

NCR-330

NAVTEX RECEIVER

**INSTRUCTION
MANUAL**

PREFACE

Thank you for purchasing the NCR-330 JRC NAVTEX Receiver.

The NAVTEX receiver automatically receives and prints out NAVTEX service broadcasts supplied in English.



- Before using the receiver, carefully read this INSTRUCTION MANUAL so as to fully understand the proper usage and handling.
- Keep the INSTRUCTION MANUAL in an appropriate place so that you can readily refer to it when necessary.
- If you are uncertain about any operations of the receiver or encounter any problems during operation, refer to this manual. You will find solutions to common problems and useful hints and suggestions.

BEFORE OPERATION

Alert Symbols

A number of alert symbols are used in this manual and labeled on the product itself to ensure safe and proper usage, and to prevent possible injury to you or others and to avoid possible property damage during operation or maintenance. Some of these alert symbols and their meanings are shown below.

Please understand them before reading this manual:

	WARNING	Indicates a situation that could result in death or serious personal injury if ignored or if the product is mishandled.
	CAUTION	Indicates a situation that could result in personal injury and/or property damage if ignored or if the product is mishandled.

Examples of alert symbols



The triangular symbol (\triangle) means “caution” (danger and/or other warning). The specific type of hazard (not specified in this example) is depicted in the warning box.



This symbol signifies an action that is prohibited. The specific type of prohibited action (in this example, disassembly) is depicted in or near the symbol.



This symbol signifies a required action. The specific type of required action (in this example, removing the power plug from the outlet) is depicted in the symbol.

OPERATING PRECAUTIONS



WARNING



Do not place heavy objects on the receiver. Failure to observe this warning could result in the unit becoming unbalanced and thus causing injury if it falls.



Do not place heavy objects on the power cable or the antenna cable. Failure to observe this warning could result in fire, electrical shock, malfunction, and/or receiver signal deterioration.



Do not operate at voltages other than 10.8 - 35.0 VDC. Failure to observe this warning could result in fire, electrical shock, and/or malfunction.



If an unusual smell, smoke, or other abnormality is detected, immediately turn off the power to the receiver and then turn off the power on the power distribution panel of the vessel. After confirming that the unusual smell, smoke, or other abnormality has cleared up, consult your dealer or nearest JRC service/sales representative for repair. Using the receiver in such situation may cause fire and/or electrical shock.

OPERATING PRECAUTIONS



CAUTION



Do not place the receiver on an unstable surface. If placed on an unstable table or an uneven surface, it could fall and result in personal injury and/or damage or malfunction of the unit.

Fix the receiver steadily using the supplied screws.



Do not expose to water or moisture. Placement on exposed decks or in humid places may cause electrical shock or malfunction.



Do not open or remove the cover of the receiver. Touching the parts inside could result in electrical shock. If it is absolutely necessary to check the inside of the receiver for maintenance, turn off the power of the power distribution panel.



Avoid exposure to direct sunlight, heat, moisture, and dust. Failure to do so may cause fire, malfunction, and/or deterioration of print-out quality.



Always use the JRC-recommended printer paper. The use of any other paper may cause printer trouble and/or deterioration of print-out quality.



When cleaning, do not use benzene, alcohol, thinner, or other volatile solvents. The coated surface may deteriorate or be damaged. Wipe the surface lightly with a soft cloth.

AFTER UNPACKING

After unpacking, make sure that the following components and accessories are all present.

If any components or accessories are missing, please contact your dealer or the nearest JRC sales.

NCR-330 NAVTEX Receiver		
Component	Model/Part Number	Quantity
NAVTEX receiver unit	NCR-330	1
Mounting screws	MPTG02024A	4
Printer paper	H-7ZPJD0044	1
Instruction manual	H-7ZPJD0067	1
Operating card	H-7ZPJD0069	1
Spare fuse	H-6ZXAF00021	1
Ship Registration Form	H-7ZPJD0065	1

NAW-330 NAVTEX Antenna		
Component	Model/Part Number	Quantity
Antenna coupler	NAW-330	1
Whip antenna	CODE315	1
Plain washer	BRTG00404	1
Spring lock washer	BRTG00402	1
Spacer	MTV002473	1
Fitting bands	MPBP30274	2
Self bonding tape	9645	1

AFTER INSTALLATION

After completing the installation, please fill out the enclosed Ship Registration Form and return it to the following address by facsimile:

Marine Service Department, Japan Radio Co., Ltd.

17-8, Osaki 1-chome, Shinagawa-ku, Tokyo, JAPAN 141-0032

Facsimile No. +81-33-492-2777

EQUIPMENT APPEARANCE



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GLOSSARY

(1) **NAVTEX Broadcasts**

Maritime safety information that consists of navigational warning, meteorological warning, and search and rescue information broadcast from coastal stations at a frequency of 518 kHz.

Alpha-numeric characters are broadcast narrow-band direct printing telegraphy in accordance with predetermined transmission schedules.

These broadcasts cover a range of 400 nautical miles from coasts.

(2) **Ground Meter, Ground Lamp**

A meter or a lamp for indication of insulation between ground line and DC power source in the vessel.

(3) **Total Navigator (ECDIS)**

Electronic chart system for navigational surveillance.

(4) **Integrated Radio Communications System (IRCS) for Vessels**

A system that connects GMDSS (Global Marine Disaster Safety System) equipment to a digital interface network and provides integrated communications management using a GMDSS workstation.

CHAPTER 1

EQUIPMENT OVERVIEW

1.1 FUNCTIONS

- The receiver (usually referred to as the equipment in this manual) executes the NAVTEX function that automatically receives and prints out NAVTEX service broadcasts supplied in English.
- The NAVTEX function receives and prints out the various types of information broadcast at a frequency of 518 kHz, such as: navigational warning, meteorological warning, search and rescue information, and other types of information. The equipment also provides a method of programming so that you can select the type of information to be received and from which coast station to receive it.

1.2 FEATURES

- Receiving NAVTEX broadcasts
The equipment receives NAVTEX broadcasts automatically.
- Reduced consumption of printer paper
Since the equipment has the capability of storing up to 128 message identification codes in memory for up to 72 hours, duplicate printing of messages is avoided.
- Permanent storage of data settings
Once the types of messages to be received and their coast stations have been set, these settings are automatically stored into the internal memory (EEPROM) of the equipment. The data, therefore, does not require re-setting, even after power has been turned off.
- High reliability based on digital demodulation
JRC's unique digital demodulation circuit ensures high reliability.
- Dual voltage supply input
The equipment can be used on either 24-VDC vessels or those with 12-VDC.
- Self-diagnostics
The equipment contains self-diagnostic tools, making it easy to service.
- Connection to external equipment
The equipment can be used in conjunction with Integrated Radio Communications System (IRCS) for vessels and the Total Navigator (ECDIS).

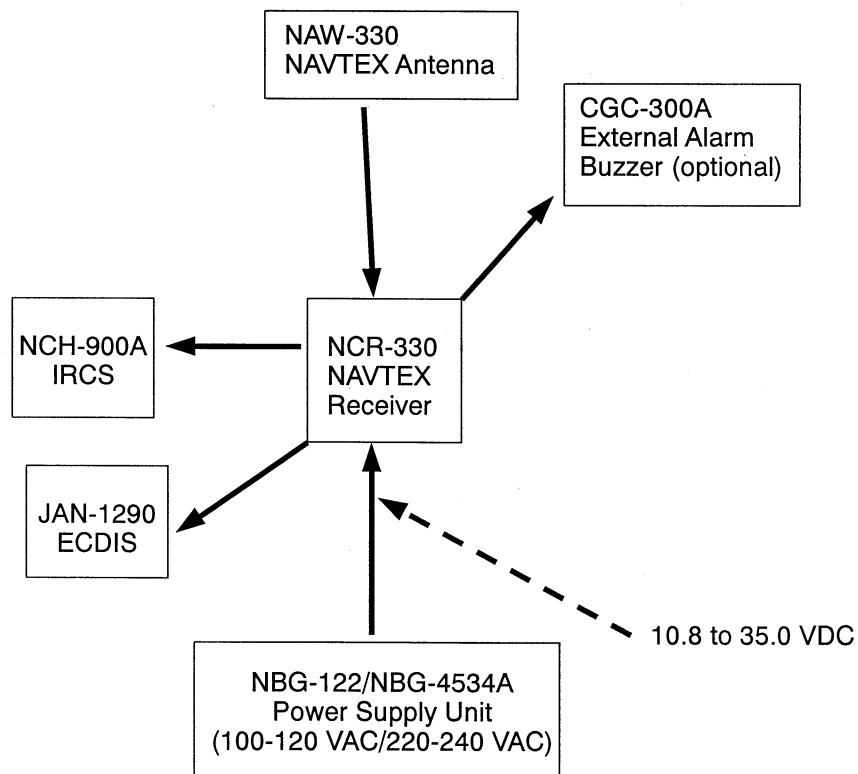
1.3 CONFIGURATION

The equipment consists of a main unit (NCR-330) and an antenna (NAW-330).

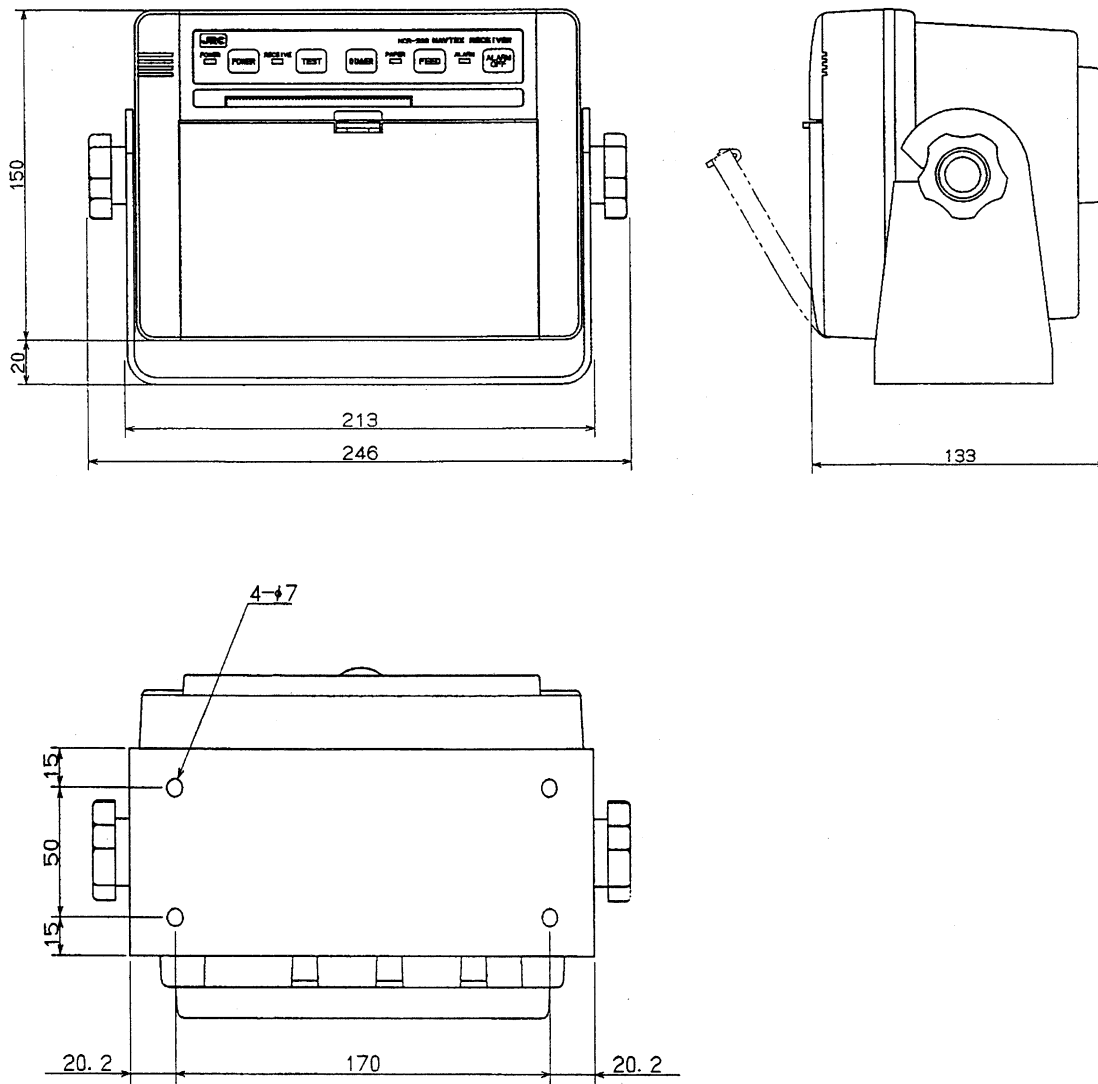
Although it operates on DC power, operation on AC power is also possible with an optional power supply unit (NBG-4534A or NBG-122). Also, an external alarm buzzer can be attached so that the alarm can be heard at remote locations when search-and-rescue information is received through NAVTEX broadcasts.

In addition, it can be used in conjunction with the Integrated Radio Communications System (IRCS) for vessels and the Total Navigator (ECDIS).

The overall configuration of the equipment, including major peripherals, is shown below.

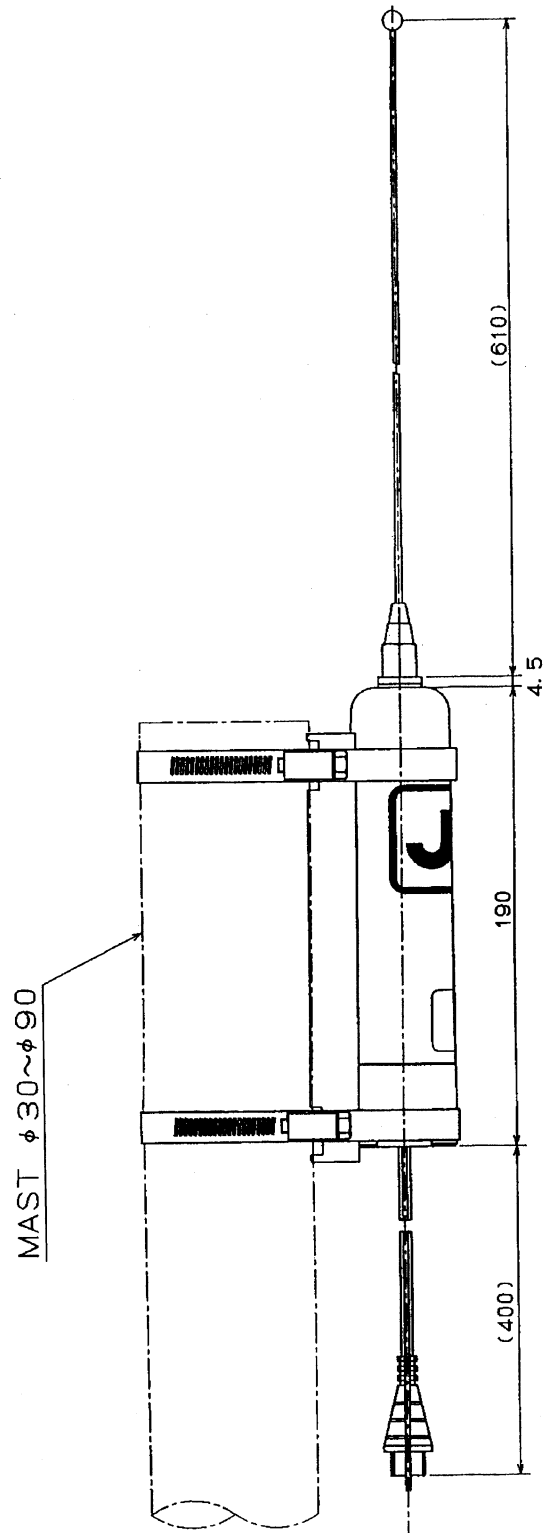


1.4 STRUCTURE



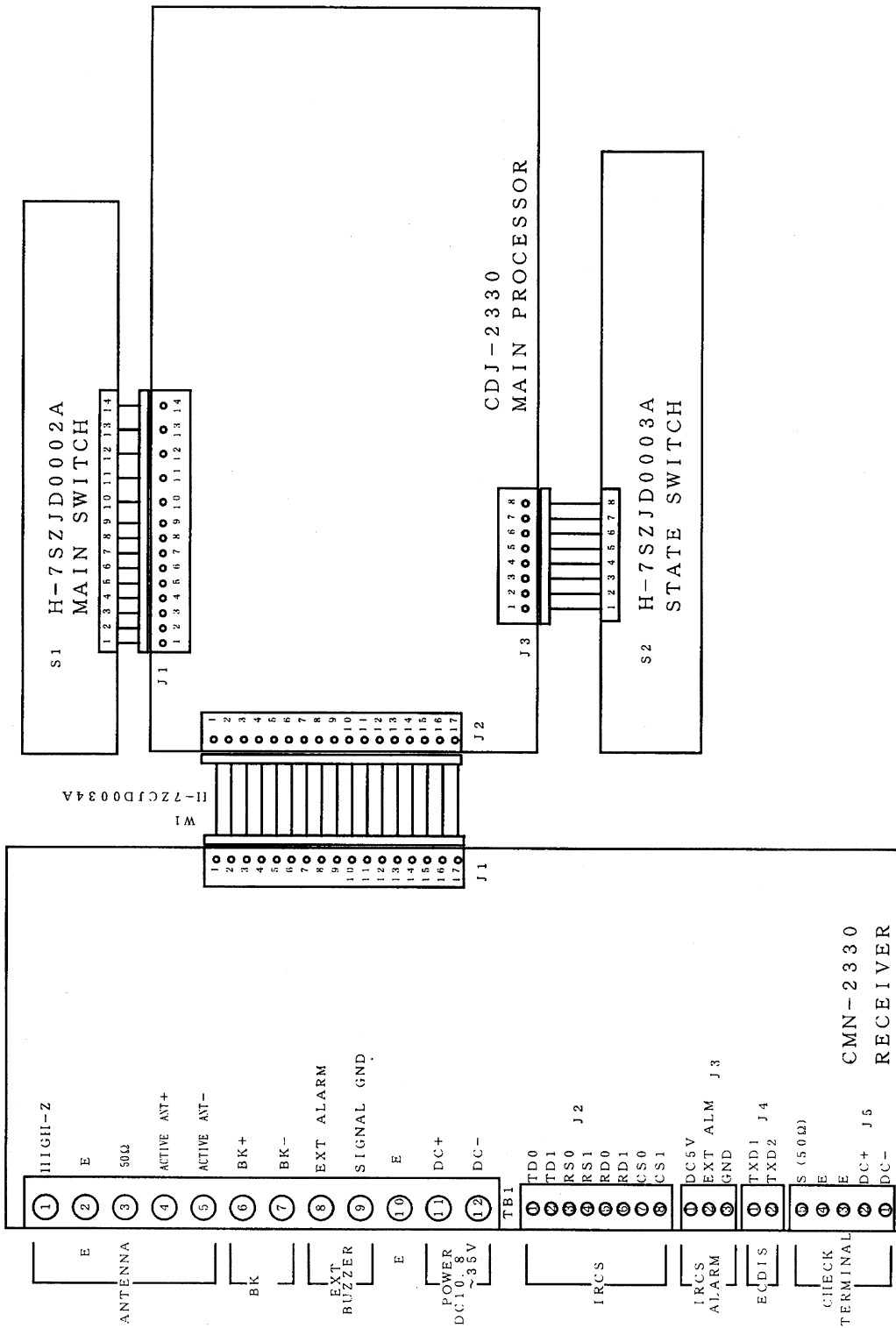
(Unit: mm)

External diagram of the NCR-330 NAVTEX Receiver

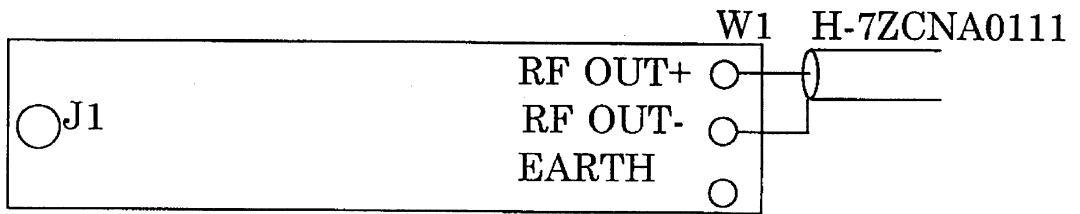


External diagram of the NAW-330 NAVTEX Antenna

1.5 OVERALL FLOW CHART DIAGRAM



Overall Flow Chart Diagram of the NCR-330 NAVTEX Receiver



CFG-2330 ANTENNA COUPLER

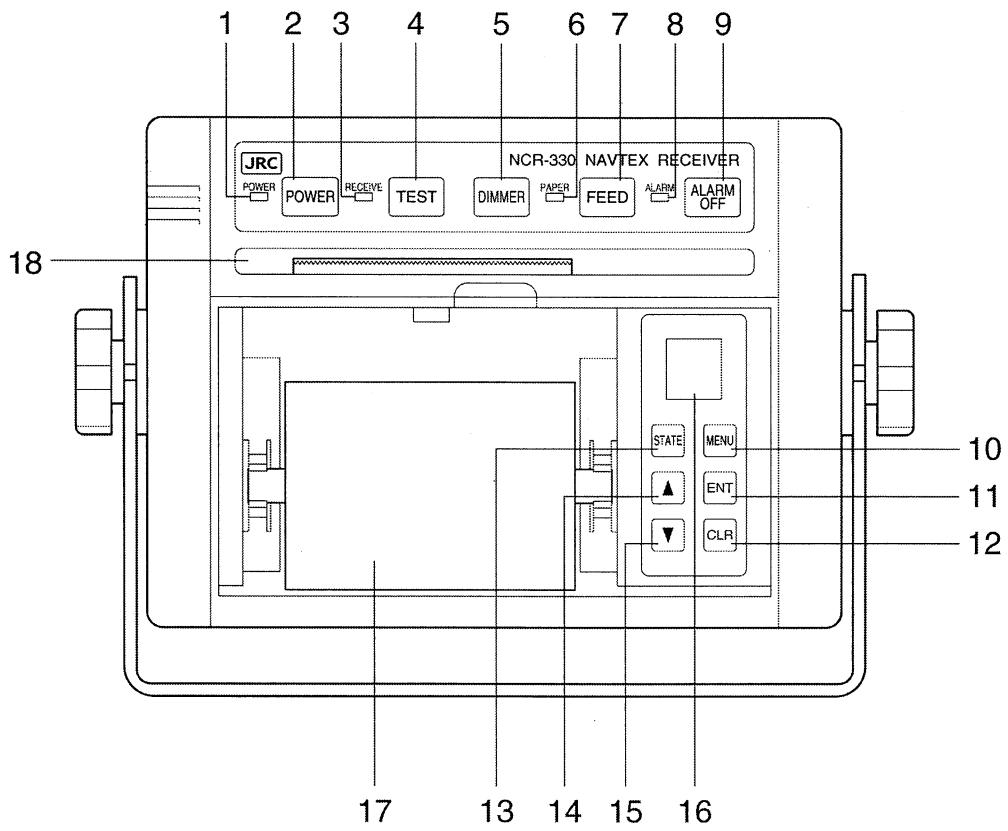
Overall Flow Chart Diagram of the NAW-330 NAVTEX Antenna

CHAPTER 2

NAMES AND FUNCTIONS OF COMPONENTS

2.1 FRONT PANEL

View of equipment with printer paper storage cover opened:



- 1: **POWER lamp**
Pressing the POWER switch activates the green POWER lamp to indicate that the power has been turned on.
- 2: **POWER switch**
Turns the receiver on and off.
- 3: **RECEIVE lamp**
This lamp turns on during signal detection and blinks during message text receiving.
- 4: **TEST switch**
Activates the receiver's self-diagnostic function.
- 5: **DIMMER switch**
Adjusts the brightness of the status lamps.
Each time the switch is pressed, the brightness changes.
This switch, however, does not change the brightness of the **PAPER** and **ALARM** lamps described below.
- 6: **PAPER lamp**
This orange lamp blinks to indicate that the equipment has run short of printer paper.
- 7: **FEED switch**
Pressing this switch feeds printer paper from the printer.
Paper is fed, line by line, with each press of the switch. Pressing and holding it down feeds the paper continuously.
- 8: **ALARM lamp**
This red lamp blinks to indicate that an alert message is being received.
- 9: **ALARM OFF switch**
This switch turns off the alarm that indicates that the equipment is receiving an alert message(s) or running short of printer paper.

10: MENU switch

This switch starts/stops receiver status setting mode.

Pressing the MENU switch allows you to set the receiver status to select the coast station and message type in accordance to the operational instructions printed by the printer.

Press the switch again to end the setting operations.

11: ENT (enter) switch

Sets the receiver status for selection of the coast station and message type. To select the setting, press this switch in accordance to the operational instructions printed by the printer.

12: CLR (clear) switch

Clears the current receiver status setting of coast station/message type. To de-select a setting, press the switch in accordance to the operational instructions printed by the printer.

13: STATE switch

Pressing this switch prints out the currently set receiver status settings.

14: ▲ switch

Chooses coast station and message type status in ascending alphabetical order.

15: ▼ switch

Chooses coast station and message type status in descending alphabetical order.

16: Symbol Alphabet indicator

Indicates selected coast station and message type. The dot at the bottom right of the display turns on while selected station is receiving mode.

INDICATOR													
ALPHABET	A	B	C	D	E	F	G	H	I	J	K	L	M
INDICATOR													
ALPHABET	N	O	P	Q	R	S	T	U	V	W	X	Y	Z

17: Printer paper

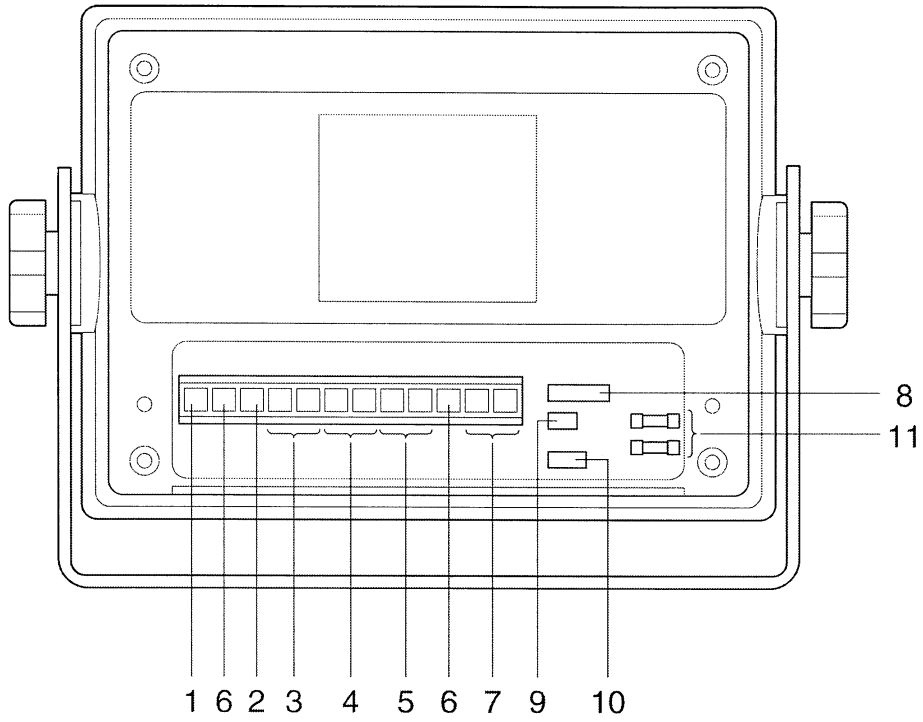
Messages are printed out on paper. When the paper runs short, a red line will appear at both edges of the paper.

18: Printer

This unit prints out messages.

2.2 REAR PANEL

View of the equipment with rear cover removed:



- 1: High-impedance antenna terminal (HIGH-Z ANT)**
Connect a wire antenna cable to this terminal.
- 2: 50-ohm antenna terminal (50OHM ANT)**
Connect a wide-band antenna cable to this terminal.
- 3: NAVTEX antenna terminal (ACTIVE ANT)**
Connect the antenna cable of NAW-330 Active Antenna to this terminal.
- 4: Key line terminals (BK+/BK-)**
If needed, connect the key lines leading from the transmitter to be used to these terminals.
- 5: External alarm buzzer terminals (EXT.ALARM/SIGNAL.GND)**
If needed, connect an optional CGC-300A buzzer to these terminals.
- 6: Grounding terminal (EARTH)**
This terminal is for electrical grounding to the vessel.
- 7: Power terminals (DC+/DC-)**
Connect the power supply to these terminals.
The voltage range of the power supply is from 10.8 to 35.0 VDC.
- 8: IRCS data input/output connector (IRCS)**
This connector sends received messages to the Integrated Radio Communications System (IRCS) for vessels and allows the NAVTEX Receiver to be set and controlled from the IRCS. Input and output are of the current-loop specifications. The data format complies with the JRC commands.
- 9: ECDIS data output connector (ECDIS)**
This connector sends received messages to the Total Navigator (ECDIS). Output is of the RS-422A specifications. The data format complies with the JRC commands.
- 10: Test terminals**
These terminals are for in-factory testing only.
- 11: Fuses**
A pre-arcing fuse rated at 3.15 A is connected to each the DC(+) and DC(-) lines.

CHAPTER 3

INSTALLATION



WARNING



Never carry out the receiver installation by a user.

Ask your nearest branch, business office or a dealer for inspection and repair.

3.1 FASTENING THE RECEIVER

3.1.1 Site selection

The receiver is designed so that it can be installed on either a desk, a wall, or the ceiling of the vessel. Select an installation location that satisfies the criteria listed on the following page.



WARNING



Do not place the receiver on an unstable surface. If placed on an unstable table or an uneven surface, it could fall and result in personal injury and/or damage or malfunction of the receiver.



Do not place heavy objects on the receiver. Failure to observe this warning could result in the unit becoming unbalanced and thus causing injury if it falls.



Do not place heavy objects on the power cable or the antenna cable. Failure to observe this warning could result in fire, electrical shock, malfunction, and/or receiver signal deterioration.



Do not expose to water or moisture. Placement on exposed decks or in humid places may cause electrical shock or malfunction.



CAUTION



Avoid exposure to direct sunlight, heat, moisture, and dust. Failure to do so may cause fire, malfunction, and/or deterioration of print-out quality.

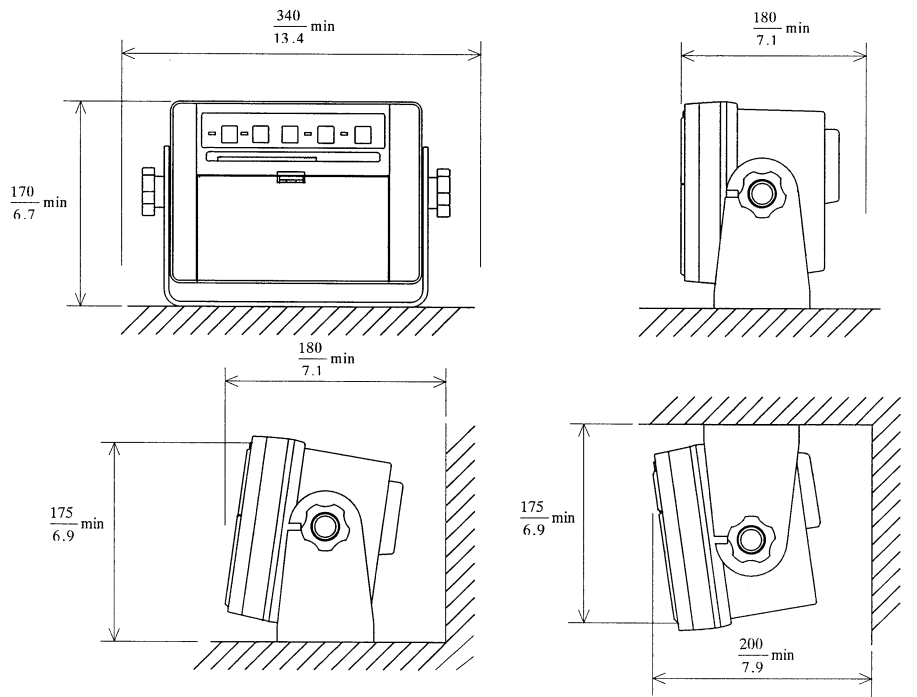


Avoid routing the antenna cable near other cables such as power cable, transmission antenna cables, or radar waveguides. Close proximity to such cables could cause interference (electronic “noise”) whereby the signal to the receiver may deteriorate.

Criteria for site selection

- (a) The distance from the magnetic compass should be at least 1 meter.
- (b) The length of the grounding wire should be minimized.
- (c) The installation location should be as free as possible from direct sunlight.
- (d) The installation location should also be: free from excessive heat, moisture, and vibration; in case of installation on the ceiling, free from the stagnant heat as well as the above, and; in case of installation near a window, free from salt water spray as well as the above.
- (e) The clearances as shown in the figure below should be confirmed.

The antenna cable, power cable, and grounding wire should be routed so as not to be in close proximity with transmitter, radar, and other sources of electronic noise, as well as the cables of these external units.



(Unit: $\frac{\text{mm}}{\text{inch}}$)

Fig. 3-1 Space required for receiver installation

3.1.2 Installation procedure

The following are the procedures for installing the receiver:

- (1) Loosen the knobs of the receiver and remove it from the mounting base.
- (2) Screw down the mounting base at the desired location.
- (3) Remount the receiver onto the mounting base and then tighten the knobs to lock the receiver in place.

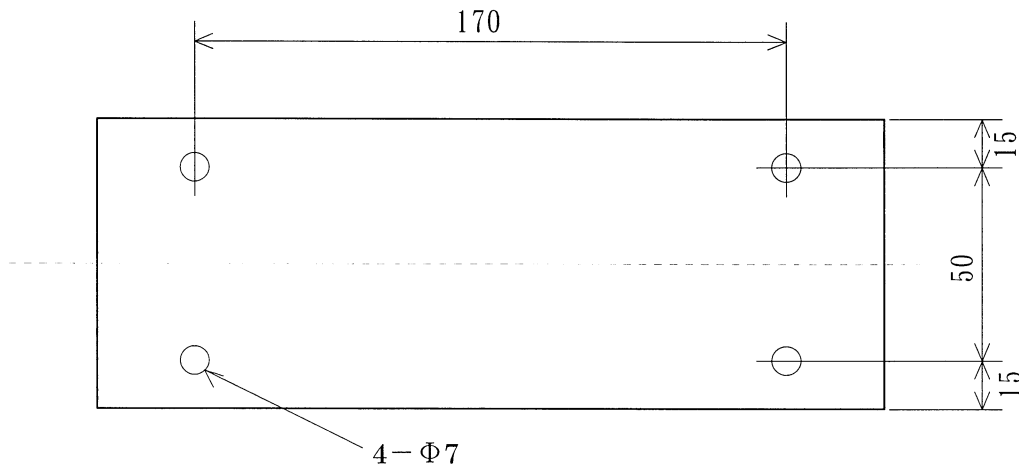










Fig. 3-2 Mounting dimensions

3.2 FASTENING THE ANTENNA

3.2.1 Site selection

Select an installation location that satisfies the criteria listed on the following page.

 WARNING	
	The connectors of the antenna cable and the case mounting section of the whip antenna must be waterproofed. Failure to do so could cause fire, electrical shock, and/or deterioration of the signal to the receiver due to moisture or faulty electrical contact.
	Keep the whip antenna away from any obstructions within a radius of 1 meter. Failure to do so could cause injury due to contact with human body. Antenna damage might result from possible contact with the human body or obstructions.

 CAUTION	
	Avoid bundling the antenna of the NAW-330 together with any other antennas. Failure to observe this caution may cause deterioration of the signal to the receiver due to noise radiated from other antennas. Further, noise radiated from the antenna of the NAW-330 could cause signal deterioration to other equipment.
	Avoid routing the antenna cable near other cables such as power cable, transmission antenna cables, or radar waveguides. Noise induced to the antenna cable could deteriorate the receiver signal.
	Do not install the whip antenna in a place exposed to strong vibration. Antenna damage could result.
	The connectors of the antenna cable must be waterproofed. Further, the antenna connectors of the NAW-330 float from the ship earth could cause turn on the ground lamps due to contact with the ship ground use battery power source.

Criteria for antenna site

- (a) Using a pole up to 9 cm in diameter and resistant to hull vibration
If the antenna is to be mounted using a pole such as a handrail, reinforce the pole by providing stays so that the antenna can maintain its initial anti-vibration characteristics.
- (b) There should be no obstructions within a radius of 1 meter of the installation location. The presence of any obstructions may bring the whip antenna into contact with them if it is swung significantly by the wind.
- (c) The installation location should enable the antenna to be completely waterproofed.
- (d) The installation location should be sufficiently distanced from the antenna of the transmitter.

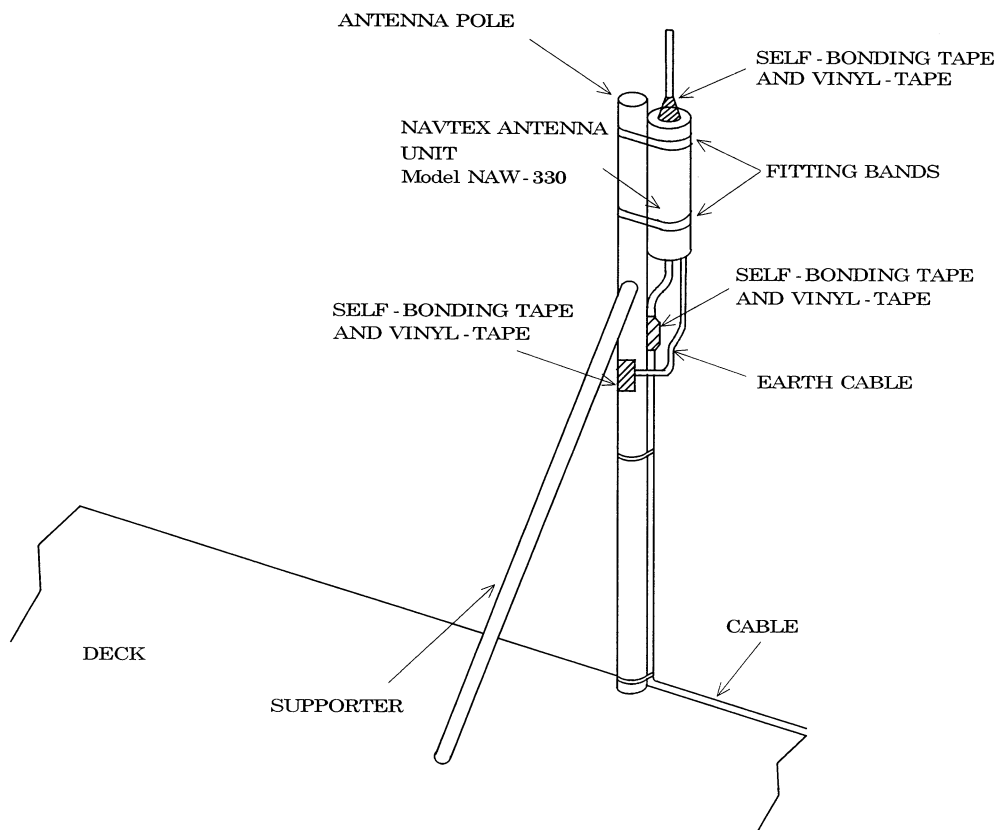


Fig. 3-3 Antenna installation location

3.2.2 Installation procedure

The following are the procedures for installing the antenna:

- (1) Thread the antenna element into the antenna coupler via the supplied plain washer and spring lock washer, and tighten securely with a wrench.
- (2) Fix the antenna coupler securely to the mast or perpendicular pole of the vessel using the supplied coupler spacer and mounting bands. The maximum diameter for the pole is 9 cm.
- (3) Connect the antenna cable connector and the receiver cable connector.
- (4) Wind the self-bonding tape or an equivalent waterproofing tape around the following sections:
 - ① Connectors
 - ② Whip antenna mounting case

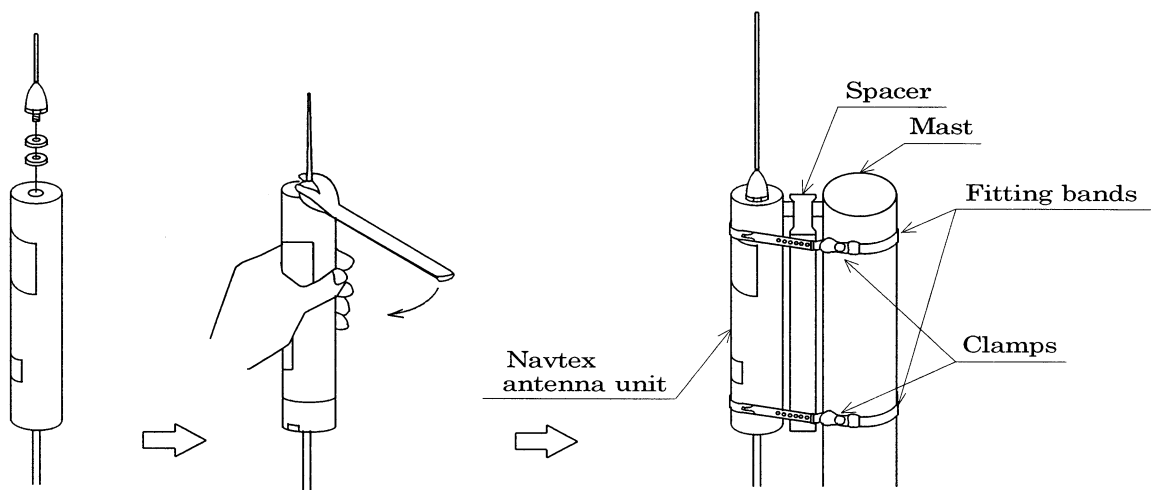


Fig. 3-4 Antenna installation

3.3 EQUIPMENT COMPONENT CONNECTION

Depending on whether the built-in or optional power unit is to be used, connect the equipment components correctly as shown in one of the following figures:

3.3.1 When the power unit is to be used

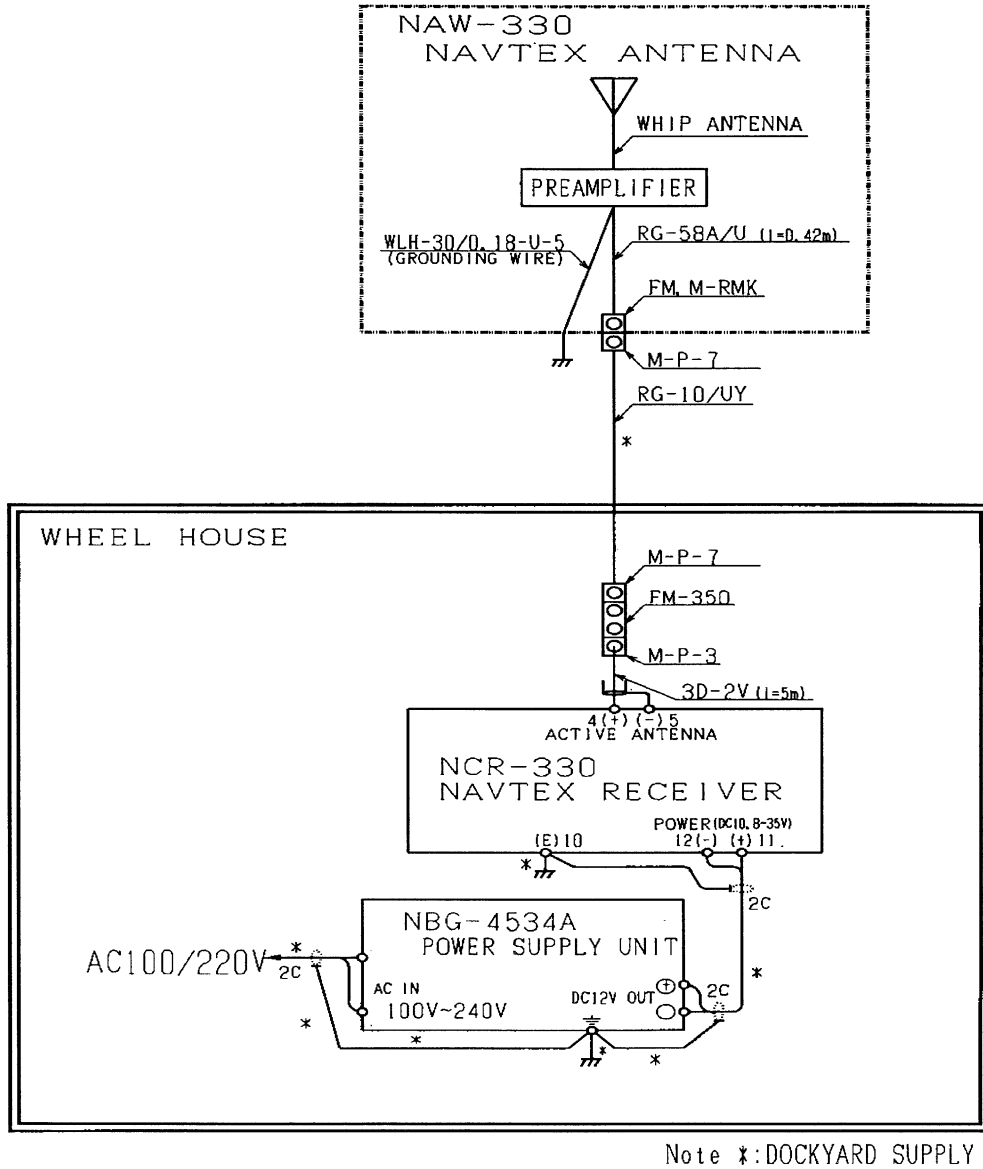


Fig. 3-5-1 Component connection diagram - Only when the power unit is to be used

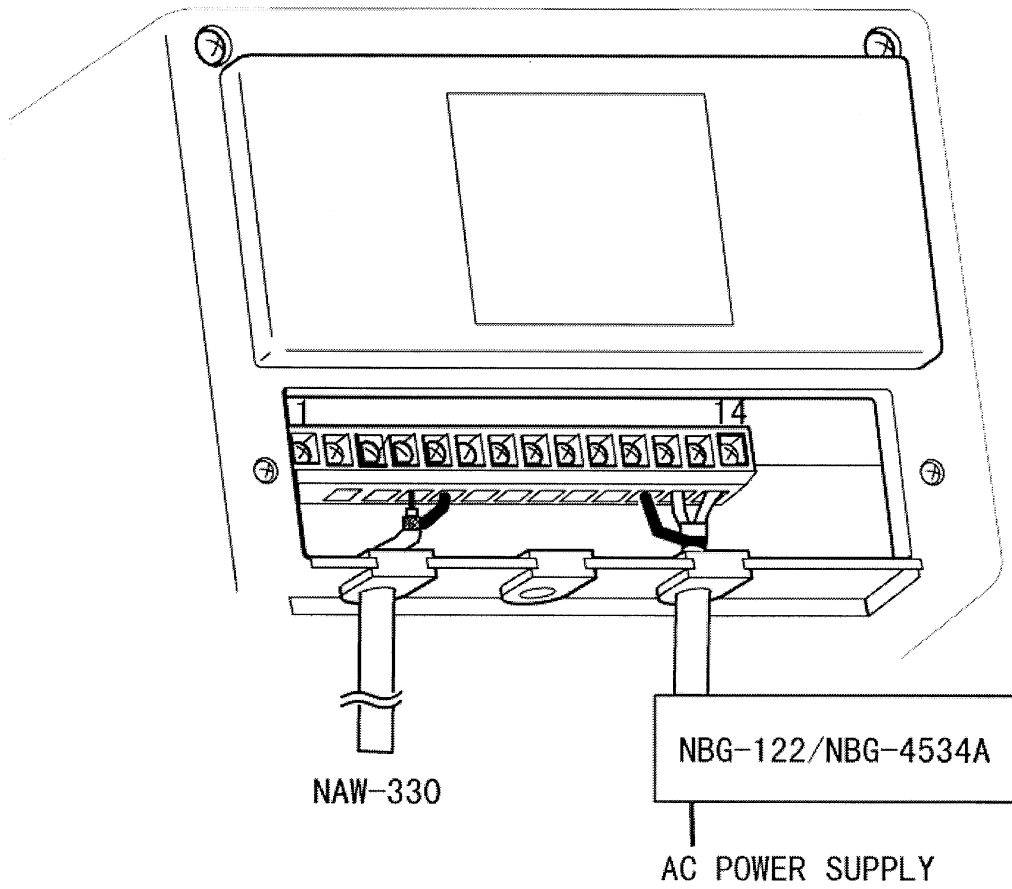
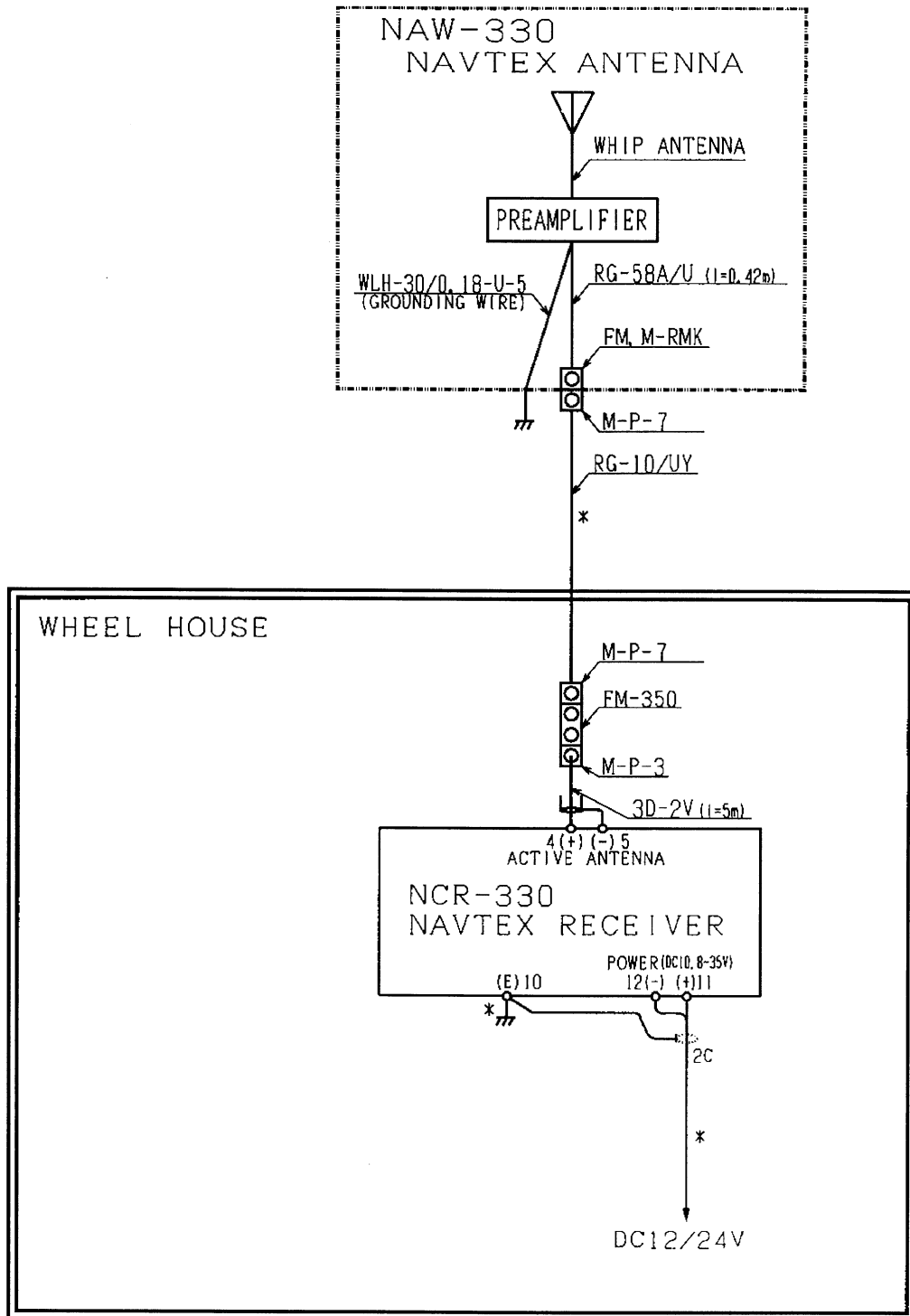


Fig. 3-5-2 Wiring the rear terminal board - Only when the power unit is to be used

3.3.2 When battery power is to be used



Note *: DOCKYARD SUPPLY

Fig. 3-6-1 Component connection diagram - Only when battery power is to be used

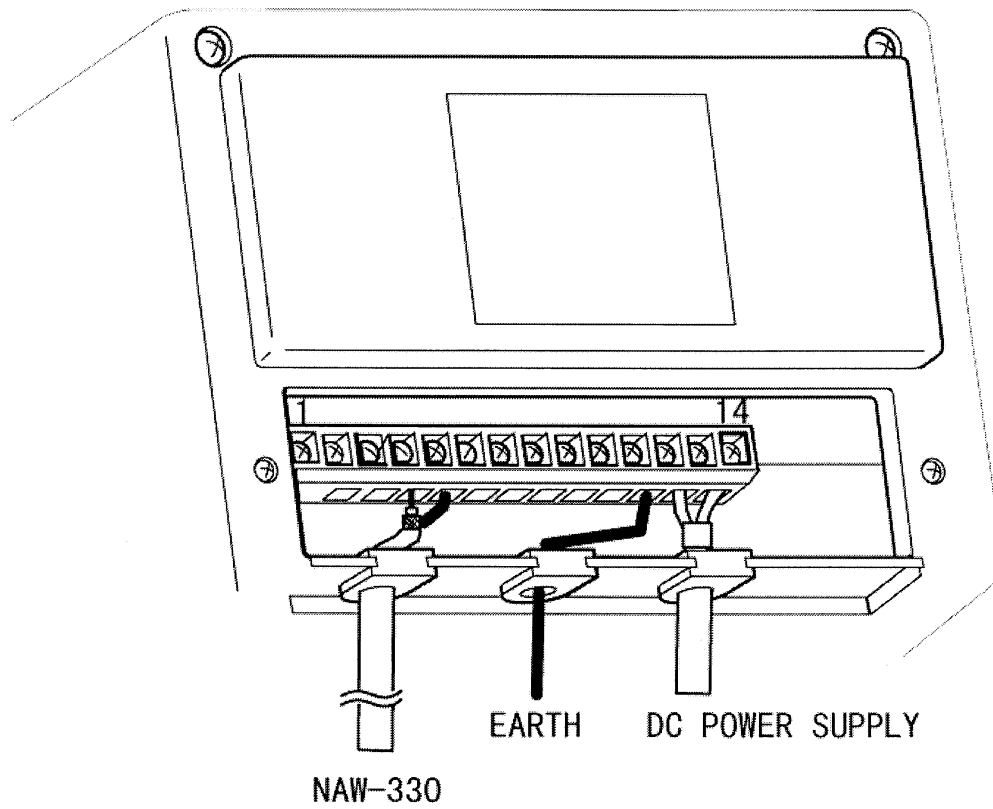






Fig. 3-6-2 Wiring the rear terminal board - Only when battery power is to be used

3.4 CABLE CONNECTION

Remove the cover from the rear bottom of the receiver, and connect the antenna cable, power cable, and all other necessary cables to the terminal board. All cables can be connected using a screwdriver.

3.4.1 Connecting the antenna cable

Connect the antenna cable to the appropriate antenna terminal on the terminal board.

 CAUTION	
	When connecting the antenna cable to the terminal board, be careful not to connect the conductor wire and the shield wire to the wrong terminals. Incorrect wiring may cause equipment and/or antenna trouble or deterioration of the receiver signal.
	Direct-current power is supplied to the antenna cable. Be careful to short-circuit the conductor wire and the shield wire. Short-circuiting could lead to equipment and/or antenna failures or deterioration of the signal to the receiver.
	If a ground meter or a ground lamp is connected to the DC power of the vessel, do not connect the shield wire of the antenna cable to the frame grounding terminal on the vessel. DC power to the antenna cable may cause the ground meter to deflect or the ground lamp to light up.

- ◆ Recommended cable: Armored 50-ohm coaxial cable
Model RG-10/UU or equivalent

Procedure

- (1) Loosen the screw of the antenna cable input terminal on the terminal board.
- (2) Pass the cable through the gaskets.
- (3) Insert the conductor of the cable into the first hole from the left of the terminal board, and the shield wire into the second hole.
- (4) Tighten the screw to fix the cable.

3.4.2 Connecting the power cable

Connect the power cable to the power terminals on the terminal board.



WARNING



Do not operate at voltages other than 10.8 - 35.0 VDC. Failure to observe this warning could result in fire, electrical shock, and/or malfunction.



CAUTION



Do not reverse the polarity of the power supply connection. This could result in malfunction.

- ◆ Recommended cable: Two-wire shielded cable
Model DPYC-1.25 or equivalent

Procedure

- (1) Loosen the screws of the DC+ and DC- power input terminals on the terminal board.
- (2) Pass the cable through the gaskets.
- (3) Connect the plus wire of the cable to the DC+ terminal, and the minus wire to the DC- terminal, and then tighten the screws to fix the cable.

CHAPTER 4

NAVTEX MESSAGE RECEIVING OPERATIONS

4.1 TURNING POWER ON

POWER

Press and hold the POWER switch for at least two seconds.



POWER

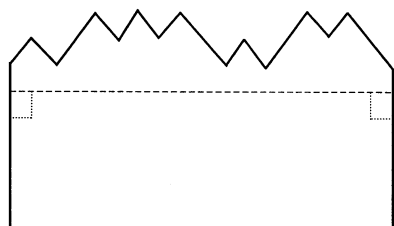


The green POWER lamp will turn on.

4.2 LOADING PRINTER PAPER

Proceed as follows to set printer paper:

- (1) Cut the leading edge of the paper straight across.



CAUTION



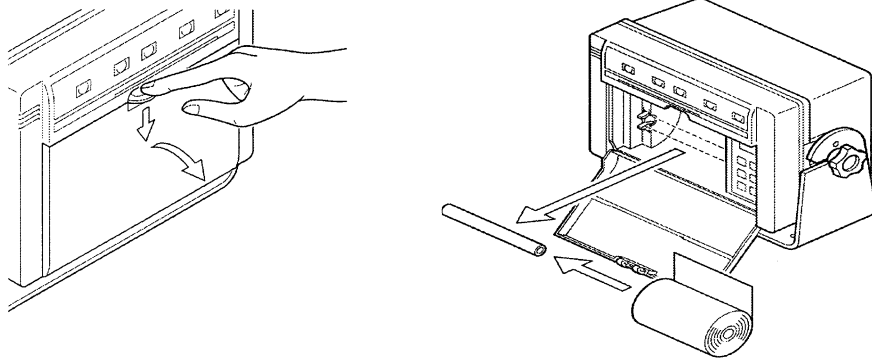
Cut the leading edge of the paper straight. Uneven cutting may cause the paper to jam.



If the paper jams in the printer, do not use force to pull it out from the opposite end. Forcing may result in loading trouble the next time the printer is loaded with paper. If forcing is the only option, pull the paper out in the opposite direction slowly and gently.

(2) Set the printer paper into the printer.

Open the paper cover and pull out the paper shaft.
Insert the shaft into the center of the roll of paper.

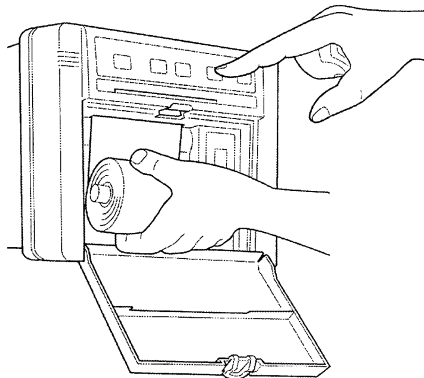


Manually feed the paper through the slot until the edge of the paper reaches the mouth.



FEED

Press the FEED switch while holding the paper by hand.



- (3) Insert the paper into the paper holder.

When the leading edge of the paper comes out through the printer,



set the paper shaft in the holder with paper.

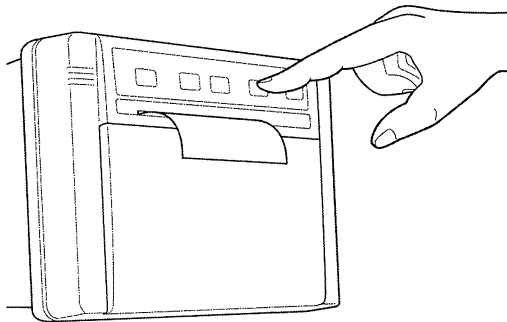
4.3 FEEDING THE PRINTER PAPER

FEED

Press the FEED switch .



The paper is fed, line by line, with each press of the switch . Depressing and holding the switch feeds the paper continuously.



4.4 PRINTING RECEIVED MESSAGES

Messages are automatically received and printed.

After a message has once been printed, it will not be printed out again, even if a message bearing the same identification code (described later) is received again, if the character error ratio of the printed message is 4% or less.

● Status of equipment when receiving

RECEIVE



lamp on:

Indicates that the equipment is detecting signals.

RECEIVE



lamp blinking:

Indicates that the equipment is receiving a message.

ALARM



lamp blinking:

Indicates that the equipment has received an important message (navigational warning, meteorological warning, or search and rescue information).

● Printing format

```
--- ZCZC IA01 --- → ① Message identification code
000000 UTC JAN 00
××NAVTEX AREA ...← ] → ② Text
NNNN → ③ End-of-message code
-- End of message CER=*. *% -- → ④ End-of-message guidance
```

① Message identification code

This code consists of four alpha-numeric characters which denote the coast station originating the message, the message type, and the report number.

(a) First character

The coast station that has transmitted the message is identified by a character from A to Z.

(b) Second character

This character identifies the type of message.

A: Navigational warning

B: Meteorological warning

C: Ice report

D: Search and rescue information / piracy and armed robbery

E: Meteorological forecast

F: Pilot message

G: DECCA message

H: LORAN-C message

I: OMEGA message

J: Differential OMEGA message

K: Other electronic navigational aid system message

L: Navigational warnings (additional)

M to Y: Reserve - presently not used

Z: QRU (no messages on hand)

(c) Third and fourth characters

These characters denote the report number assigned to the message by the coast station where the message originated.

The four-character identification code is stored in memory only when the message is received at a character error ratio of 4% or less. When an incoming message has the same identification code as one already stored in memory, it will not be printed.

The above, however, does not apply to report number '00'. For report number '00', the code is not held in memory and messages are printed each time they are received.

② Text

Text of the message. In the case that characters in a word (character string) exceed the maximum number per line, the letter ←^l is printed to indicate the division of a word by automatic line feed.

③ End-of-message code

This code denotes the end of transmission of one message.

④ End-of-message guidance

Denotes the end of the message itself. There are three types of guidance codes:

(a) --- End of Message CER=*.*% ---

Indicates that message transmission ended normally with [NNNN].

(b) --- Ended by 2 Alpha CER=*.*% ---

Indicates that the end-of-transmission code was received during message receiving.

(c) --- Incomplete Message ---

Indicates that message receiving was interrupted.

4.5 STOP THE ALARM

- (a) When alert messages are received

When alert messages are received, an alarm buzzer will sound and the alarm lamp will blink.



ALARM OFF

Press the ALARM OFF switch.



The alarm buzzer will stop sounding and alarm lamp will stop blinking.

- (b) If the printer paper runs short

PAPER



If the printer paper runs short, an alarm buzzer will sound and the alarm lamp will blink.



ALARM OFF

Press the ALARM OFF switch.



The alarm buzzer will stop sounding. The alarm lamp will continue blinking.
Supply the printer with paper.



PAPER



The alarm lamp will stop blinking.

4.6 ADJUSTING THE BRIGHTNESS OF LAMPS

DIMMER

Press the DIMMER switch.



Each time the switch is pressed, the brightness of the lamps changes in the following order:

High → Medium → Low → Off

NOTE: *The lamp of POWER, the back lamp of POWER switch and the back lamp of ALARM OFF will not be extinguished even if dimmer off state.*

4.7 TURNING POWER OFF

POWER

Press and hold the POWER switch for at least two seconds.



POWER



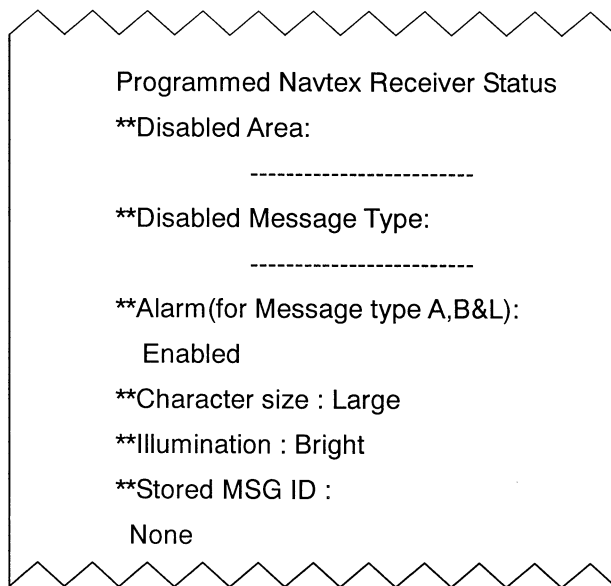
The green POWER lamp will go out to indicate that power has been turned off.

CHAPTER 5

NAVTEX RECEIVING OPERATIONS

5.1 DEFAULT SETTINGS

When the NAVTEX receiver is operated for the first time after purchase or when the restoring factory-defaults sequence is executed (reference 5.2), the equipment will be set to the following status:



Programmed Navtex Receiver Status

- **Disabled Area:

- **Disabled Message Type:

- **Alarm(for Message type A,B&L):
Enabled
- **Character size : Large
- **Illumination : Bright
- **Stored MSG ID :
None

5.2 RESTORING DEFAULTS

Restore the equipment to the factory-defaults by the following procedure:

POWER Turn power off by pressing the POWER switch.




TEST + **POWER** Please press POWER switch with TEST switch being pressed.



After the equipment has been turned back on and the printer has started operating, release POWER switch and TEST switch.



The printer will respond by printing:



```
Initialized
Navtex Receiver is Ready Ver *.*
```

5.3 FUNCTION SETTING

The equipment allows you to select a coast station, a message type, and receiver status. Make these selections as indicated by the guidance messages printed out by the printer.

Setting mode will be terminated automatically unless pressing switches within 3 minutes.

The set item already inputted to the midway will be valid.

5.3.1 Starting the function-setting operations

Open the paper cover.

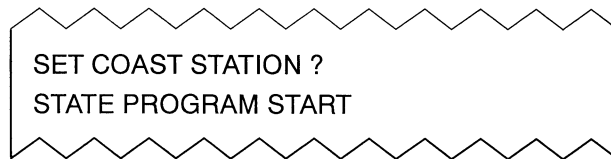


MENU

Press the MENU switch.



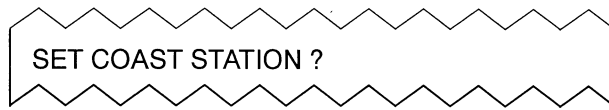
The printer will respond by printing:



SET COAST STATION ?
STATE PROGRAM START

5.3.2 Selecting a coast station

After the printer has printed:



- (a) To select a station, first press the **ENT** (enter) switch .
This allows you to select a coast station.
The display unit indicates 26 coast stations (A to Z).
Select one from among those displayed.

NOTE: For a list of stations and their broadcasting schedules, see Appendix 2, NAVTEX Broadcast Stations and Schedules, at the end of this manual.

→ Choose the station

Press the **▲** switch. The display will be sorted in ascending order (Z to A).

Press the **▼** switch. The display will be sorted in descending order (A to Z).

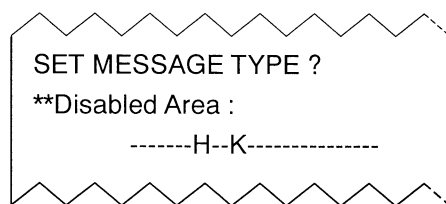
→ Select the receiving mode

Press the **ENT** (enter) switch . The dot at the bottom right of the display unit will turn on. Indicated station sets receiving.

Press the **CLR** (clear) switch . The dot at the bottom right of the display unit will turn off. Indicated station sets no receiving.

→ Finish selection

Press the **MENU** switch . The printer will print out the list of non-selected stations followed by:



The message type can now be selected.

- (b) If you do not wish to select a station, press the **CLR** switch .

The printer will respond with:

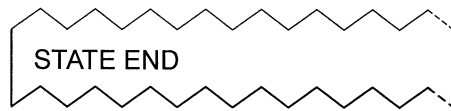


SET MESSAGE TYPE ?

and to ask you to select a message type.

- (c) To end the settings editing session, press the **MENU** switch .

The printer will respond with:



STATE END

to indicate that the function settings editing session has ended.

Settings that have been selected will be stored in memory.

5.3.3 Selecting the type of message to be received

NOTE: Navigational warning (A and L), meteorological warning (B), and search and rescue information (D) can not be de-selected.

After the printer has printed:



- (a) To select a message type, first press the **ENT** (enter) switch .

This allows you to select a message type.

The display unit indicates 22 message types.

Select one from among those displayed.

- Choose the message type

Press the **▲** switch . The display will be sorted in ascending order (Z to C).

Press the **▼** switch . The display will be sorted in descending order (C to Z).

- Select the receiving mode

Press the **ENT** (enter) switch . The dot at the bottom right of the display unit will turn on. Indicated message type sets receiving.

Press the **CLR** (clear) switch . The dot at the bottom right of the display unit will turn off. Indicated message type sets no receiving.

- Finish selection

Press the **MENU** switch.

NOTE: The 22 types of messages that can be selected/de-selected are as follows:

C: Ice report

E: Meteorological forecast

F: Pilot message

G: DECCA message

H: LORAN-C message

I: OMEGA message

J: Differential OMEGA message

K: Other electronic navigational aid system message

M to Y: Reserve - presently not used

Z: QRU (no message on hand)

After selection of the message type, the printer will print out a list of non-selected messages followed by:

```
SET STATE ?  
**Disabled Message Type :  
--C---H-----
```

Receiver status can now be selected.

- (b) If you do not wish to select a message type, press the **CLR** (clear) switch.

The printer will respond with:

```
SET STATE ?
```

and ask you to select receiver status.

- (c) If you wish to end the settings editing session, press the **MENU** switch. The printer will respond with:

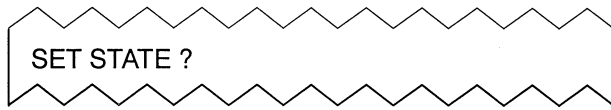
```
STATE END
```

to indicate that the function settings editing session has ended.

Settings that have been selected will be stored in memory.

5.3.4 Selecting receiver status

After the printer has responded with:



- (a) To select receiver status, first press the **ENT** (enter) switch .

This allows you to select receiver status.

The printer prints out receiver status selection items. Select one from among those printed out.

- (a-1) Alarm buzzer on/off

The alarm buzzer can be set to automatically give an alarm whenever navigational warning A or L or meteorological warning B is received.

NOTE: *Regardless of the above selection, the alarm will always sound when search and rescue information D is received.*

→ Activating the alarm

Press the **ENT** (enter) switch. The printer will respond by printing “ON”.

→ Deactivating the alarm

Press the **CLR** (clear) switch. The printer will respond by printing “OFF”.

(a-2) Character size change

The size of the characters printed out can be set to either normal size or double-width size.

Printing at the double-width size

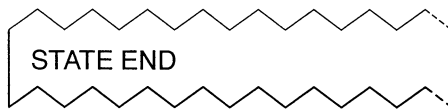
→ Press the **ENT** (enter) switch. The printer will print “Large”.

Printing at the normal size

→ Press the **CLR** (clear) switch. The printer will print “Normal”.

(b) If you do not wish to select receiver status, press the **CLR** (clear) switch.

The printer will respond by printing:



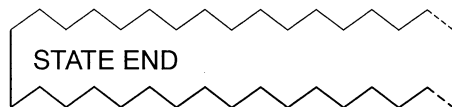
to indicate that the function settings editing session has ended.

5.3.5 Ending function settings editing session

To end the function settings editing session, press this switch.:

MENU

The printer will print:



to indicate that the function settings editing session has ended.

Settings that have been selected will be stored in memory.

5.4 STATUS PRINTING

Printing the list of current settings.

You can print out a list of all the settings that are currently active.

Press this switch.:

STATE

The printer will print out a list of settings similar to this:

```
Programmed Navtex Receiver Status
**Disabled Area :
-----
**Disabled Message Type :
-----
**Alarm (for Message type A,B&L) :
  Enabled
**Character size : Large
**Illumination : Bright
**Stored MSG ID :
  None
```

5.5 SELF-DIAGNOSTIC TESTS

Executing self-diagnostic tests

The self-diagnostic tests execute receiver/demodulator circuit tests and message-processing tests.

Press this switch.:

TEST

If the self-diagnostic tests do not detect any abnormalities, data will be printed out as follows and the alarm buzzer will sound:

```
----- Press "ALARM OFF " -----
----- Self Test End -----
----- ZCZC IA00 -----
THE QUICK BROWN FOX JUMPS OVER THE
LAZY DOG 1234567890 . , ? ( ) = / \ + - :
NNNN
--- End of Message CER = 0.0% ---
----- Overall Test Start -----
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890 . , ? ( ) = / \ + - : * %
----- Printer Test Start -----
---- Main Processor : Good ----
---- 518kHz Receiver : Good ----
----- Self Test Start -----
```

Press this switch.:

ALARM OFF

The alarm buzzer will stop sounding and the alarm lamp will stop blinking.

If any abnormalities are detected, replace parts as directed in Chapter 6.

NOTE: *The self-diagnostic tests can not be executed while the printer is in use.*

5.6 COAST STATION MODE

The coast station mode is intended for use by coast stations in order to monitor their own NAVTEX transmissions. When this mode is set, the coast station and message type can not be selected. All coast stations and message types (A to Z) are selected by default.

Since message identification codes are not stored into the memory, the same message is printed repeatedly.

(a) Selecting the coast station mode

Following the procedures below to set coast station mode:

POWER

Turn power off by pressing the POWER switch.



ALARM OFF

+

POWER

Please press POWER switch with ALARM OFF switch begin pressed.



After the power has been turned back on and the printer has started operating, release POWER switch and ALARM OFF switch.

The printer will respond with:

Coast Station Mode
Navtex Receiver is Ready

(b) Clearing the coast station mode

Following these procedures to clear the coast station mode:

POWER

Turn power off by pressing the POWER switch.



FEED + **POWER**

Please press POWER switch with FEED switch begin pressed.



After the power has been turned back on and the printer has started operating, release POWER switch and FEED switch.

The printer will respond with:

Navtex Receiver is Ready

CHAPTER 6

MAINTENANCE AND INSPECTION

6.1 MAINTENANCE

To maintain the equipment always in its best condition, it is important to perform maintenance checks and record the results. Thus, potential problems can be detected early and trouble can be avoided.

6.1.1 Daily check

Without printer paper, you cannot obtain necessary information. Therefore, check the remaining quantity of printer paper as follows:

- (1) Open the paper cover on the front panel.
- (2) Check the quantity of printer paper remaining. If red lines appear at the edges of the paper, replace it with a new roll (the red lines indicate there is one meter or less remaining).
- (3) If there is a sufficient quantity of paper, or after a new roll of paper has been set, close the paper storage cover.

6.1.2 Periodic check

The self-diagnostic tests check the status of each function of the equipment on a per-block basis. Conduct periodic checks as directed below.

- (a) Operating procedure

See Section 5.5, Self-Diagnostic Tests, for further details.

(b) Self-diagnostic tests

Self-diagnostic tests begin with testing of the receiver/demodulator circuit and end with testing of message-processing. The results are printed out, and if the tests detect no abnormalities, the print-out will look like this:

```
..... Press "ALARM OFF".....  
.....Self Test End.....  
..... ZCZC IA00.....  
THE QUICK BROWN FOX JUMPS OVER THE  
LAZY DOG 1234567890 . , ? ( ) = / + - :  
NNNN  
.....End of Message CER = 0.0%.....  
..... Overall Test Start.....  
ABCDEFGHIJKLMNOPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz  
1234567890 . , ? ( ) = / + - : * %  
..... Printer Test Start.....  
..... Main Processor : Good.....  
.....518kHz Receiver : Good.....  
..... Self Test Start.....
```

The contents and results of diagnosis are in the following.

① Receiver/demodulator circuit tests

A loop test of the receiver circuit is executed. When this check is completed correctly, it prints as following:

“518kHz Receiver: Good”

If any errors are found, the following error message is printed:

“518kHz Receiver: Failed”

```
.....518kHz Receiver : Failed.....
```

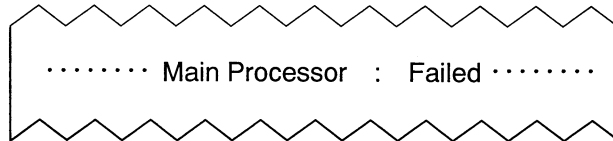
② ROM tests

A test of the computer and memories are executed. When this check is completed correctly, it prints as following:

“Main Processor: Good”

If any errors are found, the following error message is printed:

“Main Processor: Failed”



..... Main Processor : Failed

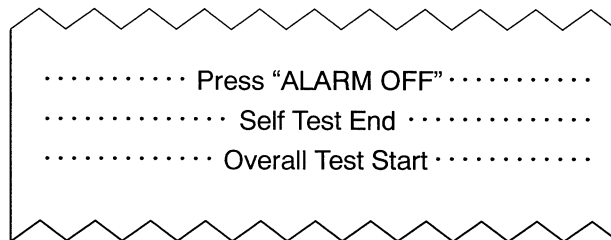
③ Message-processing tests

Loop tests are carried out to check for normal operation of the processes from NAVTEX message receiving to printing. The RECEIVE and ALARM lamps blink during normal execution of the tests.

When this check is completed correctly, it prints message identification code as following:

“IA00”

If any errors are found, the message is not printed.



..... Press “ALARM OFF”

..... Self Test End

..... Overall Test Start

④ Other checks by the self-diagnostic tests

a. Checking the receiving tone

During tests, if the equipment is normal, a soft tone will be heard. If this tone is not heard, or if the tone is unusually loud, either the CMN-2330 receiver board or the CDJ-2330 is likely to be malfunctioning.

b. Checking the alarm buzzer sound

During message-processing tests, if the equipment is normal, the alarm buzzer will sound. This alarm can be deactivated by pressing the ALARM OFF switch. If the alarm does not sound or if it is unusually loud, either the CMN-2330 receiver board or the CDJ-2330 main processor board is likely to be malfunctioning.

After the alarm has sounded, if it cannot be deactivated using the ALARM OFF switch, either the H-7SZJD0002A main switch or the CDJ-2330 main processor board is likely to be malfunctioning.

c. Lamp tests

The lamps on the front panel blink for about two seconds prior to the start of the message-processing tests.

During the tests, if the equipment is normal, all LEDs other than POWER will blink at intervals of about 0.5 seconds. If blinking is abnormal, the H-7SZJD0002A main switch or the CDJ-2330 main processor board is likely to be malfunctioning.

Also, the alphabetic display unit will display characters A to Z. If the display is abnormal, the CDJ-2330 main processor board is likely to be malfunctioning.

6.1.3 Other general maintenance and check items

In addition to periodic checks by the self-diagnostic tests, it is recommended to check the following periodically.



CAUTION






When loading the printer paper, cut the leading edge straight. Uneven cutting may cause the paper to jam.

NOTE: *If the “out of paper” alarm activates to warn of paper outage, the receiver cannot be reset to stand-by status just by adding paper. The alarm must be cleared by pressing the ALARM OFF switch after adding paper.*

Check Items	Contents
Antenna	<ul style="list-style-type: none"> ① Is the antenna mounted properly? ② Is the whip antenna free from damage or other abnormalities? ③ Is the self-bonding tape wound properly around the antenna connectors? ④ Is the antenna cable connected properly to the terminal board on the rear panel? ⑤ Is a DC voltage between the plus and minus antenna terminals 9 volts?
NAVTEX receiver	<ul style="list-style-type: none"> ① Does the receiver produce the receiving tone at normal sound level? ② Is the tone soft? Or is it a loud beeping?
Printer	<ul style="list-style-type: none"> ① Does the printer feed paper one line at a time with each press of the FEED switch? ② Are there any missing dots in the print-out? ③ Is printing density normal? ④ Are there any abnormal sounds when the printer is operating? ⑤ Can printer paper be added smoothly?
Out-of-paper sensor	<p>When the printer paper is cut off at the loading port, and the remaining stub of the paper is removed from the printer:</p> <ul style="list-style-type: none"> ① Does the paper alarm lamp blink? ② Does the paper alarm sound? <p>When there is no paper, and the ALARM OFF switch is pressed:</p> <ul style="list-style-type: none"> ③ Does the alarm stop sounding? ④ Does the PAPER lamp remain blinking? <p>When printer paper is added:</p> <ul style="list-style-type: none"> ⑤ Can the paper be fed by the FEED switch? ⑥ Does the PAPER lamp go out when the ALARM OFF switch is pressed?

6.2 IF PAPER BECOMES JAMMED

If the paper jams near the printer head, ask your nearest branch, business office or a dealer for inspection and repair.

 CAUTION	
	If the paper in the printer jams, do not continue pressing the FEED switch.
	When loading paper into the printer, cut the leading edge straight. Uneven cutting may cause the paper to jam.

As the message information would be lost by paper jamming, initialize the equipment to be able to receive the same message again. (See Section 5.2.)

6.3 FUSE REPLACEMENT

6.3.1 Removing the casing (Preparation for fuse replacement)



WARNING



The power switch on the power distribution panel must be turned off during disassembly of the equipment. Failure to observe this warning could cause electrical shock and/or malfunction.



CAUTION



Wiring must be disconnected from the terminal board during disassembly of the equipment. Failure to observe this caution could cause electrical shock and/or malfunction.

The procedure for removing the case is as follows:

- (1) Turn power off.
- (2) Cut off power to the receiver by turning off the power switch on the power distribution panel.
- (3) Remove screws 1 and 2 and then remove the rear cover.
- (4) Disconnect the wiring from the terminal board on the rear panel of the equipment.
- (5) Remove screws 4, 5, 6, and 7.
- (6) Holding both sides of the casing, press terminal strip 9 with the thumb, and lift off the casing.

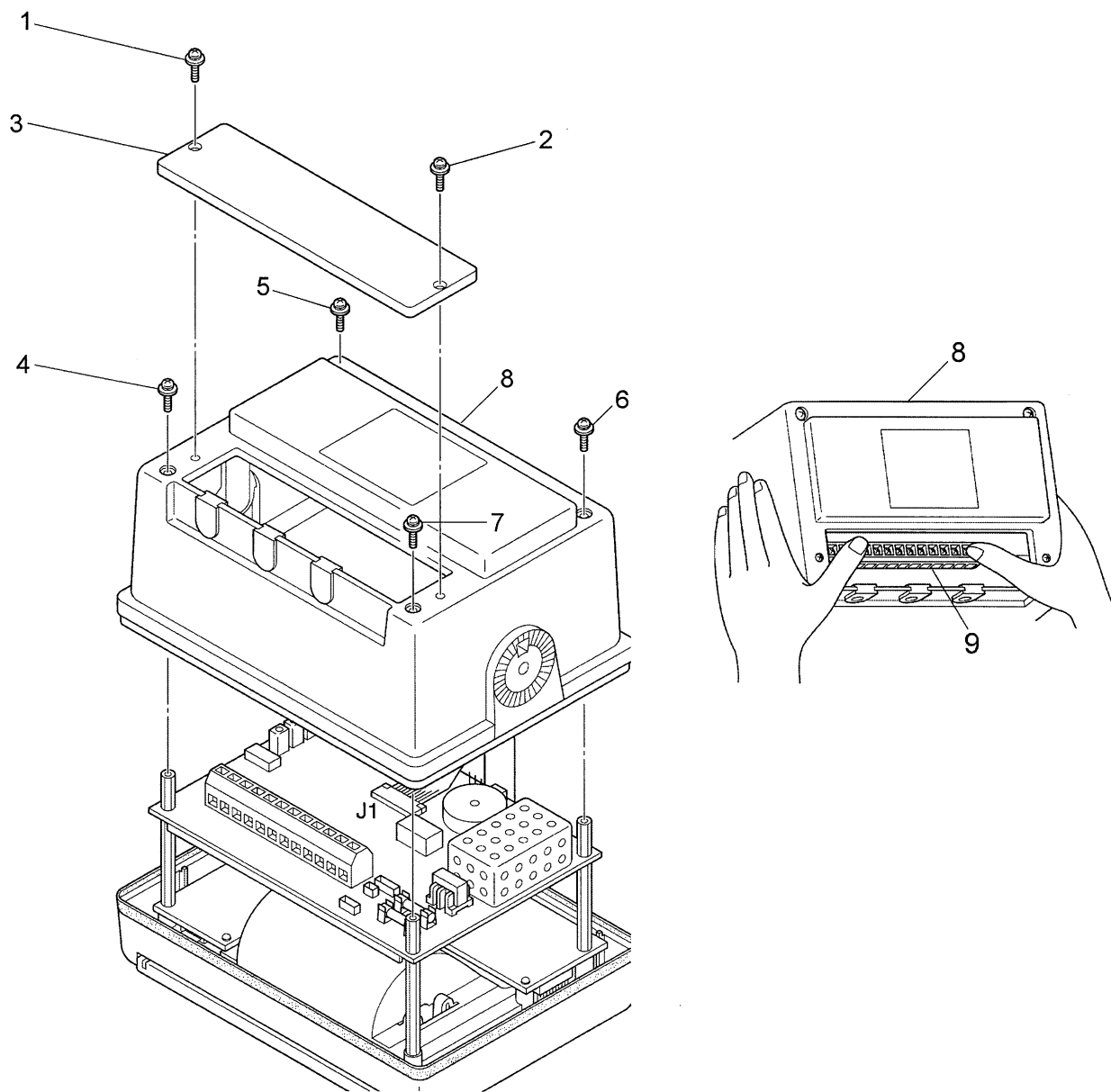

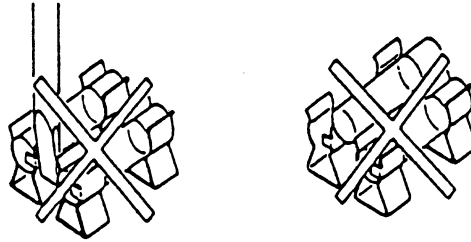



Fig. 6-3 Removing the casing

6.3.2 Replacing fuses

WARNING

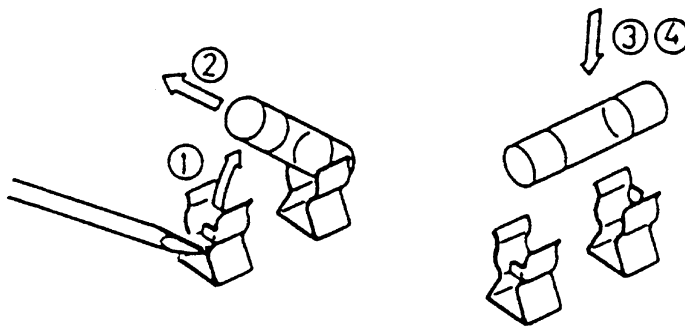
-  The power switch on the power distribution panel must be turned off during replacing a fuse. When replacing a fuse, use extreme caution not to bring it into contact with adjacent ones. Short-circuiting due to making contact may cause power and/or circuit board damage.



-  Use only MF51NN-3.15A fuses (normal pre-arcing type, rated at 3.15 A). The use of other fuse may cause fire and/or damage.

The replacement procedure is as follows:

- (1) Lift one end of the blown fuse using a tool such as a thin tip screwdriver.
- (2) Remove the fuse.
- (3) Place a new fuse in the fuse holder.
- (4) Push the new fuse into position.



6.4 MAINTENANCE COMPONENT LISTS

6.4.1 Maintenance units

NCR-330 NAVTEX Receiver Board Unit		
Name of the unit	Model number	JRC part code
Receiver board	CMN-2330	CMN-2330
Main processor board	CDJ-2330	CDJ-2330

NAW-330 NAVTEX Antenna Board Unit		
Name of the unit	Model number	JRC part code
Antenna coupler	CFG-2330	CFG-2330

6.4.2 Maintenance parts

Parts for the NCR-330 NAVTEX Receiver		
Part name	Model number	JRC part code
Fuse	MF51NN-3.15A	5ZFAD00227
Printer paper	H-7ZPJD0044	7ZPJD0044

CHAPTER 7

AFTER-SALES SERVICE

◆ When Requesting Repair

- (1) If you suspect that a problem has occurred, take the appropriate remedial action after completing the following diagnostic :
 - a) Check the rear terminal board of the equipment for loose or disconnected cables.
 - b) Check that the required voltage is supplied to the power input terminals on the rear terminal board of the equipment. The required voltage ranges from 10.8 to 35.0 VDC.
 - c) Check the antenna for damage.
 - d) Check the equipment interior for blown-out fuses.
 - e) Check for loose or disconnected cables between the internal components of the equipment.
 - f) Check the relay connectors of the antenna cable for loose or disconnected cable.

- (2) If the above checks uncover any abnormalities, stop operations of the receiver immediately after that contact our dealer, service representative or JRC sales.
 - Repairs within the warranty period will be performed free of charge in accordance with the provisions of the relevant specification.
 - After the expiry of the warranty period, if the corresponding function can be restored by repair, out-of-warranty repairs will be performed at your request. Please note that this repair is not free of charge.
 - When requesting repair, give the following information to the service:
 - Product name, model number, date of manufacture, and serial number
 - How and why the trouble occurred
 - ① The nature of the problem, and what happened as a result?
 - ② The state or type of operation when the trouble occurred?
 - ③ Installation status of the equipment when the trouble occurred? (conditions of wiring, electrical grounding, and so on).
 - ④ Was any unusual or abnormal condition observed during operation before the trouble occurred?
 - Name, address, and phone number of your company or institution, and your name

◆ Optional Maintenance Checks

Over a period of time, the performance of various components will deteriorate. The actual rate of deterioration will vary according to the operating conditions and environment. It is therefore recommended for your equipment to undergo optional maintenance and servicing in addition to your own checks.

Please contact your dealer or JRC sales or service representative for optional services.

A fee is charged for these services.

If you have any questions about after-sale services, please contact your dealer or JRC sales or service representative.

◆ JRC Sales/Service Representatives

See the List of JRC Product Dealers and JRC Sales/Service Representatives at the end of this manual.

CHAPTER 8

DISPOSAL

If this product is to be disposed of, process it in accordance with the legal regulations of the local government having jurisdiction. For further details, please contact your dealer or JRC sales/service representative or the local government having jurisdiction.

Materials...See mechanical parts list of appendix1 at the appendix of this manual.

CHAPTER 9

SPECIFICATIONS

9.1 NCR-330 RECEIVER

9.1.1 Electrical specifications

(1) NAVTEX receiver unit

a. Receiver

Receiving frequency	518 kHz
Receiving scheme	STRAIGHT
Receiving mode	F1B
Gain	Max. character error ratio: 1% at an antenna input of $1\mu\text{V}$
Antenna input	Special antenna (NAW-330)
BK	12 VDC or 24 VDC
External alarm interface	Open-collector type
	Max: 500 mA at 35VDC
	Recommended product: CGC-300A
	Max. power consumption: 20 mA Audio output level: 85 dB/m
Receiving format	7-bit error detection code based on the NAVTEX broadcasting format

b. Printer

Printing scheme	Thermosensitive 7×6 or 7×5 dot matrix
Total characters/line	35 or 40
Printer paper	7ZPJD0044, 80 mm \times 60 mm across \times 40 m
Out-of-paper warning	Alarm buzzer
	Operating panel lamp blinking
	Red end-of-paper line marks on printer paper (the red lines indicate there is one meter or less remaining).

c. Control switches

Power on/off	
Coast station selection	
Message type selection	
Receiver status selection	
Alarm buzzer manual turn-off	
Receiver status information printing	

Brightness control
Self-diagnostic tests
Paper feeding

- d. Display/indicator unit
- Power-on indicator
 - Visual alarm on important message receiving
 - Out-of-paper alarm
 - Receiving indicator
- (2) Power unit
- | | |
|-------------------|--|
| Input voltage | 12 to 24 VDC(Tolerance +30%,-10%) |
| Power consumption | (Standby) at 12 VDC: Approx. 4 W
(Operating) at 12 VDC: Approx. 6 W (max.)
(Standby) at 24 VDC: Approx. 5 W
(Operating) at 24 VDC: Approx. 7 W (max.) |

9.1.2 Mechanical specifications

- (1) Minimum and maximum temperature range
- | | |
|------------|--------------|
| Operating: | -15 to +55°C |
| Storage: | -25 to +75°C |
- (2) Relative humidity
- | |
|-------------------|
| Up to 95% at 40°C |
|-------------------|
- (3) Dimensions
- | |
|---|
| 246 mm wide × 170 mm high × 133 mm deep
(with mounting base) |
|---|
- (4) Installation
- | |
|---|
| Wall-mounting, desk-mounting, or ceiling-mounting |
|---|
- (5) Mass
- | |
|-----------------------------|
| 2.0 kg (with mounting base) |
|-----------------------------|

9.2 NAW-330 ANTENNA

9.2.1 Electrical specifications

Receiving frequency	518 kHz
Bandwidth	6 kHz
Gain	Min. antenna coupler output: 60 dB μ V (at an electric field intensity of 60 dB μ V/m)
Power consumption	6 mA at 9 VDC
Impedance	50 Ω

9.2.2 Mechanical specifications

Installation	Mountable on a pole up to 9 cm across using the supplied mounting band.
Mass	0.5 kg

APPENDIX

APPENDIX1 MECHANICAL DETAILS

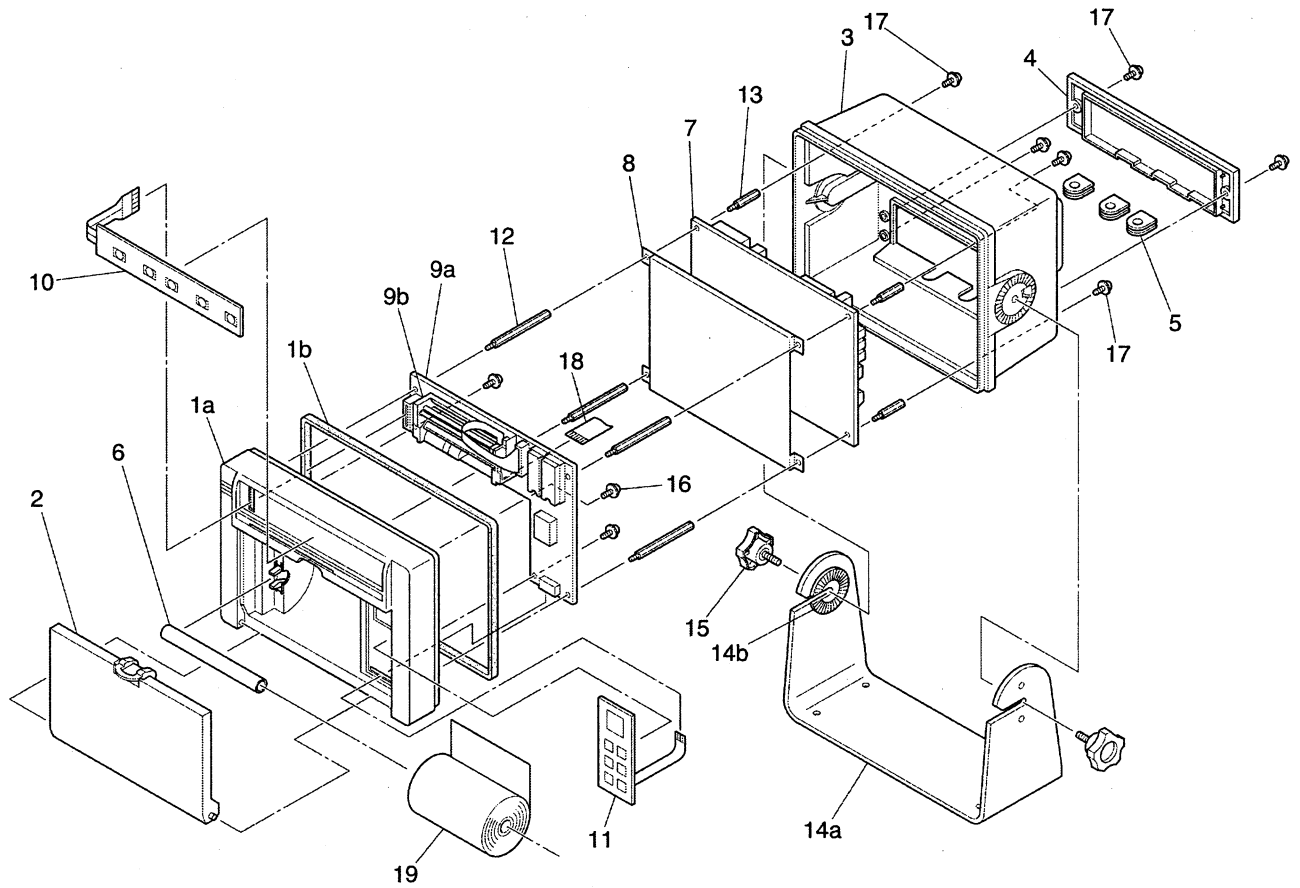


Fig. AP-1 Mechanical details

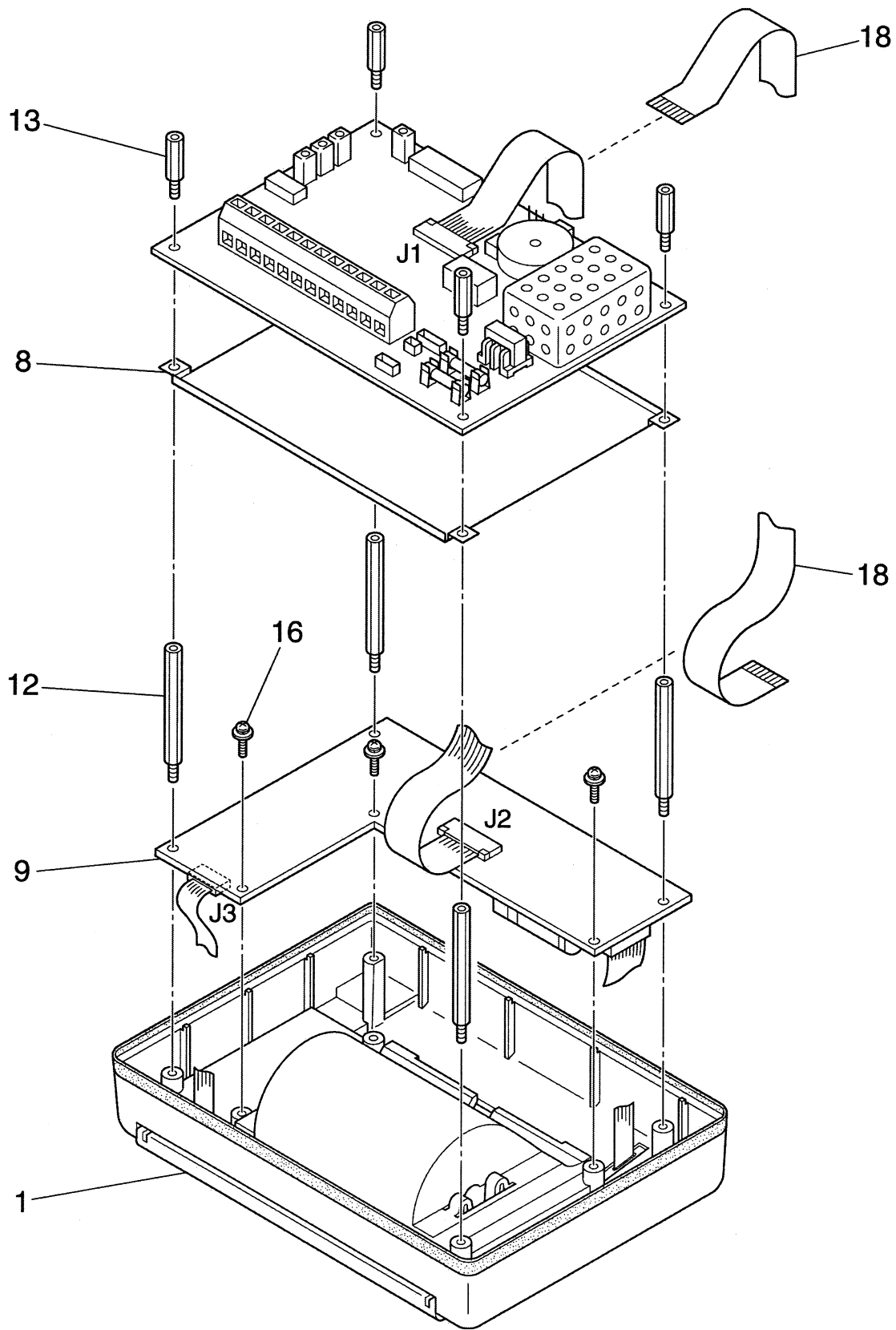


Fig. AP-2 Mechanical details

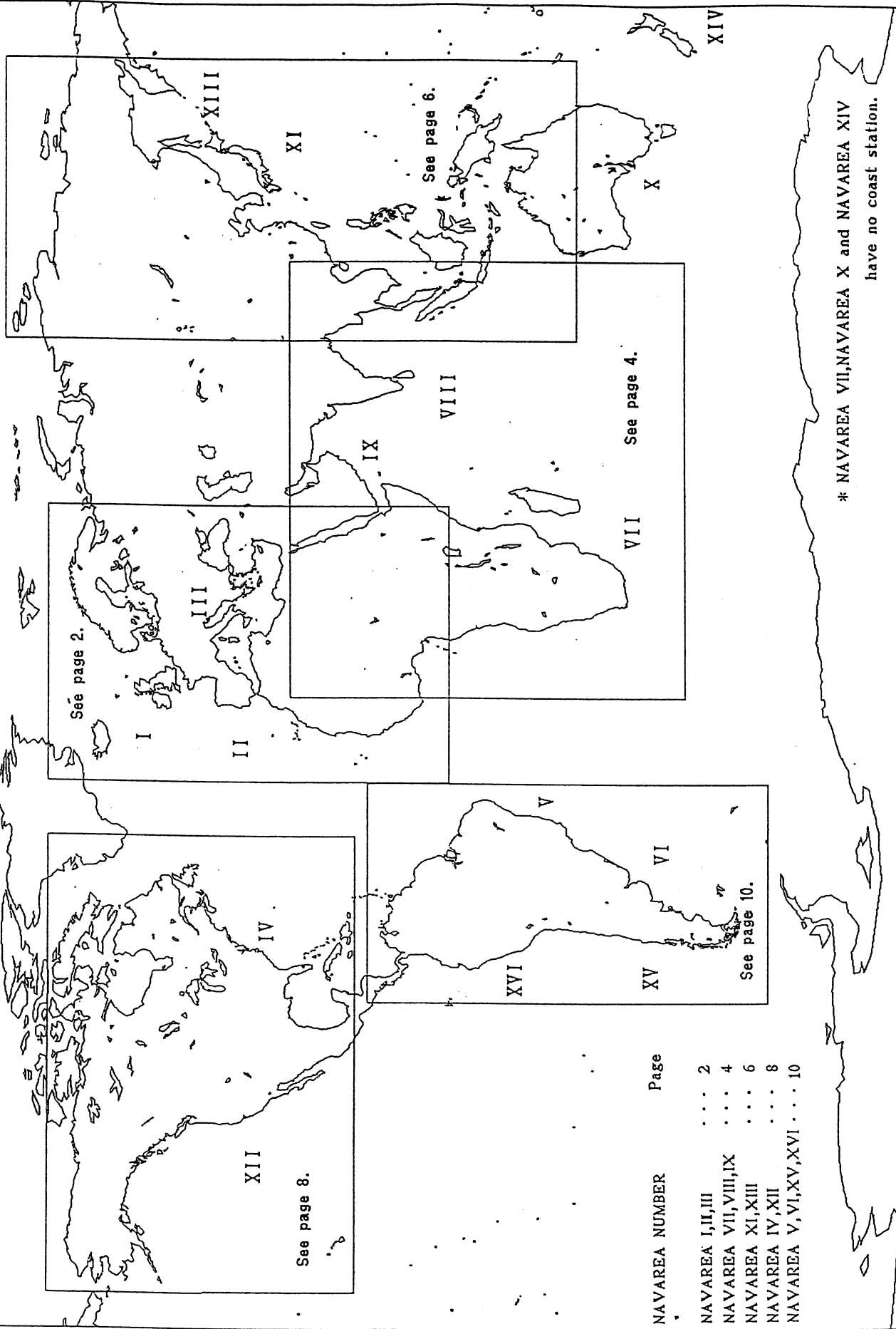
MECHANICAL PARTS LIST

No	Description	JRC Part code	Q' ty	Material
1	Bezel Assembly Consisting of :	MPBC33719		
1a	Front Bezel	MTV302423	1	ABS
1b	Packing, Rubber	MTT023560	1	
2	Paper Cover	MTV302424	1	ABS
3	Cabinet	MTV000310C	1	ABS
4	Mounting Base	MTV000313B	1	ABS
5	Gasket	MTT023562	3	
6	Center Shaft	MTH004065	1	ABS
7	Receiver PCB	CMN-2330	1	
8	Shield Cover	MTB159034	1	Iron
9	Main Processor Assembly Consisting of :			
9a	Main Processor PCB	CDJ-2330	1	
9b	Printer	MTP401-40B	1	
10	Main Switch	H-7SZJD0002A	1	
11	State Switch	H-7SZJD0003A	1	
12	Spacer	MTK300450	4	
13	Spacer	BRTG05125A	4	
14	Bracket Assembly Consisting of :	MPBX16298		
14a	Bracket, Mounting	MTB159036C	1	Iron
14b	Washer, Serration	MTV002834	2	
15	Knob	BRHD00400	2	
16	Shield Case	MTD004463	1	Iron
17	Sems Screw(NK3x8Bs)	BSNC03008B	9	Iron
18	Cable	7ZCJD0034A	1	
19	Printing Paper	7ZPJD0044	1	

APPENDIX2 LOCATION & TIME SCHEDULE FOR NAVTEX COAST STATIONS

LOCATION &
TIME SCHEDULE
FOR NAVTEX
COAST STATIONS

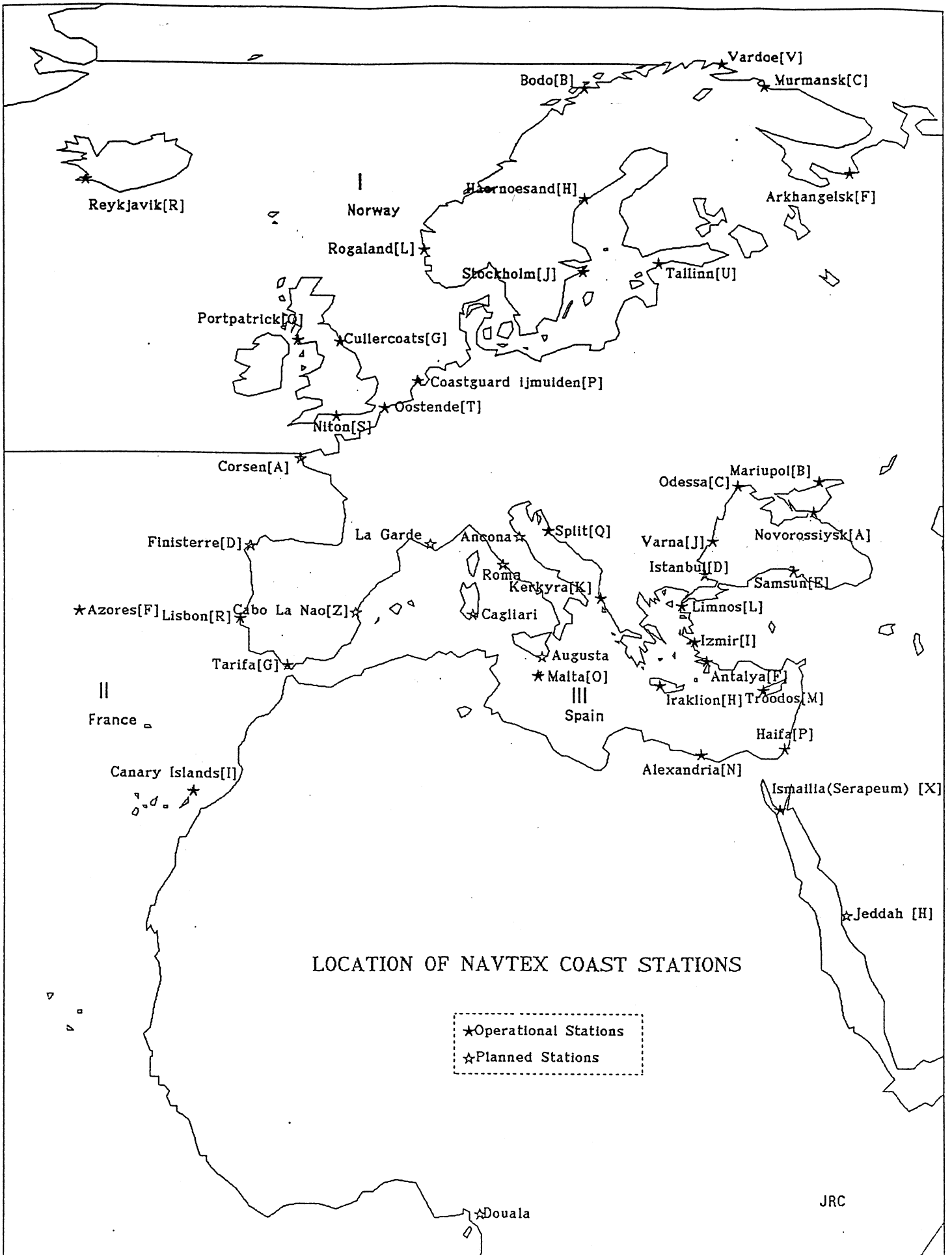
NAVAREA OF WORLD



NAVAREA NUMBER	Page
NAVAREA I,II,III	... 2
NAVAREA VII,VIII,IX	... 4
NAVAREA XI,XIII	... 6
NAVAREA IV,XII	... 8
NAVAREA V,VI,XV,XVI	... 10

* NAVAREA VII,NAVAREA X and NAVAREA XIV
have no coast station.

JRC NCR



NAVAREA I

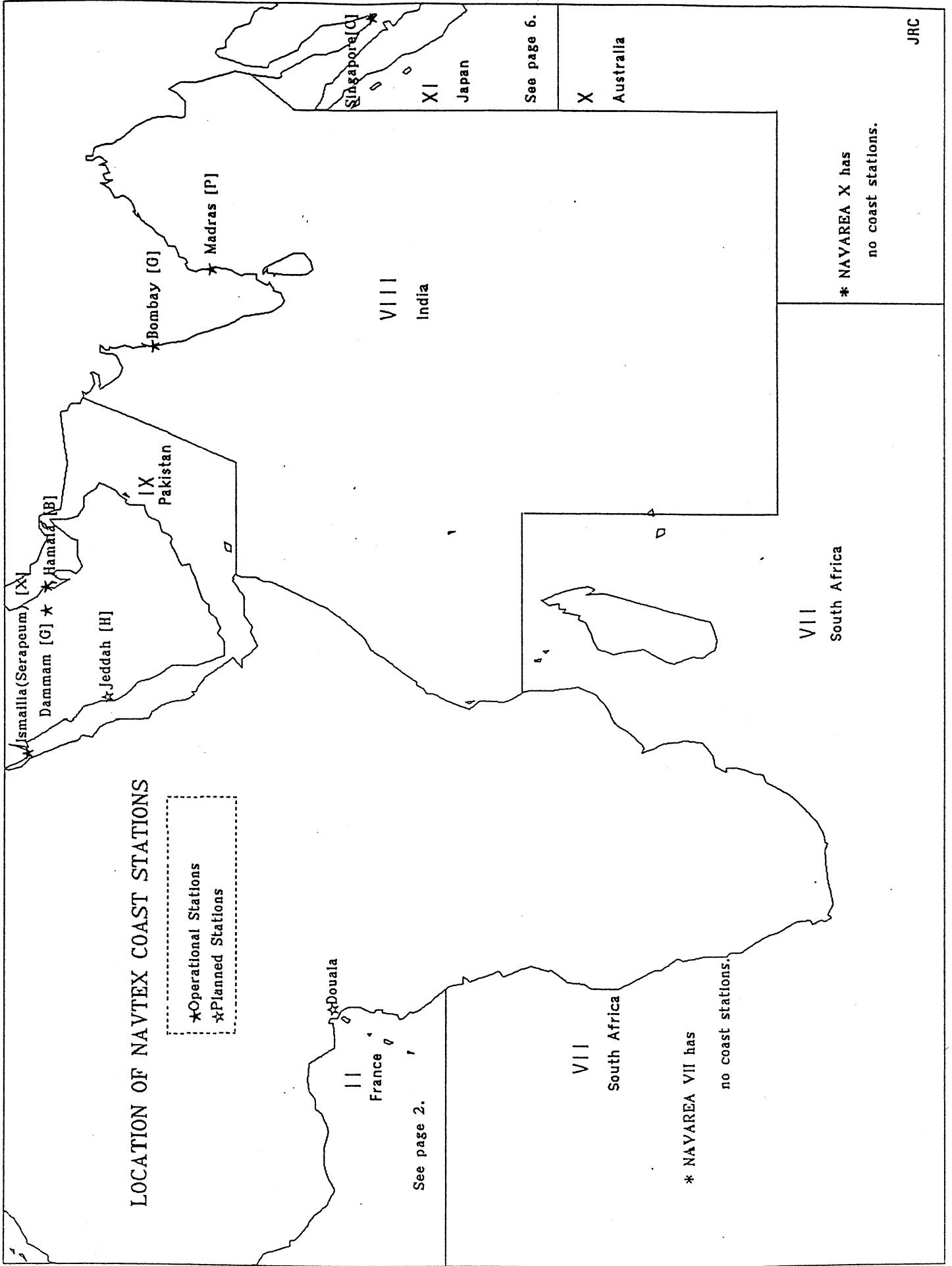
ID	Coast Station	Country	Tx Time (UTC)
B	Bodo	Norway	00:18 04:18 09:00 12:18 16:18 21:08
C	Murmansk	Russia	01:20 05:20 09:20 13:20 17:20 21:20
F	Arkhangelsk	Russia	02:00 06:00 10:00 14:00 18:00 22:00
G	Cullercoats	U.K.	00:48 04:48 08:48 12:18 16:18 20:48
H	Haernoessand	Sweden	00:00 04:00 08:00 12:00 16:00 20:00
J	Stockholm	Sweden	03:30 07:30 11:30 15:30 19:30 23:30
L	Rogaland	Norway	01:48 05:48 09:48 13:48 17:48 21:48
O	Portpatrick	U.K.	01:30 05:30 09:30 13:30 17:30 21:30
P	Coastguard ijmuiden	Netherland	03:48 07:48 11:48 15:48 19:48 23:48
R	Reykjavik	Iceland	03:18 07:18 11:18 15:18 19:18 23:18
S	Niton	U.K.	00:18 04:18 08:18 21:18 16:18 20:18
U	Tallinn	Estonia	00:30 04:30 08:30 12:30 16:30 20:30
V	Vardoe	Norway	03:00 07:00 11:00 15:00 19:00 23:00
T	Ostende	Belginm	

NAVAREA II

ID	Coast Station	Country	Tx Time (UTC)
A	Corsen MRCC	France	09:18 17:18
D	Finisterre	Spain	00:30 04:30 08:30 12:30 16:30 20:30
F	Azores(Horta)	Portugal	00:50 04:50 08:20 12:50 16:50 20:50
I	Canary Islands	Spain	01:00 05:00 09:00 13:00 17:00 21:00
R	Lisbon	Portugal	02:50 06:50 10:50 14:50 18:50 22:50
	Douala	Cameroon	Planned station

NAVAREA III

ID	Coast Station	Country	Tx Time (UTC)
A	Novorossiysk	Russia	03:00 07:00 11:00 14:00 18:00 20:00
B	Mariupol	Ukraine	01:00 05:00 09:00 13:00 17:00 21:00
C	Odessa	Ukraine	02:30 06:30 10:30 14:30 18:30 22:30
D	Istanbul	Turkey	00:30 04:30 08:30 12:30 16:30 20:30
E	Samsun	Turkey	00:40 04:40 08:40 12:40 16:40 20:40
F	Antalya	Turkey	00:50 04:50 08:50 12:50 16:50 20:50
G	Tarifa	Spain	01:00 05:00 09:00 13:00 17:00 21:00
H	Iraklion	Greece	01:10 05:10 09:10 13:10 17:10 21:10
I	Izmir	Turkey	01:20 05:20 09:20 13:20 17:20 21:20
J	Varna	Bulgaria	01:30 05:30 09:30 13:30 17:30 21:30
K	Kerkyra	Greece	01:40 05:40 09:40 13:40 17:40 21:40
L	Limnos	Greece	01:50 05:50 09:50 13:50 17:50 21:50
M	Troodos	Cyprus	02:00 06:00 10:00 14:00 18:00 22:00
N	Alexandria	Egypt	02:10 06:10 10:10 14:10 18:10 22:10
O	Malta	Malta	02:20 06:20 10:20 14:20 18:20 22:20
P	Haifa	Israel	00:20 04:20 08:20 12:20 16:20 20:20
Q	Split	Yugoslavia	02:50 06:50 10:50 14:50 18:50 22:50
Z	Cabo La Nao	Spain	Planned station
	La Grde	France	Planned station
	Ancona	Italy	Planned station
	Augusta	Italy	Planned station
	Cagliari	Italy	Planned station
	Roma	Italy	Planned station



LOCATION OF NAVTEX COAST STATIONS

★Operational Stations
 ★Planned Stations

★Douala
 II
 France

See page 2.

VII
 South Africa
 * NAVAREA VII has
 no coast stations.

VII
 South Africa

VIII
 India

* NAVAREA X has
 no coast stations.

X
 Australia

XI
 Japan

See page 6.

JRC

NAVAREA VIII

ID	Coast Station	Country	Tx Time (UTC)
G	Bombay	India	01:00 05:00 09:00 13:00 17:00 21:00
U	Madras	India	02:30 06:30 10:30 14:30 18:30 22:30

NAVAREA IX

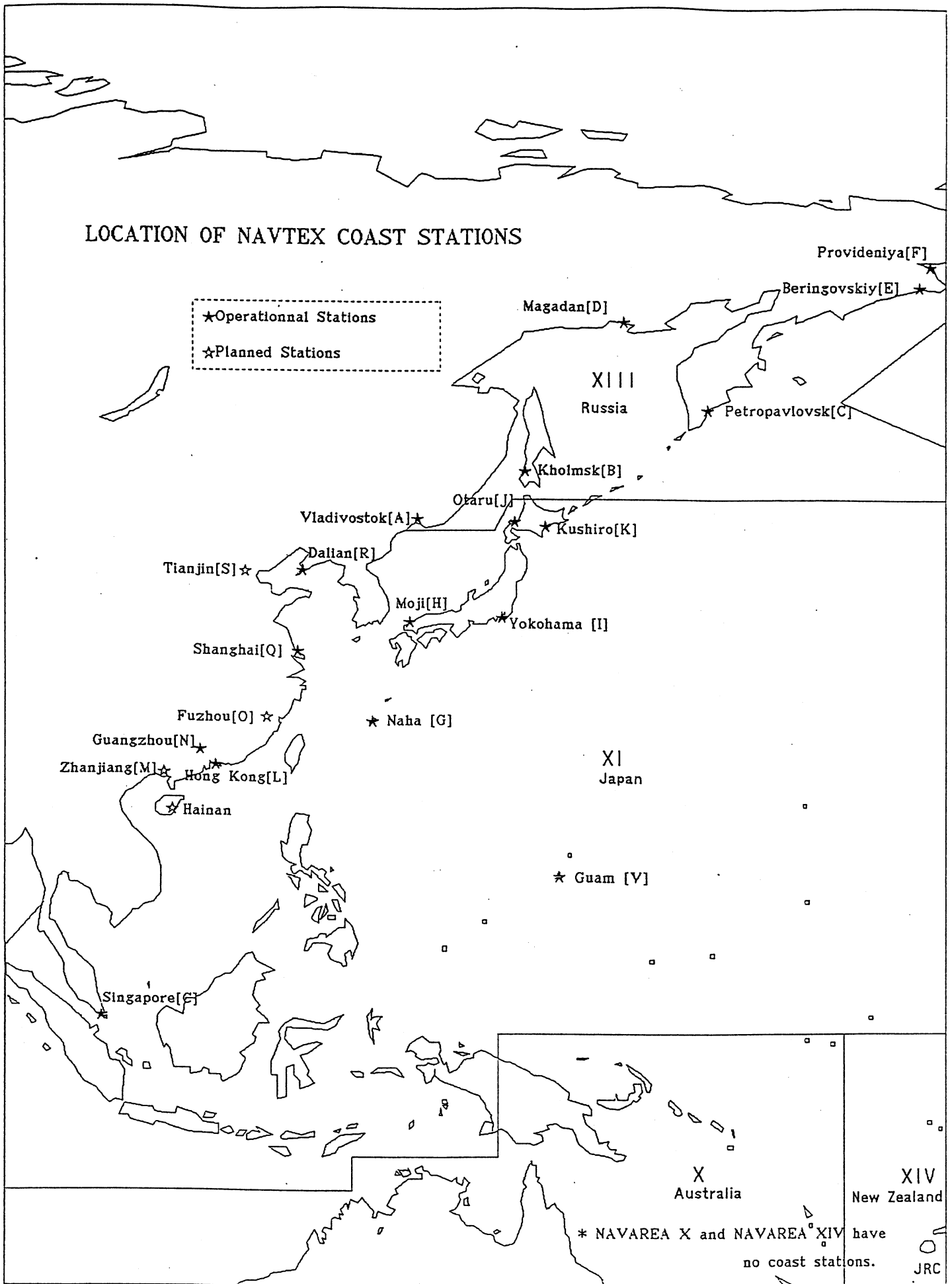
ID	Coast Station	Country	Tx Time (UTC)
B	Hamala	Bahrain	00:10 04:10 08:10 12:10 16:10 20:10
G	Dammam	Saudi Arabia	00:05 06:05 12:15 18:15
H	Jeddah	Saudi Arabia	Planned Station
X	Ismailia(Serapeum)	Egypt	07:50 11:50 19:50

※ NAVAREA II ... See page 2.

※ NAVAREA XI ... See page 6.

※ NAVAREA VII and NAVRIA X have no coast stations.

LOCATION OF NAVTEX COAST STATIONS



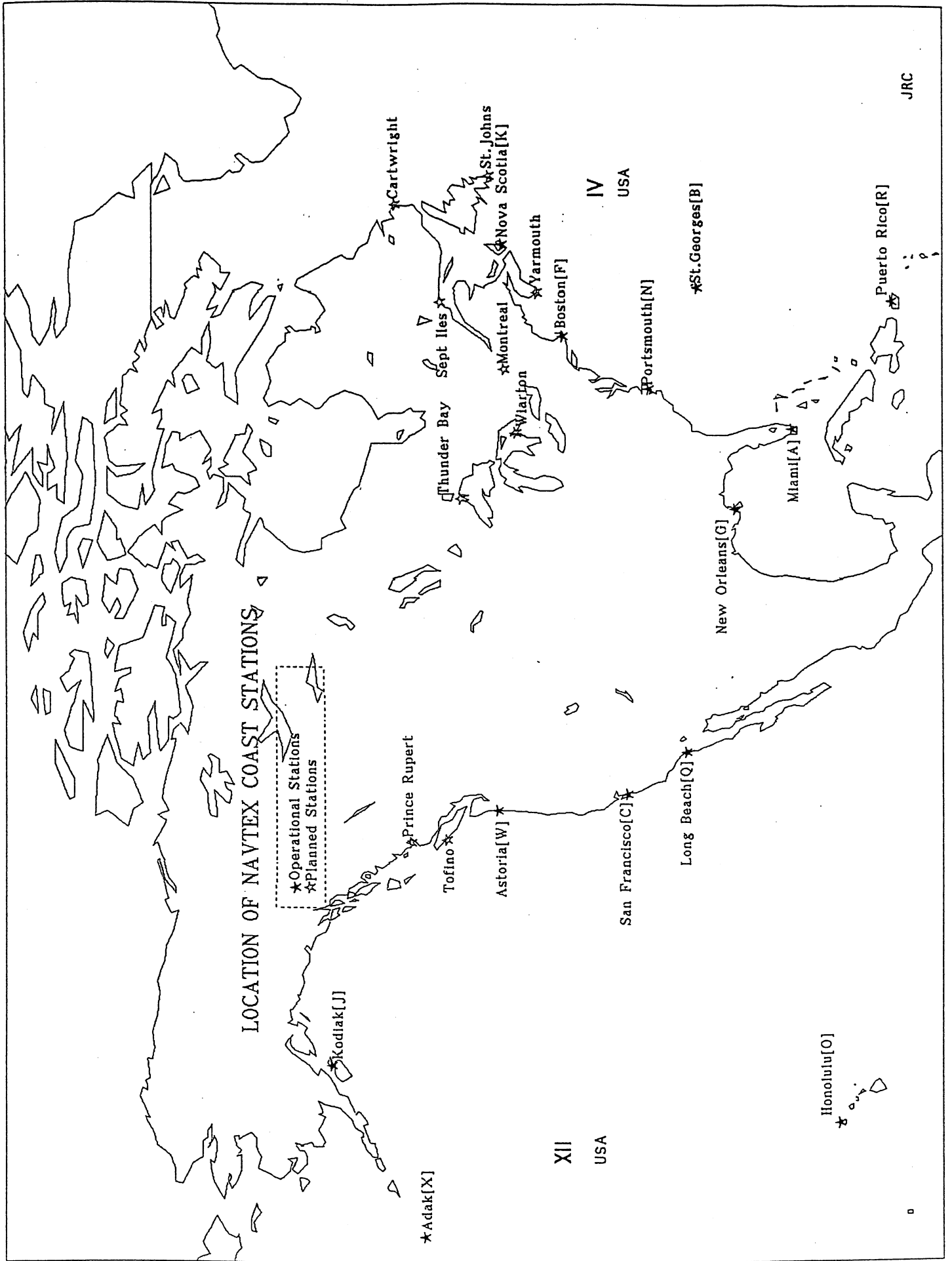
NAVAREA XI

ID	Coast Station	Country	Tx Time (UTC)
C	Jurong	Singapore	00:20 04:20 08:20 12:20 16:20 20:20
G	Naha (那覇)	Japan (日本)	01:00 05:00 09:00 13:00 17:00 21:00
H	Moji (門司)	Japan (日本)	01:10 05:10 09:10 13:10 17:10 21:10
I	Yokohama (横浜)	Japan (日本)	01:20 05:20 09:20 13:20 17:20 21:20
J	Otaru (小樽)	Japan (日本)	01:30 05:30 09:30 13:30 17:30 21:30
K	Kushiro (釧路)	Japan (日本)	01:40 05:40 09:40 13:40 17:40 21:40
L	Hong Kong (香港)	Hong Kong (香港)	02:00 06:00 10:00 14:00 18:00 22:00
M	Zhanjiang (湛江)	China (中国)	Planned station
N	Guangzhou (広州)	China (中国)	02:10 06:10 10:10 14:10 22:10
O	Fuzhou (福州)	China (中国)	Planned station
Q	Shanghai (上海)	China (中国)	02:40 06:40 10:40 14:40 22:40
R	Dalian (大連)	China (中国)	02:50 06:50 10:50 14:50 22:50
S	Tianjin (天津)	China (中国)	Planned station
V	Guam	U.S.A.	01:00 05:00 09:00 13:00 17:00 21:00
	Hainan	China (中国)	Planned station
		Korea (韓国)	Planned station
		Thailand	Planned station

NAVAREA XIII

ID	Coast Station	Country	Tx Time (UTC)
A	Vladivostok	Russia	00:00 04:00 08:00 12:00 16:00 20:00
B	Kholmsk	Russia	00:10 04:10 08:10 12:10 16:10 20:10
C	Petropavlovsk	Russia	00:20 04:20 08:20 12:20 16:20 20:20
D	Magadan	Russia	00:30 04:30 08:30 12:30 16:30 20:30
E	Beringovskiy	Russia	00:40 04:40 08:40 12:40 16:40 20:40
F	Provideniya	Russia	00:50 04:50 08:50 12:50 16:50 20:50

※ NAVAREA X and XIV have no coast stations.

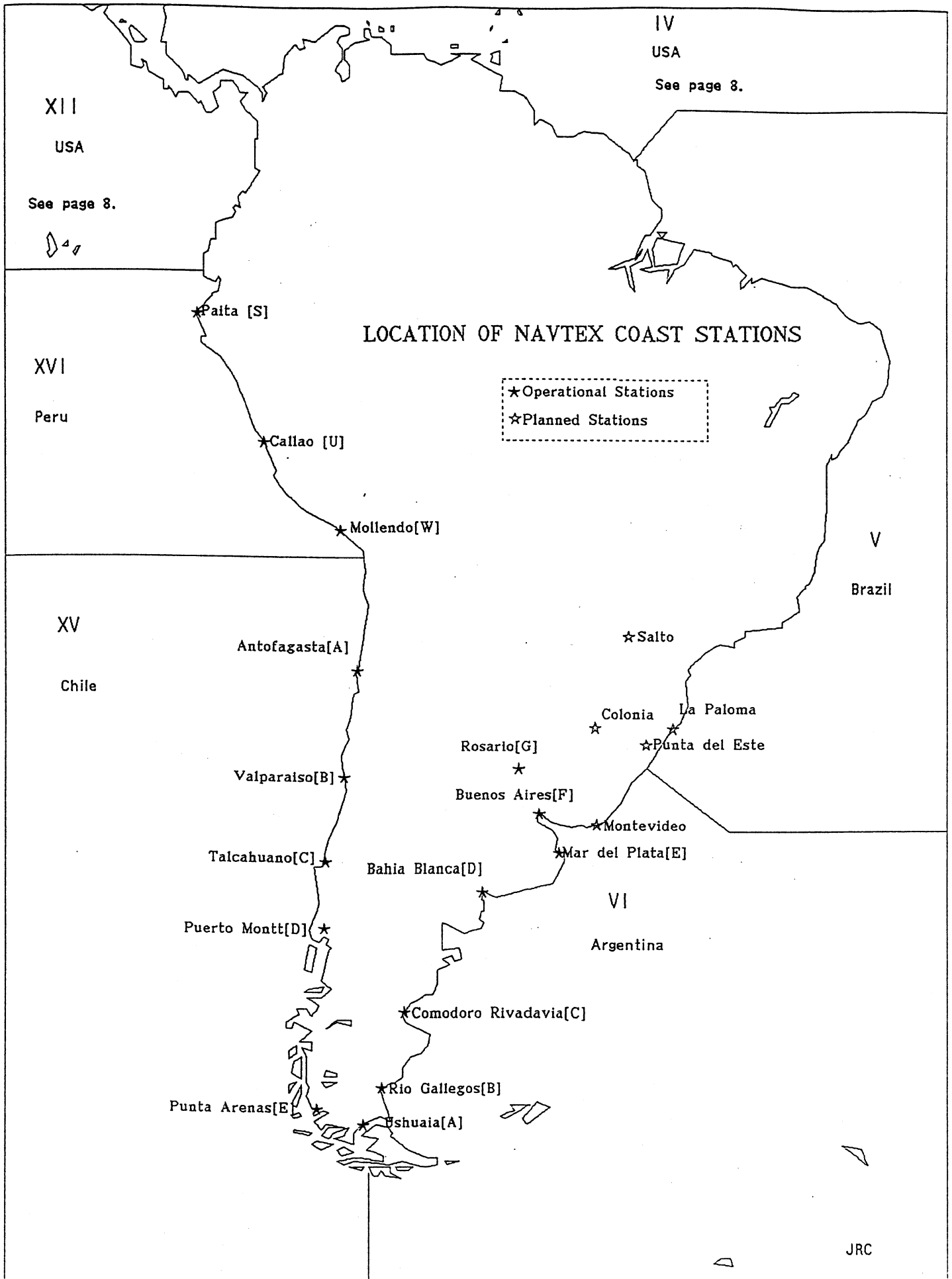


NAVAAREA IV

ID	Coast Station	Country	Tx Time (UTC)
A	Miami	U.S.A.	00:00 06:00 12:00 18:00
B	St. Georges	Bermuda	01:00 07:00 13:00 19:00
F	Boston	U.S.A.	04:45 10:45 16:45 22:45
G	New Orleans	U.S.A.	03:00 09:00 15:00 21:00
K	Sydney, Nova Scotia	Canada	00:40 05:40 09:40 13:40 17:40 21:40
N	Portsmouth	U.S.A.	01:30 07:30 13:30 19:30
R	San Juan, Puerto Rico	U.S.A.	04:15 10:15 16:15 22:15
	Cartwright	Canada	Planned station
	Montreal	Canada	Planned station
	St. Johns	Canada	Planned station
	Sept Iles	Canada	Planned station
	Yarmouth	Canada	Planned station
	Thunder Bay	Canada	Planned station
	Warton	Canada	Planned station

NAVAAREA XII

ID	Coast Station	Country	Tx Time (UTC)
C	San Francisco	U.S.A	04:00 10:00 16:00 22:00
J	Kodiak	U.S.A	03:00 09:00 15:00 21:00
O	Honolulu	U.S.A	00:40 06:40 12:40 18:40
Q	Long Beach	U.S.A	04:45 10:45 16:45 22:45
W	Astoria	U.S.A	01:30 07:30 13:30 19:30
X	Adak	U.S.A	00:00 05:00 12:00 17:45
	Prince Rupert	Canada	Planned station
	Tofino	Canada	Planned station



LOCATION OF NAVTEX COAST STATIONS

★ Operational Stations
 ★ Planned Stations

NAVAREA VI

ID	Coast Station	Country	Tx Time (UTC)
A	Ushuaia	Argentina	14:40 20:40 02:40 08:40
B	Rio Gallegos	Argentina	13:40 19:40 01:40 07:40
C	Comodoro Rivadavia	Argentina	12:40 18:40 00:40 06:40
D	Bahia Blanca	Argentina	14:10 20:10 02:10 08:10
E	Mar del Plata	Argentina	13:10 19:10 01:10 07:10
F	Buenos Aires	Argentina	11:10 17:10 23:10 05:10
G	Rosario	Argentina	12:10 18:10 00:10 06:10

NAVAREA V

ID	Coast Station	Country	Tx Time (UTC)
	Colonia	Uruguay	Planned station
	Laguna del sauce	Uruguay	Planned station
	La Paloma	Uruguay	Planned station
	Montevideo	Uruguay	Planned station
	Punta del Este	Uruguay	Planned station
	Salto	Uruguay	Planned station

NAVAREA XV

ID	Coast Station	Country	Tx Time (UTC)
A	Antofagasta	Chili	00:00 04:00 08:00 12:00 16:00 20:00
B	Valparaiso	Chili	00:10 04:10 08:10 12:10 16:10 20:10
C	Talcahuano	Chili	00:20 04:20 08:20 12:20 16:20 20:20
D	Puerto Montt	Chili	00:30 04:30 08:30 12:30 16:30 20:30
E	Punta Arenas	Chili	00:40 04:40 08:40 12:40 16:40 20:40

NAVAREA XVI

ID	Coast Station	Country	Tx Time (UTC)
S	Paita	Peru	03:00 07:00 11:00 15:00 19:00 23:00
U	Callao	Peru	03:20 07:20 11:20 15:20 19:20 23:20
W	Mollendo	Peru	03:40 07:40 11:40 15:40 19:40 23:40

※ NAVAREA IV ... See page 8.

※ NAVAREA XII ... See page 8.

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