder  |  |  |   |
|                                  | Starting method by   |  |  |   |
| Andread (1977)<br>Andread (1977) | Cooling system Se  |  |  |   |
|                                  | Fuel oil grade and Di  | and the second |  |   |
| a) rafi iskuts                   | Generator 11   |  |  |   |
| 2.                               | Each part of engine to b   |  |  |   |
|                                  | Cooling sea water pump a   |  |  | .ne   |
|                                  | to be directly driven by   |  |  |   |
|                                  | Hand operated type lub.  |  |  |   |
| 3.                               | Engine and generator to  |  |  |   |
| 4.                               | Watching system for thes   |  |  |   |
|                                  | Starting and stopping of   |  |  |   |
| 3.5 Air                          | Compressors and Air Rese   |  |  |   |
| 1.                               | Main Air Compressor  | bilan salah ana sala   |  |   |
| ·                                | (1) Type and No. of Set  | : Sea water coo  | led, 2-stage compressi   | lon   |
|                                  | $e^{-i\omega t} = \hat{P} \log(\omega t) + i\omega t$ where $e^{-i\omega t}$ | type, 1 set  | n an an an ann an Airtean an Airte<br>An an Airtean Ai  |   |
|                                  | Capacity   | $: 22 m^{3}/h and a$   | bove de la série de la serie d |   |
|                                  | Pressure   | : $30 \text{ kg/cm}^2$   |  |   |
|                                  | Motor  | : 5.5 KW and ab  | ove  | · . · ·   |
|                                  |  | - 30 -   |  |   |

(2) It to be started and stopped automatically by the pressure of air reservoir.

2. Emergency Air Compressor

Type and No. of Set : Sea water cooled, 2-stage compression type, 1 set

Capacity : 9 m<sup>3</sup>/h and above

Pressure : 30 kg/cm<sup>2</sup>

Prime mover. Air compressor and prime mover to be installed on common bed.

.3. Air Reservoir

(1) For diesel engine : 2 sets

Pressure : 30 kg/cm<sup>2</sup>

Capacity : 150 lit. and above

(2) For general service : 1 set

Pressure : 30 kg/cm<sup>2</sup>

Capacity : 75 lit. and above

(3) Air reservoirs to be provided with pressure gauges, pressure switches, safety valves, pressure reducing valves, etc. as

necessary.

3.6 Automatic Operation, Remote Control

1. Principal machinery

fares gateros

Main engine: Remote control (to start and stop locally) with alarm device. (as for lubricating oil low pressure of main

engine, and for hydraulic oil low pressure of reduction-

reversing gear, alarming in the first step and engine

and to Make the stop in the second step, as for overspeed, engine stop.)

Local start and stop with alarm device. Generator engine . jave 18 👘 🕴 1 Automatic start and stop Main air compressor : Fuel oil service pump : Automatic start and stop Automatic operation Fresh water service pump Sanitary pump and a Continuous operation Remote start and stop (Refer to 3.11) Other main pumps Automatic operation Air conditioner : Complete automatic operation with alarm Distilling plant Har Alfan

> All alarm device to consist of alarming buzzer and alarming lamp. Instrumentation for local operation to be provided as necessary. Main Engine Remote Control System

device

Speed control, clutch engage/disengage operation, reversing and emergency stop of main engine to be done from control stand in wheel house and compass deck. But start and stop of main engine to be done locally in principle.

(1) Wheel House Control Stand

Following equipments to be combined in control stand with testing apparatus for lamps and buzzer.

(a) For main engine

Control apparatus One (1) control handle for

Watching apparatus

化合合物 美国的计数计划

atus Indicating lamp for operation Main engine running lamp Operating position (wheel house, engine room, compass deck) Running operation (ahead-neutral-astern)

Main engine revolution indicator of electric type

1 set

Revolution control,

Clutch engage/disengage control, and Reversing control:

Emergency stop (Electric type with push button having protecting cover)

Indicating lamp for electric source Others

Low pressure of main engine lub. oil High temperature of main engine cooling sea water

Emergency stop of main engine Low pressure of cooling sea water for stern tube Low pressure of starting air pressure Control electric source failure Low oil pressure for reductionreversing gear Automatic stop of main engine (each for over speed, lubricating oil low pressure of main engine, and hydraulic oil low pressure of reduction-reversing gear)

Low lubricating oil pressure alarm High cooling water temperature alarm Low level alarm Refer to 3.9

Alarming device

skieries and 1000 is stalicies and and and a second and a by stalic stalic stalic and a second and a second and a second and a second second and a stalic stalic stalic and a second second and a second a second and a second second a second and a second a second and a second a second and a second a second and a seco

(b) For other machinery Generator engine

Fuel oil service tank Pumps

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| n en   |   |
|--|---|
| (c) Other necessary equipments dufficed much restriction to the  |   |
| Illumination device for instrumentation to be provided.  |   |
| to our recenter including running indicators to be of  |   |
| illumination adjustable type.  |   |
| (2) Compass Deck Control Stand   |   |
| To be same as wheel house control stand.   |   |
| (3) Engine Room Watching Panel 1 set   |   |
| Following equipments to be combined in watching panel (hanging   |   |
| type) with testing apparatus. Watching panel to be installed   |   |
| near main engine operating handle.   |   |
| At (grad(a), For main engine which has an object ((1.41) and extraction of                                     |   |
| Operating position changing switch (wheel house, engine room,  |   |
| Lis antons had a subscription of all a set alest the trans and compass deck)                                   |   |
| Watching apparatus Indicating lamp for operation   | . · · · ·   |
| Operating position (wheel house, engine  |   |
| room, compass deck)  |   |
| Running operation (ahead-neutral-astern)   |   |
| balend anitostant and present for invite Indicating lamp for electric source                                   |   |
| Alarming device Overload   |   |
| Low pressure of main engine lub. oil   |   |
| High temperature of main engine cooling  |   |
| sea water  |   |
| shulan dellagen of della the line to Bmergency stop of main engine   |   |
| here and over a the state of Control electric source failure   |   |
| Low oil pressure for reduction-reversing   | а.<br>1911 — на 1911 — на |
| the long templated by the standard general surger to the temp the temp the temp and the standard the long      |   |
| Automatic stop of main engine (each for  |   |
| (eevel ze to optimite) over speed, lubricating oil low pressure  |   |
| of main engine and hydraulic oil low   |   |
| pressure of reduction-reversing gear)  |   |
| (b) For other machinery again and a subject to an analyzed as  |   |
| Hours Taxan mercan Generator engine Low lubricating oil pressure alarm   |   |
| High cooling water temperature alarm   |   |
| Fuel oil service tank Low level alarm  |   |
| Distilling plant High salinity alarm   |   |
| Pumps Refer to 3.9   |   |
| (c) Other necessary equipments   |   |
|  |   |
| je s slavgenski og getter filder og polisi fræderige af deret og stilleret i deret i deret filder. En skiller  |   |
| and the part of the second |   |
| <b>~ 3</b> 3 <b>~</b>  |   |
|  |   |
|  |   |

## 3.7 Refrigerating Plant for Fish Holds started and a started by

| Use the second sec |                               | Refrigerant   | Capacity of compressor                                     | Compressor<br>output                | No. of<br>compressor |
|--|-------------------------------|---|--|-------------------------------------|----------------------|
| Sea water cooler<br>and fish hold  | Brine<br>condens-<br>ing unit | R-22 and<br>CaCl <sub>2</sub>   | Abt.19,000 Kcal/hr.<br>CT +30°C<br>ET -15°C<br>x 1,000 rpm | 11 KW<br>1963 - 1975<br>2019 - 1975 | 1                    |
|  |                               | a da da da general da series de la series de l | Abt. 6,600 Kcal/hr.<br>CT +30°C<br>ET -15°C<br>x 900 rpm   | 3.7 KW                              | 1                    |

| 1          | Refrigerant (R-22) is feeded to brine cooler and brine (CaCl2) is      | . • |
|------------|--|-----|
| 1. S.A.    | cooled down.   |     |
|            | Brine which has been cooled down is feeded to sea water cooler and     |     |
|            | cooling coils inside fish hold by brine pump.                          |     |
| .1.51      | Brine cooler (1 set each), brine pump (1 set each) and 1 set of sea    |     |
| e în st    | water cooler must be provided.   |     |
| 1.1        | Sea water cooler must have such capacity that 12 $m^3$ of sea water at |     |
|            | 32°C can be cooled down to +2°C within 20 hours and protection device  |     |
|            | against freezing of water must be provided.                            | •   |
| 2          | Condenser receiver (2), oil separator, drier, strainer, expansion      |     |
| 1. a.      | valves (which are combination use of automatic & manual operation)     |     |
|            | heat exchanger, protection device, etc. must be provided.              |     |
| 3          | Refrigerant, silicagel, brine, ref. oil, etc. must be supplied includ- |     |
|            | ing spares, moreover, gas detector, thermometer, spare parts, and      |     |
| · . ·      | tools must be equipped.  |     |
| 4          | Watch and control panel for cooling system must be provided in         |     |
| •          | engine room.   |     |
| · · ·      | (1) Electric thermometer for fish hold. (change over type)             |     |
|            | (2) Indication lamp or alarm showing drop of pressure because of       |     |
| н н р<br>- | shortage of lubricating oil or stop of compressor caused by            |     |
|            | abnormal rise of high pressure.  |     |
|            | (3) Water protection device & indication lamp of cooling water pump.   |     |
|            | (4) Protection device against freezing of water cooler (including      |     |
|            | alarm).  |     |
|            | (5) Pressure gauge   | ţ   |
|            | high pressure  |     |
|            | low "  |     |
|            | oil "  |     |
|            | (6) Indication lamps must be provided for followings, compressor       |     |
|            | (each one), cooling water pump (1 set), solenoid valve (1 pce).        |     |

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(7) Other necessary fixtures

3.8 Distilling Plant One (1) set of distilling plant of following capacity to be provided. Piping system and necessary outfittings to use main engine and generator engine cooling water for evaporation of sea water to be provided. Electric motor driven type condenser cooling pump, ejector pump, brine pump and distilled water transfer pump for this plant to be provided. The plant to be operated automatically and to be used a long time without overhauling. And salinity detector to be provided and in case of emergency alarm to be indicated on engine room watching panel. Distilling capacity 1.5 t/day Salinity to be 10 PPM and below under the condition of feed water temperature 46°C and sea water temperature 30°C.

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3.9 Pumps

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Specification of principal pumps of electric motor driven type to be as follows. 1. Engine driven pumps and engine auxiliary pumps

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|   | Name                                  | Type              | •••••<br>No • (5)         | Capac1ty<br>Head  | Driving<br>system 5 100  | Remark  |
|---|---------------------------------------|-------------------|---------------------------|---|--|---------|
|   | Cooling sea<br>water pump             | Centri-'<br>fugal | 22 <b>1</b> 251<br>241-03 | Sof Manager Parties   | M/E driven   | er e ye |
| a Engine<br>*   | Lubricating<br>oil pump<br>Stand-by   | Gear              | ut neu<br>Neutro          | Sufficient one  | M/E<br>driven<br>Electric  |         |
| M<br>M<br>M<br>M<br>M<br>M<br>M<br>M<br>M<br>M<br>M<br>M<br>M<br>M<br>M<br>M<br>M<br>M<br>M | 1ubricating<br>oil pump               |                   |                           | and an                                      | motor<br>driven,<br>5.5 KW   |         |
|   | Fuel oil<br>supply pump               | Gear              | Ï                         | Sufficient one  | M/E<br>driven  |         |
| trsing  | Hydraulic oil<br>pump                 |                   | 1                         | Sufficient one  | Reduction<br>gear<br>driven  |         |
| keduction-keversing<br>Gear   | Stand-by<br>hydraulic<br>oil pump for |                   | 1                         |   | Electric<br>motor<br>driven  |         |
| regucer   | reduction-<br>reversing<br>gear       |                   |                           | an an an an Andréa Angla.<br>Angla angla ang ang ang ang ang ang ang ang ang an |  |         |
| ।<br>हर<br>म् द्यु  | Cooling sea<br>water pump             | Centri-<br>fugal  | Bach<br>1                 | Sufficient one  | Engine<br>driven   |         |
| n venera<br>Engine  | Lubricating<br>oil                    | Gear              | Each<br>1                 | Sufficient one  | Engine<br>driven   |         |
| Main<br>tor ]   | pump                                  |                   |                           |   | a de la calendaria.<br>El trata la calendaria<br>El trata la calendaria. |         |

| •  |             |               |            |              | · ·        | · |  |
|----|-------------|---------------|------------|--------------|------------|---|--|
| 2. | Other Pumps | (capacity and | head to be | indicated as | standard.) |   |  |

| v. Leggar bis I                  | Type   | No.<br>of<br>set | Capacity<br>(about)                                | Head<br>(about)                  | Motor              | Rehark                            |
|----------------------------------|--|------------------|--|----------------------------------|--------------------|-----------------------------------|
| And Antonio Ball                 | and and the second s<br>A second |                  | (m <sup>3</sup> /hr)                               | (m)                              | (KW)               | N Mg aya a sa                     |
| G.S. & fire pump                 | Centrifugal<br>(self-prim-   | 1                | 40   | 20                               | 5.5                | Commonly used<br>for stand-by     |
| ine foste ind gere               | (sett prid"<br>ing)  |                  |  | 网络医疗情                            |                    | main engine                       |
|                                  |  |                  |  | e de la dest                     | 51 - 197           | cooling and bilge                 |
| Bilge & water                    | Centrifugal  | 1                | 40   | 20                               | 5.5                |                                   |
| circulation pump                 | (self-<br>priming)   |                  |  |                                  |                    |                                   |
| Stern tube.                      | Centrifugal  | 1                |  | 15                               | 0.75               |                                   |
| cooling water<br>pump            |  |                  |  |                                  | e) terit.<br>Bitta | el Présent de la company<br>Tamén |
| Fresh water                      | Centrifugal  |                  |  |                                  | 0.2                | Home pump                         |
| service pump                     |  |                  |  |                                  |                    |                                   |
| Sanitary pump                    | Centrifugal  | 1                | 10   | 20                               | 2.2                |                                   |
| Fuel oil<br>transfer pump        | Gear   | 1                | 8  | 20                               | 2.2                |                                   |
| Fuel oil                         | Gear   | <b>1</b>         | na an an an Arain.<br>Stàiteacht <b>3</b> na bhean | 15 - 15                          | 0.75               |                                   |
| service pump                     |  |                  | an taga<br>Taga taga taga taga                     |                                  |                    |                                   |
| Cooling pump<br>for ref. machine | Centrifugal  | . 1              | 20   | 14                               | ⇒ <b>1.5</b>   -   | for sea water<br>cooler           |
| tor ref. machine                 | n s  | 1                | 5 an <b>5</b> and                                  | 9                                | 0.4                | for fish hold                     |
| Brine pump                       | Centrifugal  | 1                | 1 <b>3</b>   | 25                               | 3.7                | for sea water                     |
|                                  | General Grand 1  | 1(               | u 995 a. 119<br>€1a 110 <b>5</b> ,1                | 14 )<br>14 )                     | 1.5                | cooler<br>for fish hold           |
| Brine pump                       | Centrifugal  |                  |  |                                  | 1,5                | for sea water                     |
| Circulating pump                 | Centr1fugal  | 1                | 13   | 19                               |                    | cooler                            |
| Cooling pump for                 | Centrifugal  | 1.<br>1          | 111.00 <b>7</b> 1 ()                               | 14                               | 1.5                | ssee it                           |
| ref, machine of air conditioning | Энон (94), 240.<br>Стар  | 1183<br>1        | ्रम्पः<br>स्टब्स् स्टब्स् वि<br>र                  | de Calendaria<br>A de Calendaria | mag ar             |                                   |
| Circulating pump                 | Centrifugal  | 3                | 55 - S   | 13                               | 5.5                | for balt hold                     |
| Sprinkler pump                   | Centr1fuga1  | 1                | 115  | 20                               | 11                 |                                   |

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been been and be be build and and the she are defined by some that Impeller for sea water, bilge and fresh water handling pumps to be 3. of cast bronze and shaft for them to be of 18-8 stainless steel. Fresh water service pump to be automatically started and stopped by 4. pressure of hydro-tank.

Fuel oil service pump to be automatically started and stopped by 5. level of fuel oil gravity tank.

Pump with mark o to have start/stop switch and running indicator both 9 - 19 **6.** - 3 at pump side and at control stand in wheel house, while pumps with mark \* to have start/stop switch and running indicator both at pump 12102 8 历云击 side and engine room watching panel. 气的过程 财政主任再来提供的复数 《《白》1》4

- Hand pumps to be provided as necessary. 7.
- Each pump to be provided with vacuum gauge and pressure gauge for 13 8. 1 Jaw Wattoos watching. HARC

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## 3.10 011 Tanks

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teria, j

Following tanks to be installed in engine room. Capacity to be decided described dataset a Supercente Setata 1 - F after discussion with supervisors. Sugar & 1.2.1 1. . . . . .

|                         | the second s                           |  |   | and the second                            |  | 1   |
|-------------------------|--|--|---|---|--|---|
| Name                    |  |  | No.   |   |  | 1 . 3   |
| Fuel oil gravity tank   | 1  |  | 1   |   | going abive  |   |
| Lub. oll tank           |  |  | 1.  | in double t   | ottom  | 5   |
| Daily service lub. oil  | tank   |  | 1   |   | Adora Ruora  | i k   |
| Washing oil tank        |  |  | 1   |   | Since out  |   |
| Refrigerator oll tank   |  |  | 1   |   |  |   |
| Dirty oil tank (fuel of | 1, lub. oil  | )  | 2   |   | genter south   | 8   |
| Other necessary tanks   |  |  | linge   |   | me dekamenda.  |   |
|                         | Fuel oil gravity tank<br>Lub. oil tank<br>Daily service lub, oil<br>Washing oil tank<br>Refrigerator oil tank<br>Dirty oil tank (fuel oi | Fuel oil gravity tank<br>Lub. oil tank<br>Daily service lub, oil tank<br>Washing oil tank<br>Refrigerator oil tank<br>Dirty oil tank (fuel oil, lub. oil | Fuel oil gravity tank<br>Lub. oil tank<br>Daily service lub, oil tank<br>Washing oil tank<br>Refrigerator oil tank<br>Dirty oil tank (fuel oil, lub. oil) | Fuel oil gravity tank1Lub. oil tank1Daily service lub, oil tank1Washing oil tank1Refrigerator oil tank1Dirty oil tank (fuel oil, lub. oil)2 | Fuel oil gravity tank1Lub. oil tank1, in double bDaily service lub, oil tank1Washing oil tank1Refrigerator oil tank1Dirty oil tank (fuel oil, lub. oil)2 | Fuel oil gravity tank       1 |

- Inside of each tank to be washed and cleaned sufficiently. Each tank 1. to be provided with level gauge, manhole, connecting pipe, air pipe, drain pipe, valves, cocks and other necessary fittings. ine post o
  - Fuel oil and lub. oil tanks to be provided with oil tray and dirty 2. oil to be led to dirty oil tank.

Installation in Engine Room 3.11

- Main engine, auxiliary engines, generators, switch board, air compres-1. sors, refrigerators, distilling plant, pumps, etc. to be arranged, considering easy maintenance and sufficient prevention of vibration. And dangerous parts to be insulated or protected from personal.
- Ventilating ducts to be led in engine room and two (2) ventilating 2. fans to feed and exhaust air. Natural ventilator to be also provided to feed air to engines sufficiently as well as to exhaust air in

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bas rengine room. As an of a structed as free from sea water and spray entering.

- 3. Low sea chest, on which Kingston valves to be fitted, to be specially considered so as sea water flow not to be reduced at simultaneous operation of all machinery. High sea chest to be also provided as well as low one. Sea water sucked from high sea chest to be led only to main engine, auxiliary engines, refrigerators, general service pump and sanitary pump.
  - Sea chests to be provided with sea water blow-off valve for cleaning obstacles and air pipe, which to be led to upper deck.
- 4. I-beam and lifting gear to be provided to overhaul main engine. Overhauling equipments to be also provided above shafting, auxiliary engines, generators, etc.
  - Checkered steel plate to be laid on passages and necessary part in engine room and steel gratings, steel ladders, steel handrails, ventilating ducts, etc. to be arranged completely.
- Around main engine handle, engine watching panel, electric engine telegraph, interphone and gong to be arranged and clinometer, thermometer, fire extinguisher, basin, etc. to be also provided at suitable place in engine room.
- Engineer's store to be located at suitable place in engine room. Electric grinder (0.4 KW), electric drilling machine (0.2 KW), electric welder with accessories, gas welder with accessories, black board, vice, etc. to be installed and also necessary tools, boxes to be provided.

Door of engineer's store to be locked and shelves, hooks, etc. to be arranged according to indication of supervisors.

3.12 Exhaust Gas System . Jets Seen of West Laborage Sectors and the set of the set

- 1. Each main and auxiliary engines to be provided with exhaust gas silencer respectively.
- 2. Funnel to be of steel plate and designed for good internal ventilation. Each exhaust gas pipe and silencer to be free from vibration and to be provided with expansion joint of stainless steel at necessary part. Furthermore they to be insulated strongly by asbest cloth of enough thickness.

3.13 Piping System Contractor and the second and the Contractor and

Piping in engine room to be arranged for machinery to be maintained easily and also arranged that drain, air, etc. not to stagnate in pipes. 1. Sea water, bilge and fresh water pipings.

All sea water, bilge and fresh water pipings to be of galvanized steel pipe. And pipings of inner dia. 40 mm and above to be galva-· 注意: "一个问题, nized after manufacturing. Ballast piping to be arranged for appointed fuel oil tanks in order services to be ballasted and deballast in emergency case, estimated a 2. MOII (Pipes and Second Las and Mi Second Mi Second Contraction (Chi ) a land a second Rotring filter or other suitable fine filter to be provided for fuel er de Paler oil purification. As for spare elements same number of working ones MARK PLATERS HER to be supplied. Fuel oil flow meter (one for M/E and one for gene. engines) to be provided on piping to each engine from fuel oil gravity tank to measure fuel oil consumption of main and auxiliary engines. 3.14 Painting and Name Plates and the start of the start of the start was the start of the start 1. Kind, capacity and interval of exchange of lub. oil to be indicated the by name plates for principal machines. This is have been adouted 2. Filter to be provided with caution plate indicating interval and means of cleaning with the state of all pays a table got a Winaw 3, Machinery in engine room to be painted by anti-corrosive paint and here is also specified colors. He as another or manual further of 4. Pipings to be distinguished by colors for the purpose. a bat 5. Name plates to be fitted on principal valves and gauges and on each the tank name and capacity to be indicated. Common a first add 3.15 Spare of Machinery Part Jak of Disades (Witherdy) asked of Addusday 1. Spare to be provided in accordance with the Japanese Special Rules for Fishing Boats CLASS II. 2. Followings to be supplied. (including rules requirement) an advantage (1) "Each kind of packing of for a last a strong by Last Strong by the st Kind to be limited to especially necessary ones used actual, piping for main and generator engine 1941年1月1日日本中国中国中国王王王 (2) Fuel pump and fuel valve dia Quantity for 1 unit each a star for main and generator engine as transferences to the elect and the server (3) and inlethand exhaust valve for each engine to be the based of the en en two and the **for main and generator engine**symmetry by the test statemetry of the second statemetry of t an and the level of the tota Quantity for 1 unit each to date etc. (4) Piston aring to the second second second the Quantity for 1 unit each for main and generator engine . 200. Kg a (20)7 -Refrigerant for refrigerator (with bottle) (5) Refrigerator oil and a subscription approximation of 100 lit. Mailing (6) Wess (white cotton) and the second second locate 100 Kg and second (7) and the second of the second frequencies of

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3. Other spares for machines and equipments on this vessel to be supplied according to the Builder's or Maker's standard. ે છે. છે. છે. છે.

3.16 General Tools of Machinery Part

General tools to be supplied in accordance with the Japanese Special 1. Rules for Fishing Boats Class II.

Followings to be supplied as well as tools necessary for overhauling 2. assembling and maintenance of machinery. (including rules require-

| nounds doorn it Item to do and have a serviced to  | Quantity        |
|--|-----------------|
| Diary of ref. plant                                | 1041 <b>3</b> 1 |
| Diary of machinery plant                           | 3               |
| Stop watch   | 1               |
| Pressure indicator (for main engine)               | 1               |
| Injection valve testing device                     | each            |
| (for main engine, aux, engine)                     | 1. set          |
| Grinding tool for valve                            | each            |
| (for main engine, aux. engine)                     | 1 set           |
| Deflection gauge<br>(for main engine, aux. engine) | each<br>1 set   |
| Bore gauge (with location gauge)                   | each            |
| (for main engine, aux. engine)                     | 1 set           |
| V - block  | 1 set           |
| Steel straight edge (length 60 cm)                 | <b>1</b>        |
| Steel scale (length 30 cm, 60 cm)                  | each 1          |
| Steel tape measure (length 10 m)                   | 1               |
| Feeler gauge                                       | 3               |
| Divider  | 1               |
| Electric drill (0.4 KW, pistol type)               | 1               |
| Drill for the above (up to 13 mm $\phi$ )          | total 20        |
| Flat file (rough, medium, fine)                    | each 2          |
| Round file ( do. )                                 | each 2          |
| Semi round file ( do. )                            | each 2          |
| Square-file ( do. )                                | each 2          |
| Triangle-shape file ( do. )                        | each 2          |
| Set files (10 pieces)                              | 1               |
| File handle  | 2               |
| Brush for file                                     | 2               |
| Steel hammer (hand)                                | 2               |
| Chipping hammer                                    | 2               |
|  |                 |

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|   |   | n an   | ء<br>123 م<br>122 م |
|---|---|--|---------------------|
| Item  | an sean an ann an an a' an  | Quantity   |                     |
| Test hámmer   | 年9月月,又至2017年4月18月。<br>1   | o étori <b>l</b> testerat  | ) (ð.).             |
| Lead hammer and a straight at                                   | We design set is a  | Source and I there is a  | er Bage             |
|   |   | and the second |                     |
| Wedge (steel, wooden)   |   |  |                     |
| Scaffolding board   |   |  |                     |
| Square lumber for scaffolding                                   | <ul> <li>A second sec<br/>second second sec</li></ul> | 2  |                     |
| Combination pliers  |   | 2<br>each 2 cans   |                     |
| Carborundum (rough, medium, fi                                  |   | each 2 cans  |                     |
| Emery cloth (#60, #120, #400)                                   |   | sheets   |                     |
| Pical (kneading type)   | 医尿道管 医副后角膜的   | 3 cans   |                     |
| Bar (1 m)   | an a  |  | 241.24 <u>3</u>     |
| Grease (300 C° high pressure 2                                  | 5 KG/can)   | 2 cans   |                     |
| Marking needle  | alah di kuma awang<br>Karindana pinah dika  |  |                     |
| Micrometer (inside, outside)                                    |   | each 4   |                     |
| Surface plate (60 cm x 60 cm)<br>(30 cm x 30 cm)                |   | each 1   |                     |
|   | al de la constante<br>Constante de la constante de  |  |                     |
| Adjustable wrench (large, medi                                  |   | 1  |                     |
| Ring spanner (each size)  | an the second second  | total 20   | 4.63                |
| Center punch  |   | inota 3 9  |                     |
| Hand dr111  | kapterki under sige   |  |                     |
| Drill for the above (each size                                  | See The assister St   | tota1 120  | dil Ha<br>Harri     |
| Dies & tap (hand type, metric                                   | thread)   | 1 set  |                     |
| Packing knife   |   | $= (f_1 \cap f_2, g_1) + (f_2)$  |                     |
| Cutting pliers  |   | 2  |                     |
| t turring ninner  |   | 1 <u>4</u> 8   |                     |
| Pliers (flat & round)   | الا عليه الدينية المراجع المراجع<br>المراجع المراجع   | each 1   |                     |
| Blectric soldering iron (with                                   | solder & paste)   | la set   |                     |
| Vice (large, small)   |   | each 1   |                     |
| Torch lamp (small type)   |   | 20   |                     |
| Dry cell $(1.5 V, 0^{-1})$                                      | and the second  | 1  |                     |
| Steel tackle (single sheave, w<br>Wooden tackle (single sheave, | with rope)  | 1 set  |                     |
| Tongs for forging (round and f                                  |   | eách 1   |                     |
| Electric torch (with 2 cells)                                   |   | 2000 (1990 <b>3</b> 1  | :                   |
| Bucket (polyethylene made)                                      |   | 2  |                     |
| Tachometer (hasler type)  | an a  | 2  |                     |
|   |   | <u>I</u>   |                     |

| (AP) (MAR) - APA - | Quantity                     |
|--|------------------------------|
| OS (mic)<br>Rust scraper   | 2.259) - 199 <b>.2</b> 199.2 |
| Thermometer (100°C, 500°C)   | each 6                       |
| Ignision wrench (7 pieces)   |                              |
| Socket wrench (1/4 - 3/4)  | each 1                       |
| Pipe wrench (large, middle, small)   | each 1                       |
| Manila rope (12 mm dia., 16 mm dia.)   | each 100 m                   |
| Wire rope (9 mm dia., 12 mm dia.)  | each 100 m                   |
| Chain block (1 ton, 0.5 ton)   | each 1                       |
| Sand box   | 2                            |
| Belt punch (4, 6, 8, 10, 13, 17, 20, 23, 26 mm)  | each 1                       |
| Chisel (each kind)   | total 100                    |
| Scissors for tin (flat, round & willowech)   | each 1                       |
| Scissors for packing   |                              |
| Hacksaw flame (with one dozen blades)  | 2 sets                       |
| 011 feeder (mouse type)  | 1. 新聞時中 <b>5</b> 10 2 500 11 |
| Oil feeder (trumpet type)  | <b>5</b>                     |
| Turning tool for valve handle  | each 1                       |
| (large, medium, small)   | anab 2                       |
|  | each 2                       |
| 이는 그는 물건을 통하는 것이라. 이는 것이 아주 있는 것이 아주 있  | a maniquina                  |
| Pulley knocker (large, small)  |                              |
| Hydraulic jack   |                              |
|  |                              |
| Vernier calipers<br>Figure punch, the Roman alphabet punch   |                              |
| Three bond (No. 1, No. 2)  | each 1                       |
|  |                              |
| 그는 것 같은 방법에서 흔들 가슴에 가지 않는 것 같은 것 같   | each 1                       |
| Black board  | each 1                       |
| Wooden hammer.   | 2                            |
|  | each 2                       |
| Shackle (12, 18, 22, 30 mm)<br>Small oil can (1 lit, 2 lit)  | each 1                       |
| Flashing tray (large 1, middle 3, small 3)   | 7                            |
| Radio plier  | 1                            |
| Nipper pliers  | 1                            |
| Cutting pliers, electric insulated   | 1                            |
| Folding scale  | 2                            |
|  |                              |

| Item   | na se  | Quantity   |
|--|--|--|
| Spanner (each kind, each size)   |  | total 20   |
| Box spanner (each size)  | - (\$1000), pf00(\$  | total 20   |
| Screwdriver (large, medium, sma  | 11)  | each 1   |
| 011  |  | 2  |
| Masteria dida condar   |  | 1  |
| Wire brugh (Teeth brush type)  |  |  |
| a contraction of the second  | and a state that is a<br>set of the state of t |  |
| Sounding scale (for oil, water)  |  | each 1   |
| Steel wire binded vinyl hose   | terry transformer and transformer and the second  | each 1   |
| (for oil and water)<br>Oil sylinge   |  | A second seco<br>Second second |
| Oil sylinge  |  |  |
| Anvil  | ( the task of  | (1555) 《公長礼/約  |
|  |  |  |
| Bolt & nut, steel plate, zinc p<br>(0.32 mm), steel bar, steel p   | olate  | some   |
| washer, split pin, steel wir   | ej ne datas s  | a Chi da Bashiri 🦂   |
| copper plate, etc. (for repa   | ilrs)<br>(gr.kg proves   |  |
| Shoe mat   | e (each thanks   |  |
| Rubber hose for dusting (10 m,   | 상품 여행은 영향 이번 명한 문제를 가지 않는 것  |  |
| Wing pump  | 1. 《新聞月報告》(新聞集藝)<br>1. 「1.」  |  |
| Oxygen with bottle   |  | -y, st.€1: <b>3</b> , st.t<br>∎  |
| Acetylene with bottle  |  | loote of us  |
| Arc welding rod (3.2 mm, 4 mm)   |  |  |
| Low temperature welding rod (3.  |  |  |
| Gas welding rod (3.2 mm steel)   |  | 10 KG  |
| Do. (3.2 mm brass)   | and the second   |  |
| Glass for welding protector<br>(50 mm x 100 mm, transparent  | one)   |  |
| Do   | and the second   |  |
| (50 mm x 100 mm, dark blue)  |  |  |
| Do.  | 1 A A A A A A A A A A A A A A A A A A A  | 6  |
| (50 mm x 100 mm, light blue)   |  | South Winds  |
|  |  | netinin∰ netoplitetende)<br>an   |
|  |  |  |
| an de Bassan para a cara a cara a cara da cara<br>A cara da cara d |  |  |
| en ja konstanta († 1947), 1949 († 1949)<br>1947 - John Markel, 1949 († 1949)<br>1947 - John Markel, 1949 († 1949)  |  | · · · · ·  |
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| and the sum of the second stations   | e1111年1月1日1日(1943年1月)  |  |

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ed of folder . Trospons CHAPTER 4. BLECTRIC PART of starting production States and the for all the set

4.1 General Description and the second secon

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Electric power distribution system to be as follows, and balance meretine statistic mere ballings almost set as a statistic statistic

|                     |                              | AC 225 V<br>3ø 60 Hz | General power equipments.   |
|---------------------|------------------------------|----------------------|---|
| Main<br>source      | Ship's main<br>generator     | AC 105 V<br>1ø 50 Hz | General lighting, heaters, radio<br>equipments, small appliances,<br>measuring equipments, interior<br>communication equipments, etc. |
| Auxiliary<br>source | Ship's<br>storage<br>battery | DC 24 V              | Emergency lights, interior<br>communication and alarm equipments,<br>etc.   |

| 4.2                   | Electric Source and Transformer.                                      |
|-----------------------|---|
| 9                     | 1. Main generator   |
|                       | AC 225 V 30 60 Hz, 110 KVA 1200 rpm                                   |
| ·<br>·                | Each generator is to be drip-proof and self-excited type              |
| 1 181<br>8 194<br>1 8 | 2. Transformer  |
| al agus               | Primary 225 V/220 V Secondary 105 V                                   |
|                       | 16 60 Hz 20 KVA   |
|                       | Drip-proof, dry and self-cooling type of B class insulation,          |
|                       | Scott connection management with Angle and Strugger Wight and         |
| 4.3                   | Auxiliary Source  |
|                       | Following storage battery and rectifier (for battery charging) to be  |
| ġĒ.                   | provided as auxiliary source.   |
|                       | 1. Storage battery  |
|                       | For emergency lights 24 V 200 AH 1 set                                |
|                       | For radio equipments 24 V 200 AH                                      |
|                       | 2. Silicon rectifier  |
| · .<br>·              | Input AC 220 V 30 60 Hz   |
|                       | Output DC 22 V - 35 V Sufficient current capacity                     |
| :                     | Rectifier to be of full-wave rectification and to have a condensation |
|                       | and rarefaction voltage adjuster,                                     |
|                       | Charging of battery for emergency lights to be float-charging.        |
|                       | Charging and discharging of battery for radio equipments to be con-   |
| - 1 - 2<br>- 4 2      | trolled at the radio switchboard.                                     |
| 4.4                   | Switchboard   |
|                       | 1. Construction   |
|                       | The switchboard to be of self-supported and dead front type and to    |
|                       | consist of print painted steel plate and steel angle, which keeps     |
|                       | electrical good contacts.   |
| •                     | - 45 -  |

Suitable ground terminal to be fitted with framework, which to be grounded perfectly.

Hand rail, panel light (fluorescent light) and emergency light to be provided in front of the switchboard. Insulating material to be of choice goods carried out perfect molatureproof treatment on processing surface.

Floor surrounding the switchboard to be covered with non-skid insulating mat and due consideration for anti-danger to be necessary.

The switchboard to have incoming circuits of main source and auxiliary source. Main generators to be capable of running in parallel at any time easily.

Necessary disconnecting switch, switch, change over switch, push botton switch, etc. and following instruments to be provided in the switchboard. (1) Measuring instrument

Voltmeter (AC and DC) Ammeter (") Wattmeter (AC)

Frequencymeter Synchroscope (meter type with synchronizing lamps)

Others Protective device

(2)

Three (3) poles type air circuit breaker with inverse time trip and instantaneous trip device (more than 2 poles) Reverse power reley

Rectifier with reverse current interrupting device (for preexciting) Cellolite fuse Non-fuse breaker

(3) Watching device
 Each source indicating lamp

Air circuit breaker "ON" "OFF" indicating lamp Earth lamp Charging indicating lamp

Others (4) Emergency light auto-exchanger (with indicating lamp)

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See State Science In the state in

(5) Pre-exciting device

(6) Other necessary device

3. Others

(1) Meters permitted change over using to be capable of change over using after approval.

and the second and been seen as a second

(2), Precision of ammeter and voltmeter to be class 1.5.

4.5 Power Device

1. Motors and accessories for machines to be completely carried out wiring and connection.

2. Starter for motor of automatic operation to have auto-manual change over switch.

. <u>8</u> . 1094

3. Starter and speed controller to have source lamp and ammeter except for special ones.

4. Starter to be auto-starter with source disconnecting switch (manual).
5. Suitable number of spare concents for AC 220 V power device to be

provided at appointed places.

4.6 Lighting Device

1, General lighting

(1) At the suitable points of the lighting wire way, necessary section and distribution box, cable connection box and junction box to be provided, through that cables to each lamps and lighting fixtures to be wired.

(2) Bed light to have a milk-white globe.

(3) Ceiling light in the accommodation space, to be fitted at the ceiling directly.

(4) Lighting fixtures provided at the space exposed to some mechanical damage, such as engine room, steering engine room, store, outer passage, etc., to have protective metal fitting.

(5) Lighting fixtures and accessories provided at the exposed space and high humidity space to be of the water-tight type.
(6) Fluorescent light to be what does not give the inductive inter-

ference to the communication wire way and devices. ) Emergency lights to be combined in the ordinary lights in princi-

- (7) Emergency lights to be combined in the ordinary lights in part pal, but according the fitting space, emergency lights to be provided individually as the ordinary lights after approval.
- (8) Lighting fixtures and concents may be increased within each 5.
- (9) Navigation light indicator panel for navigation lights to be provided in the wheel house.

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- 2. Standard installation lighting to be as follows.
  - Electric service for ceiling lights, desk lights and bed lights to be A.C. 100 V, and for emergency lights to be D.C. 24 V.
     Spare plug sockets to be installed separately as following table, and its capacity to be 105 V - 10 A.

| KindCeiling<br>lightDesk<br>lightBed lightEmergency<br>lightSpare<br>plug<br>socketPlaceWNo.WNo.WNo.   |                 | a wa syntana (a |    | 1-0 ().  |             | t (y y | - Argend | 1.5       | 45 N 1.4-4     | <u>a huanhail</u> | (1)                                    |
|--|-----------------|-----------------|----|----------|-------------|--------|----------|-----------|----------------|-------------------|--|
|  | $\left[\right]$ | Kind            |    | Dç<br>11 | esk<br>Lght | Bed    | light    | Emer<br>1 | rgency<br>Lght | Spare<br>plug     | Remark                                 |
| A second | P               | lace            | WN | W        | No.         | W      | No.      | W         | No.            | socket            | ······································ |

| 1. Room Light           |            | <u>y konto</u>      | 4 L              | s 1 4 g                        |                                | لا بې د د      | 9.54 A.S.            | a an te                              | in in colori                                    | ENER A                                    |
|-------------------------|------------|---------------------|------------------|--------------------------------|--------------------------------|----------------|----------------------|--------------------------------------|---|---|
| Wheel house             | (20)       | 4                   | 60               | 1                              |                                |                | 10                   | <b>1</b> ,                           |   | Desk light to<br>be chart table           |
| egy states of subsets   |            | · · · ·             |                  | a gina gita<br>                | 14 14 17 17 1                  | at Sad         | 9 <u>1</u> (v)       |                                      | an en el sa                                     |   |
| Captain's room          | (20)       | 1 <b>1</b><br>21/21 | 15               | <b>1</b><br>9 - 1963           | (10)<br>4                      |                | than the state       | , Europeiga                          |   | Desk light to<br>be attached<br>on a wall |
| No.2 crew's<br>room     | (20)       | 2                   | 10               | an tite                        | (10)                           | 12             |                      |                                      | 2   | Mirror lamp<br>(15) x 1                   |
| No.3 crew's<br>room     | (15)       | * (* <b>1</b> ./*.  |                  | ₹.₹                            | (10)                           | 2 °            |                      | na ru<br>abrikane                    | trop nich<br>in Éathi                           | · · · ·                                   |
| No.1 crew's<br>room     | (20)       | 3                   |                  |                                | (10)                           | 8              |                      |                                      |   | artedata a.s                              |
| Mess room<br>& Galley   | (20)       | 5                   |                  |                                |                                |                |                      | (glid)                               | 2   | (1)                                       |
| No.1 toilet             | (15)       | 2 <b>1</b> 34       |                  |                                | n et son<br><u>et son</u> t    |                |                      |                                      | stationidae<br><u>esti sesti s</u>              |   |
| No.2 toilet             | (15)       | . <b>1</b>          | · .              |                                | : ; ; ;                        | (Èt)           | d ar i               | < 0.045                              | 11 J.   |   |
| Bo'sn store             | 60         | 2                   | M <sup>1</sup> L | 13 a -                         | , the hope of the              |                | (area)               | and a state                          | 13. C. 中国人                                      | Chest and                                 |
| Provision store         | 40         | each<br>1           |                  | 1161                           | jit € dit                      |                |                      |                                      | yha agy a                                       | <pre>{** /</pre>                          |
| Aft store               | 60         | 2                   |                  | . Exception                    |                                | ga, waa        | a a a a<br>Area - Ar | т.<br>1. А. — 1.                     | 2   |   |
| Steering engine<br>room | (20)       | 2                   |                  | 1977)                          | Mar Égi                        |                |                      |                                      | 1   |   |
| Engine room             | (20)<br>60 | 8<br>               |                  | tana ji ji<br><u>Mali ne</u> z | i deglê li k<br>Rek i ji deglê | :<br>. <u></u> |                      | ati a constant<br><u>a constanta</u> | . +195 <b>2</b> ™<br>-1 <sup>3</sup> arter e st | <u>179</u>                                |
| Engine room             | (20)<br>60 | 2<br>2              |                  | ((; ; ;                        | 49 Å                           | 9. 9A          | 11 1 1 1 1<br>2011   |                                      |   |   |
| Battery room            | (15)       | 1                   |                  |                                |                                |                |                      | n stalster<br>L                      |   |   |
| Companion               | (15)       | 1                   |                  |                                |                                |                |                      |                                      | 1   |   |
| Engine store            | (20)       | 1.                  |                  | 12                             |                                |                |                      |                                      | 1   |   |

 $\mathcal{A}^{(1)}$  , which is the contract of  $\mathcal{A}^{(1)}$  is the formula of  $\mathcal{A}^{(1)}$  , where  $\mathcal{A}^{(2)}$ 

and the second second

| Kind                               | Gene<br>11gh |           | Emer<br>11g | gency<br>ght | Remark  |  |
|------------------------------------|--------------|-----------|-------------|--------------|---|--|
| Places for solveder of the last in | West No.     |           | W No.       |              | Remain Restored   |  |
| 2, Outside Light                   | يه کرفن ،    |           | en par      | la polici (  | n ta an an ann an tha tha an  |  |
| Fore wall of wheel house           | 60           | 1         | 10          | 1            | n Maxim Excellence yet in the particular  |  |
| Side wall of wheel house           | 60           | each<br>1 | 10          | each<br>1    | n de través de la calencia de la ca<br>En calencia de la cale  |  |
| Aft wall of wheel house            | 60           | 1         | 10          | 1            | de le formente p  |  |
| Side wall of deck house            | 60           | each<br>2 | 10          | each<br>2    | an an an an an an Arthread an Arthread<br>Arthread an Arthread an Arthr |  |
| Aft wall of deck house             | 60           | . 1       | 10          | <b>1</b>     |   |  |
| Aft wall of companion              | 60           | 1.        | 10          | 1            |   |  |

Working Light the public sector is the sector in the sector is the sector

| Search light      | 2,000 | <b>1</b> | : |            |   |
|-------------------|-------|----------|---|------------|---|
| Working light     | 500,  | 6        |   |            |   |
| 4. Portable Light |       |          |   | East and a | an an an an an Araba an Araba.<br>An an Araba an Ar <del>aba</del><br>An Araba an Ar <del>aba</del> |

| 4.     | Portable | Light |    |                |  |                          |
|--------|----------|-------|----|----------------|--|--------------------------|
| Deck p | art      |       | 60 | · · · 3, · · · |  | With captire cord (10 m) |
| Engine | part     |       | 60 | 2 .            |  | With captire cord (10 m) |

5. Others and a second se

| Navigation light              | 40    | 1 set     |  |   | a de la companya de l |
|-------------------------------|-------|-----------|--|---|---|
| Anchoring light               |       |           | 40   | 1 |   |
| Fishing light                 |       | 1 set     |  |   |   |
| Magnetic compass              | 10    | each<br>1 | 1945 - 1<br>1945 - 1945 - 1945<br>1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1<br>1947 - | - |   |
| Fishing lamp<br>(above water) | 1,000 | 1         |  |   |   |
| Fishing lamp<br>(under water) | 1,500 | 2         |  |   |   |

Note: ( ) mark to indicate fluorescent light. Others to indicate incandescent light.

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|--|--|--|---|--|
| and the second state of th   |  |  |   |  |
| Inboard electric wire a  | nd plug sockets  | to be fitte  | d with marks  | at suitable  |
| position, to discrimina  | te easily A.C. o   | r D.C. and   | kind of volt  | <b>889</b> , 5   |
| 4.8 Spare Parts of Electric  | Part   | al de la companya de<br>El companya de la comp | esta an data<br>enni techti )   | adagad ghilisin<br>Gillisi aroʻi   |
| 1. Spare parts of gene   | rator, (with excl  | ter), elect  | ric motor, p  | tarter and   |
| switch board to be   | supplied in acco   | rdance with  | manufacture   | r's supplying  |
| standard.  |  |  |   | HI LLAN TA   |
| 2. Five spare electric   | light bulbs to   | be supplied  | l for each ca   | ndle power.  |
| One search light bu  | 1b and two work1   | ng light bu  | 1bs and thre  | e fishing  |
| lamp bulbs to be su  | pplied for spare   | respective   | 1 <b>y</b> .  |  |
| 3. Each kind of fuse to  | o be supplied in   | suitable r   | umber.  |  |
| 4.9 Supplementary Outfit of  | Electric Part  |  | ار با این میکند.<br>این از این میکند این از این از<br>این میکند که به میکند.  |  |
| 1. D.C. 500 V megger   |  | talia) in a file<br>Conversit  | 1   |  |
| 2. Universal tester  |  |  | (1) 1. (4.1) The state of the state   |  |
| 3. Grease pump   |  |  | -1  |  |
| 4. Tools for repair and  | d overhaul   |  | <b>1</b> 8  | the second s   |
| $ \frac{1}{2} \left[ \frac{1}{2} $ | an a   | a an   |   | CARE HONE  |
| n 1997 - The State of the State   |  |  |   | ring ballang   |
| [1] S. Markatan, J. M. & Akaran, M. Yung, K. Shang, S. S. Katana, "A strain frequency of the strain of the stra  |  |  | و<br>مود افروسیایا مید مید در است میداند.<br>و محمد افروسیایا مید میداند.   |  |
|  |  |  |   | · 利利·  |
|  | an an an an Araba an an Araba an Araba an Araba.<br>An an an an Araba an Araba an Araba an Araba an Araba an Araba<br>Araba an Araba an Araba an Araba an Araba an Araba | ON CONTRACTOR  | والمراجعة والمحمد المحافظ مراجعات   | uotinglysk   |
|  |  |  | والمستحمد والأناؤك والأو  | ing angly mich   |
|  | 되는 것 같은 것 같  |  | للمرتبع المعتم المراجع والمراجع   | ett gildets  |
|  |  |  | والمباد الرجيب والمجاد الرابات  |  |
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|  | letti mainerandik  | 可能的能力。   |   | 1930년  |
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| a di serie de la construcción de l<br>De la construcción de la construcción  |  |  |   |  |
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|  |  |  |   |  |

CHAPTER 5. MISCELLANEOUS TESTS AND PLANS

- CHARLEN AND AND THE PART OF manifimmet. Forwardingh . . 1
- 5.1 Miscellaneous Testanni, budardin hum anotreation, diversality About principle machines and equipments described in this specification, shop tests to be carried out, and if necessary, supervisors to
  - be present at shop tests.
  - 2. Final Tests your are reaching and the management After completion, in the presence of supervisors, following official trials and performance tests to be carried out.
- Builders to supply all articles consumed at tests; fuel oil, lubri
  - cating oil and so on. The more encouraged and and
    - (a) Between mile posts, progressive speed trials at 1/4, 2/4,
- the state of the s be carried out, and during these periods, followings to be
  - carried out besides speed measuring.
  - Temperature and pressure of each kind of oil, sea water, air, gas, Revolution of engine, Fuel oil consumption, Torsional
  - vibration:
- , उन्नर्वतन्त्र देवरा द्वारा है । से देव other the trials, following tests to be carried out timely. wy mainess Some main and test, Steering test, Anchor test, Main engine starting test, Inertia test, Go-ahead, and go-stern test, Clutch
  - test, Hull vibration and noise measurement, Main engine reblow weth to make control test, Governer test, Others appointed.
    - (2) Performance Tests
      - After completion, following tests to be carried out
    - (a) Hull Part . Subjust state to subgustion and Inclining test, Rolling test, Navigation and measuring instrument test, Communication and signalling test, Ventilating
    - oviny minimizest, Fishing gear test, Radio apparatus test, Galley equipment test, Deck machinery test, Lighting test, Air condition
      - ing test, Fish hold cooling test, Others appointed.
      - (b) Machinery Part and Electric Part
  - estadd 1945 ( Statesti galant Generator test, Refrigerating plant test, Electric apparatus test, Pumps (piping) test, Distilling plant test, Others appointed.
    - (c) Others appointed by supervisors.

- 5.2 Approval Drawings and Final Drawings
  - 1. Approval Drawings as a complete and the second states of the second states and the second states are second states and the second states are second state
    - In line with specifications and attached plans, following approval

drawings to be submitted to supervisors for approval and to be returned to builder with supervisors' signature of approval before

laying down. (1) General

> General arrangement, Lines, Hydrostatic curves, Weight & CG calculation, Cross curves, Stability calculation, Stability curves, Free board calculation, Gross tonnage calculation, Assumed power calculation (Propeller calculation), Capacity plan, Principal particulars of hull, machinery & electric part, List of makers & type of main equipments, Methods of tests, Schedule. Hull Part

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Midship section, Shell expansion, Construction profile & plans. Hull strength calculation,

Construction of engine bed,

Construction of rudder, Construction of stern frame, Block plan of hull construction,

Deck outfitting arrangement, Wheel house arrangement, Accommodation plan, Deck piping diagram, Navigation meter plan, Radio equipment arrangement, Measuring equipment plan, Deck machinery, Air conditioning arrangement, Fishing gear plan, Mast plan, Painting scheme, Anticorrosion plan, Ventilation arrangement, Fishing apparatus arrangement, Insulation plan of fish hold, Inventory.

(3) Machinery Part

Engine room arrangement, Main engine, Shafting & propeller, Auxiliary engine, Pumps, Air compressor & reservoirs, Piping diagram in engine room, Main engine remote control system, Torsional vibration calculation of main engine, Bottom valve plan, Cooling system, Distilling plant, Inventory.

(4) Electric Part

Switchboard, Generator & main motors, One line diagram of electric power system, Electric load analysis table, Electric equipment arrangement.

(5) Others

Other appointed by supervisors.

## 2. Final drawings

Final drawings to be the said approval drawings and followings. Finished principal particulars, Results of miscellaneous tests, Instruction book of principal apparatus (in English), Inventory, Docking plan, Framed color photo (ones of this vessel sailing, quater size, 5 sheets), Color photograph noted principal particulars (300 sheets, postal size)

3. The number of approval drawings and final drawings to be decided according to understanding.

## 5.3 Appendix

- 1. Doubt occurring about this specification and drawings to be decided upon deliberation with supervisors.
- 2. Purchase of principal machines, apparatus, etc. to be deliberated with supervisors beforehand.
- 3. Change of general arrangement owing to purchased machines, apparatus, etc. to be deliberated with supervisors.
- 4. Grade of miscellaneous machines, apparatus, cloth, etc. to be deliberated with supervisors.
- 5. Double described item and note in this specifications to be decided in accordance with the principal article.
- 6. The small items about size and arrangement described in this specification to be changed with supervisors approval, if they were admitted not to spoil necessary performance of this vessel.

(End)

