NCR-333

NAVTEX RECEIVER

INSTRUCTION MANUAL

JRC Japan Radio Co., Ltd.

Preface

Thank you for purchasing NCR-333 NAVTEX Receiver.

The NAVTEX receiver automatically receives NAVTEX service broadcasts supplied in English and other optional languages.

- Be sure to read this manual for full comprehension before using the equipment.
- Save this manual near at hand for quick reference in the future.
  Make use of this manual when experiencing operation difficulties.

Before Operation

Concerning the symbols

This manual uses the following symbols to explain correct operation and to prevent injury or damage to property.
The symbols and descriptions are as follows. Understand them before proceeding with this manual.

⚠WARNING	Indicates a warning that, if ignored, may result in serious injury or even death.
⚠CAUTION	Indicates a caution that, if ignored, may result in injury or damage to property.

Examples of symbols

The △ symbol indicates caution (including DANGER and WARNING).
The illustration inside the △ symbol specifies the content of the caution more accurately. (This example warns of possible electrical shock.)

The ⃠ symbol indicates that performing an action is prohibited.
The illustration inside the ⃠ symbol specifies the contents of the prohibited operation. (In this example disassembly is prohibited.)

The ● symbol indicates operations that must be performed.
The illustration inside the ● symbol specifies obligatory instructions. (In this example unplugging is the obligatory instruction.)

Handling Precautions

⚠ WARNING

Do not disassemble or customize this unit. Doing so may cause fire, electrical shock or malfunction.

Do not get this equipment wet or spill any liquids on or near this equipment. Doing so causes electrical shock or malfunction.

Do not use a voltage other than specified. Doing so may cause fire, electrical shock or malfunction.

Do not attempt to inspect or repair the inside of this equipment with the exception of qualified service personnel, as doing so may cause fire, electric shock or malfunction. If any malfunctions are detected, contact our service center or agents.

Handling Precautions

⚠ CAUTION

Do not use this equipment for anything other than specified.
Doing so may cause malfunction or damage to persons.

Do not adjust the trimmer resistors or the trimmer capacitors on the PCB unit.
Doing so may cause malfunction or damage to persons. They are preset at the factory.

Do not install this equipment in a place other than specified or in one with excessive humidity, steam, dust or soot. Doing so may cause fire, electric shock, malfunction or damage to persons.

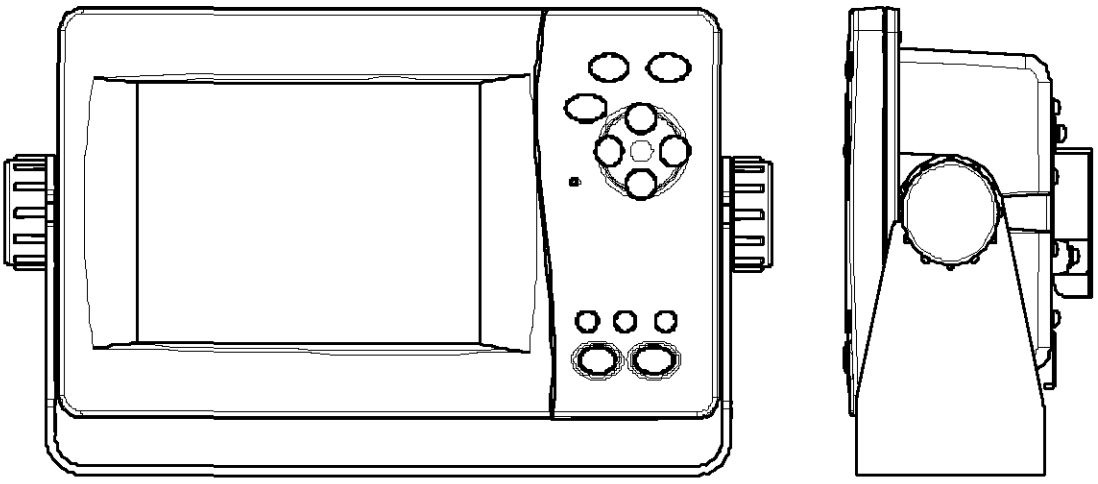
Do not place this equipment anywhere vibration or impact is likely to occur.
Doing so may cause a fall or damage to property and persons.

Do not place any objects on this equipment.
Doing so may cause a fall, malfunction or damage to property and persons.

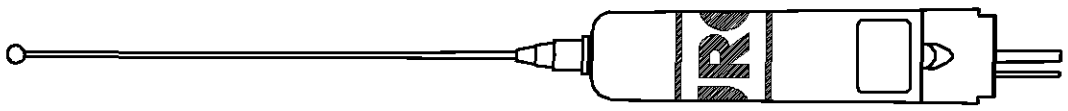
Leave installation of this equipment to our service center or agents.
Installation by an unauthorized person may lead to malfunction.

External Views

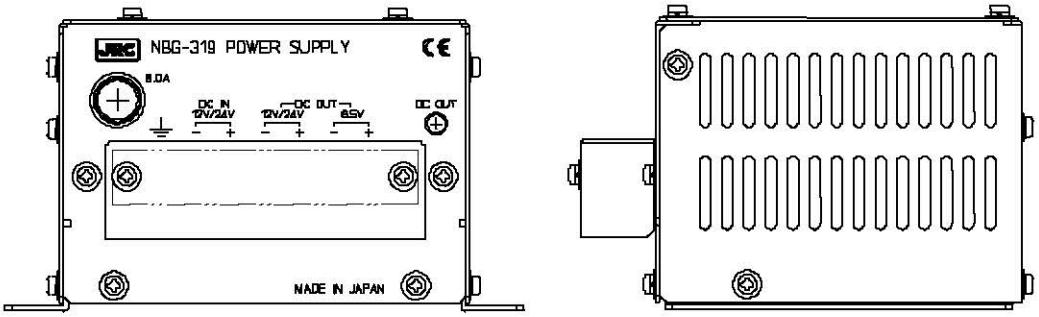
NCR-333 NAVTEX Receiver



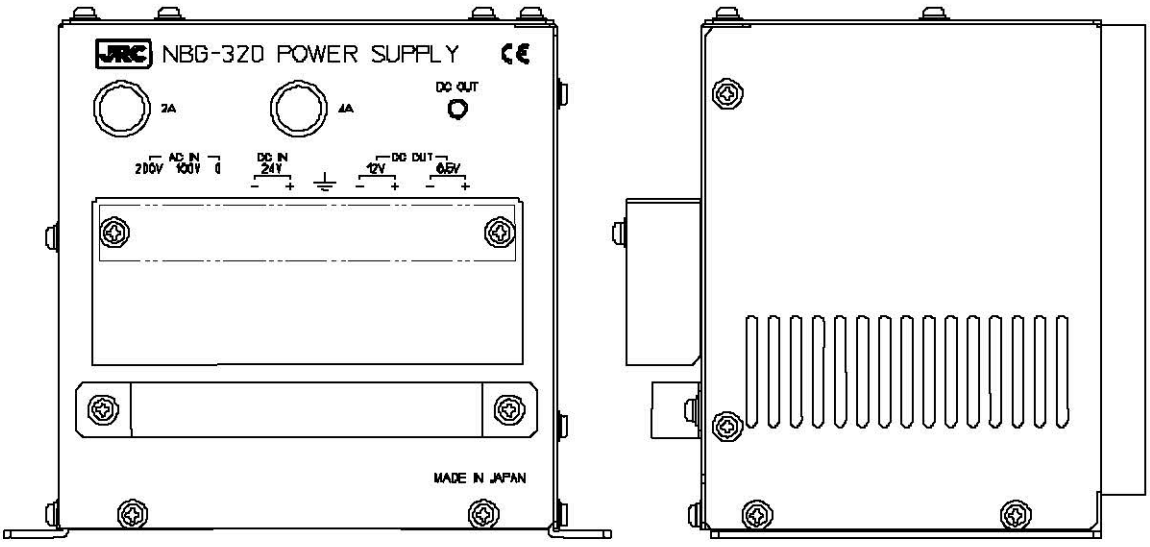
NAW-333 NAVTEX Antenna



NBG-319 Power Supply Unit



NBG-320 Power Supply Unit



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Appendix LOCATION & TIME SCHDULE FOR NAVTEX COAST STATIONS

Environmental information

1. GENERAL

1.1 Outlines

The NAVTEX NCR-333 function receives and displays the various types of information broadcast at frequencies of 518 kHz, 490 kHz and 4209.5 kHz, such as: navigational warning, meteorological warning, search and rescue information, and other types of information. NCR-333 also provides the function that selects information type and coast station for intended uses.

1.2 Features

● Receiving NAVTEX broadcasts

NCR-333 receives NAVTEX broadcasts automatically on 518 kHz, 490 kHz, and 4209.5 kHz.

● Large screen allows comfortable visibility

NCR-333 has a 5.7-inch LCD screen display with clear visibility.
It also provides three different character sizes of display, and can be selected at your convenience.

● Message saving function

NCR-333 can store up to 200 message identification codes for 70 hours. Moreover, the stored message of each channel can be saved up to 50 messages permanently.

● Automatically receiving station setting function

NCR-333 can select receiving stations automatically on GPS position data is valid.

● Permanent storage of data settings

NCR-333 can set and store the message type and seashore station that receive to internal memory. The data, therefore, does not need to be re-set, even after power has been turned off.

● Dual voltage supply input

NCR-333 can be used on wither 24 V_{DC} or 12 V_{DC} vessels.

● Self-diagnosis Function

NCR-333 has automatic self-diagnosis function. This function allows easy maintenance and high system reliability.

● Connection to external equipment

NCR-333 can be used with the JRC Total Navigator (ECDIS) and external serial printers.

1.3 Components

1.3.1 Standard Components

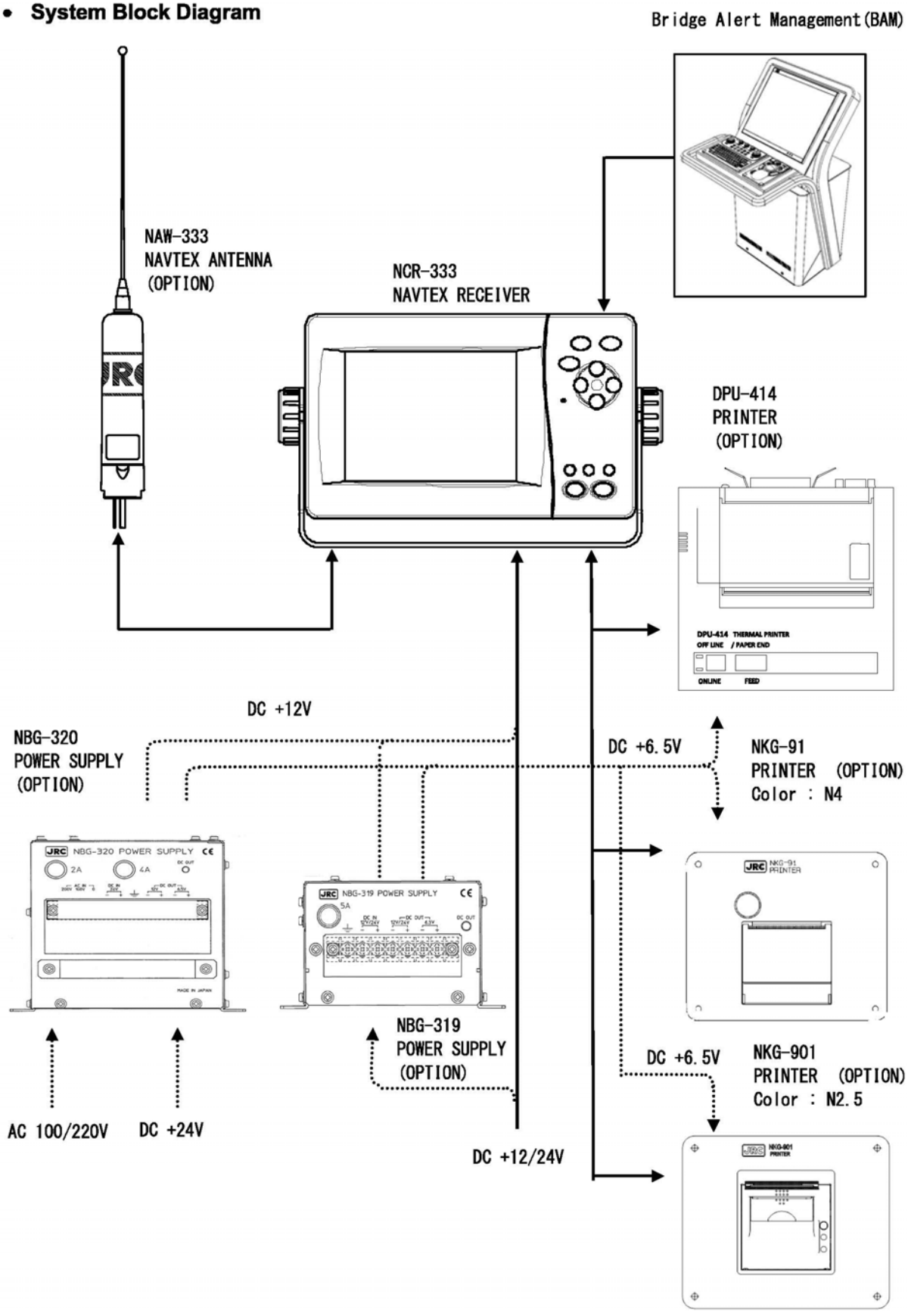
No.	Name	Type	Quantity	Remarks
1	NAVTEX Receiver	NCR-333	1	
1-1	Tapping screws	MPTG31659	1	4 tapping screws
1-2	Instruction manual	7ZPJD0304E	1	Present volume
1-3	Operation card	7ZPJD0306B	1	
1-4	Antenna cable	7ZCJD0251	1	0.5 m

1.3.2 Options

No.	Options	Type	Quantity	Remarks
1	NAVTEX Antenna	NAW-333	1	Whip antenna for NCR-333 (Include fitting band)
2-1	Power supply unit	NBG-319	1	12 / 24V_{DC} input
2-2	Power supply unit	NBG-320	1	100/220V_{AC} Manual Setting 24V_{DC} input
3-1	External printer	DPU-414	1	
3-2	Printer connection kit	7ZXJD0076	1	7ZCJD0257C and 2-pin terminal block
3-3	Printer power cable	7ZCJD0257C	1	1.5 m for DPU-414
3-4	Printer paper	6ZCAF00252A	1	112mm x φ50mm 25m x1 For DPU-414
4-1	External printer	NKG-91	1	For wall mount or flash mount Color:N4
4-1-1	Wall mount kit	MPBP31446A	1	For NKG-91. Color:N4
4-2	External printer	NKG-901	1	For wall mount or flash mount Color:N2.5
4-2-1	Wall mount kit	MPBP32159	1	For NKG-901. Color:N2.5
4-3	Printer paper	7ZPJD0384	1	58mm x φ50mm 25m x1 For NKG-91/NKG-901
5-1	Printer cable	7ZCJD0254A	1	D-sub 9-pin 1.5 m
5-2	Printer cable	7ZCJD0270B	1	D-sub 9-pin 10 m
6-1	NAVTEX buzzer	CGC-300B	1	External buzzer
6-1-1	External buzzer connection kit	7ZXJD0074	1	1.5 m cable and 2-pin terminal block
7	Console mount kit	MPBC39314	1	
8-1	DMC	NCH-321A	1	Distress Message Controller
8-2	DMC	NCH-3210	1	Distress Message Controller
9	Data connection kit	7ZXJD0075	1	1.5 m cable and 3-pin terminal block
10	Software for PC	CYC-333	1	

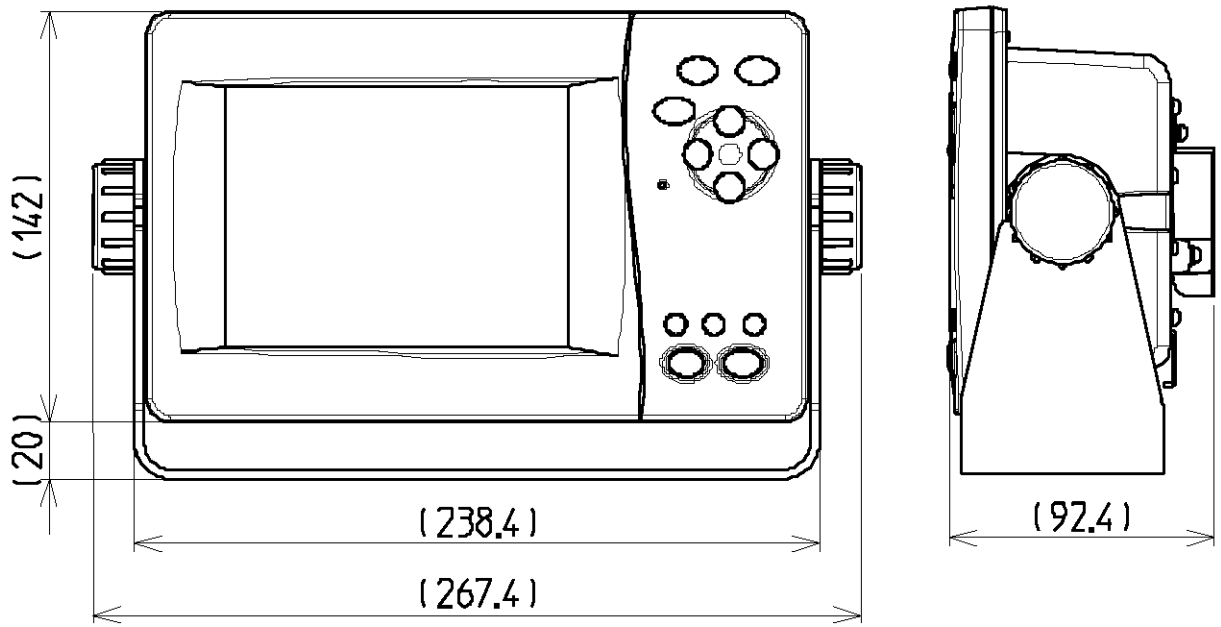
1.3.3 Configuration

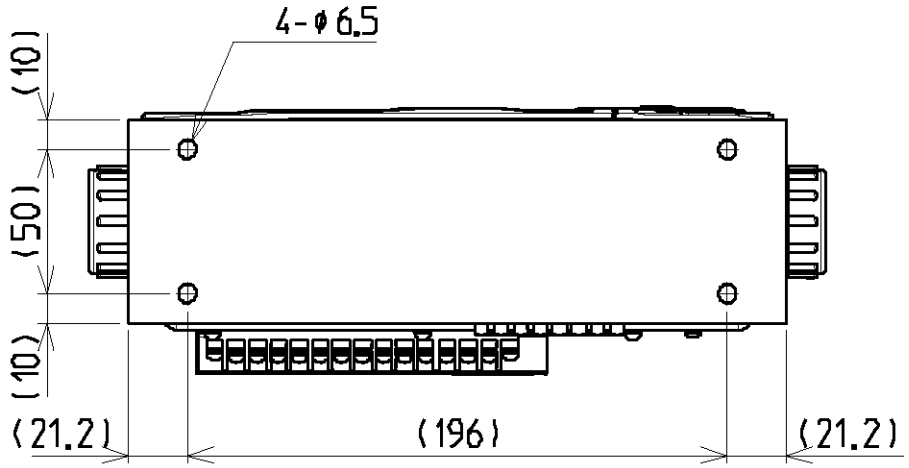
- **System Block Diagram**



1.4 Outline

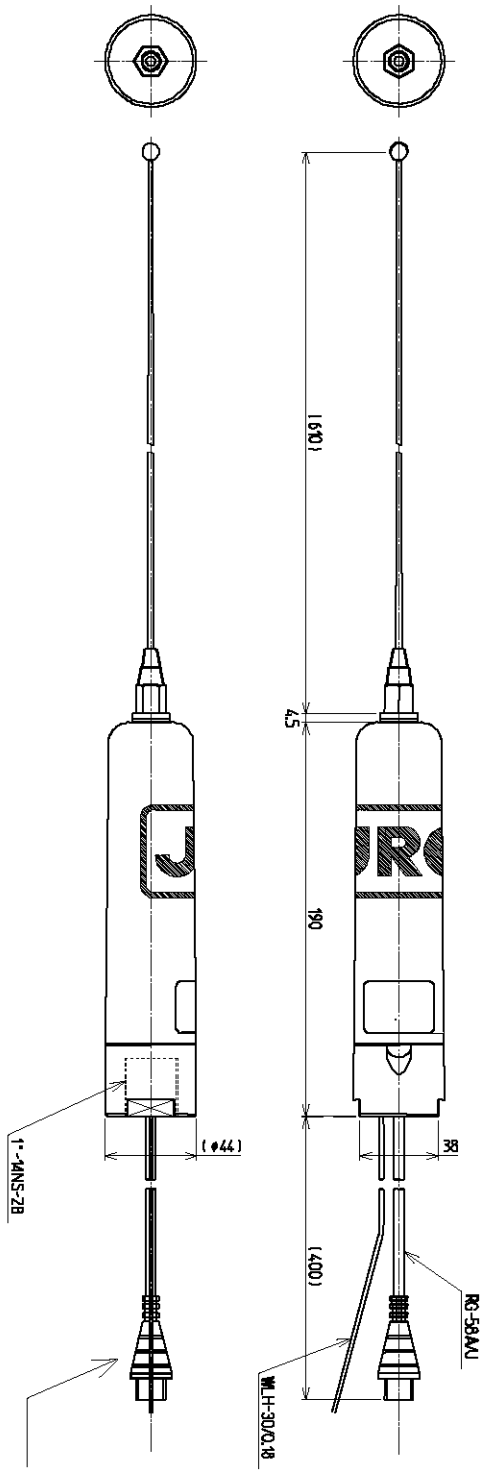
- **Outline Drawing of NCR-333 NAVTEX Receiver**





Unit: mm
Mass: approx. 2.1 kg
Color: N2.5

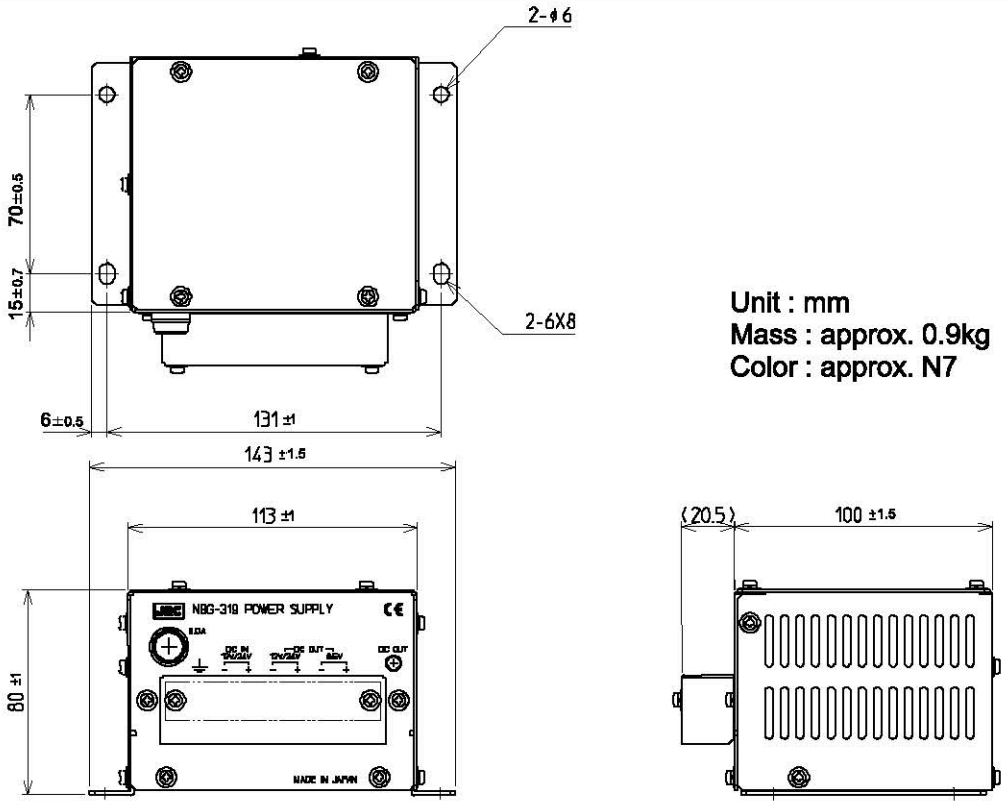
- **Outline Drawing of NAW-333 NAVTEX Antenna**



N type (Female)

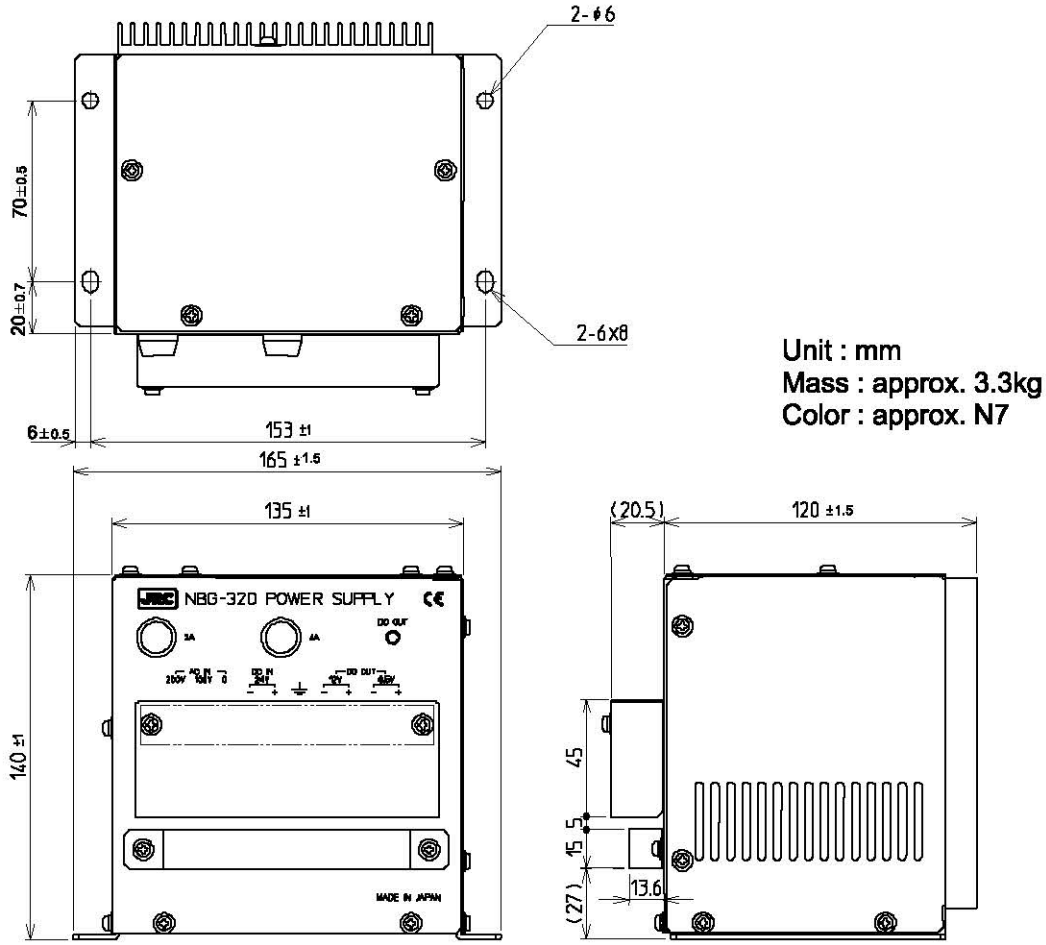
Unit: mm
Mass: approx. 0.3 kg

- **Outline Drawing of NBG-319 Power Supply Unit**



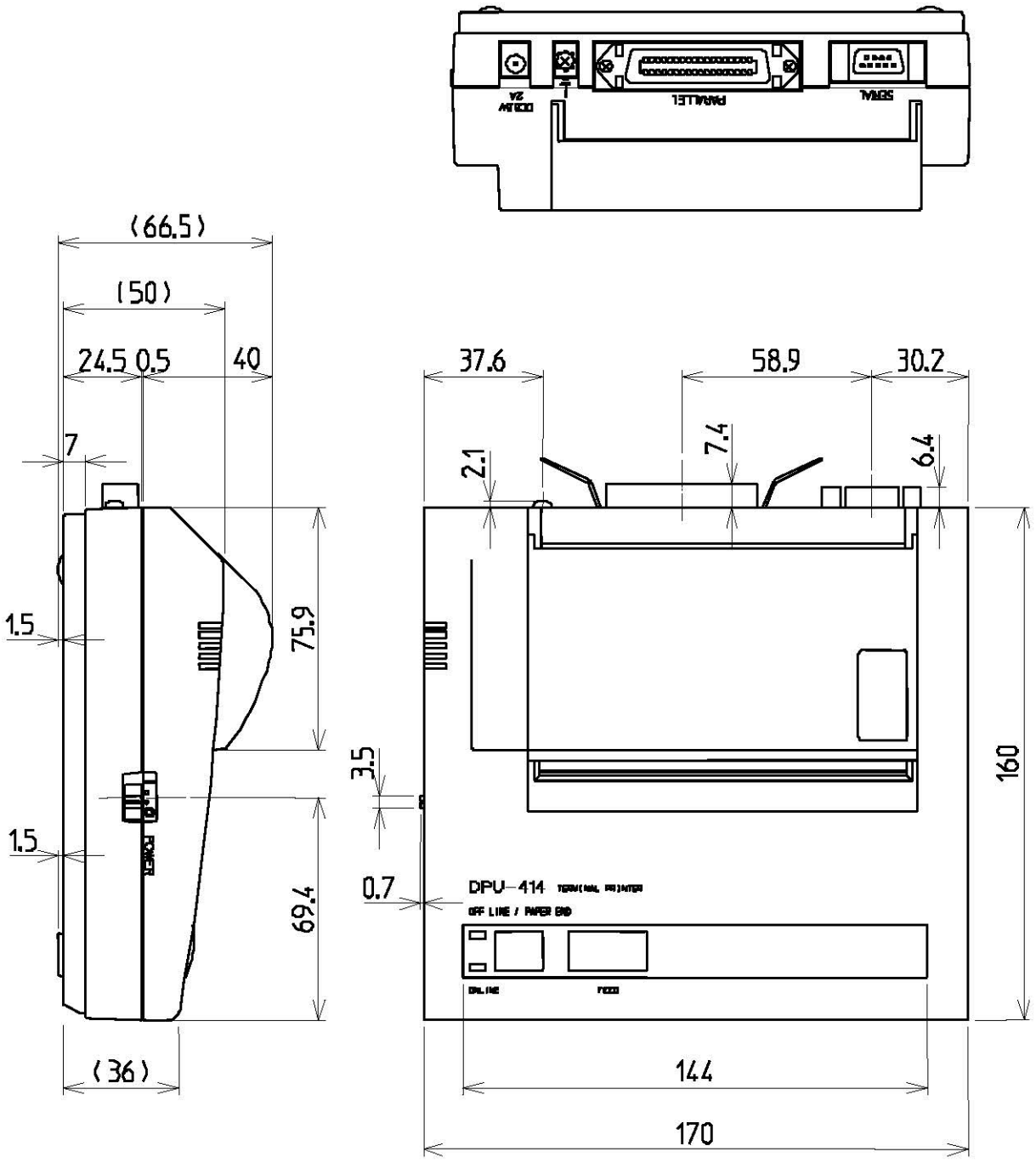
Unit : mm
Mass : approx. 0.9kg
Color : approx. N7

- **Outline Drawing of NBG-320 Power Supply Unit**



Unit : mm
Mass : approx. 3.3kg
Color : approx. N7

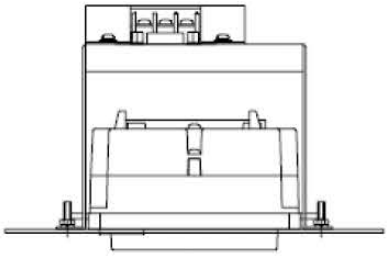
- **Outline Drawing of DPU-414 Printer**

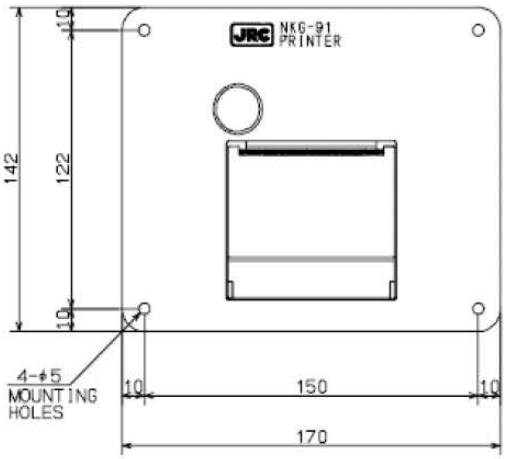


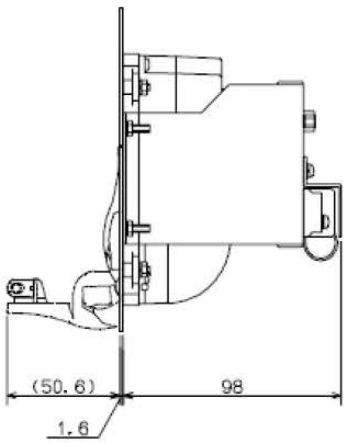
Unit: mm
Mass: approx. 0.7 kg

• Outline Drawing of NKG- 91 Printer

● Flush mount type

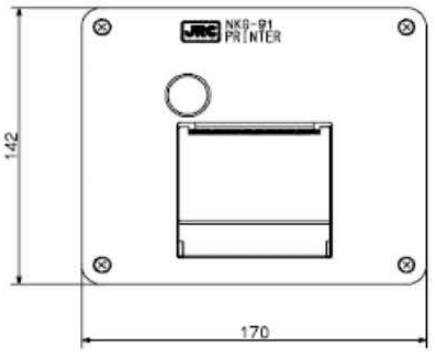


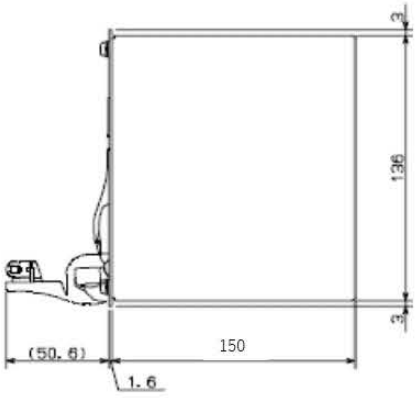


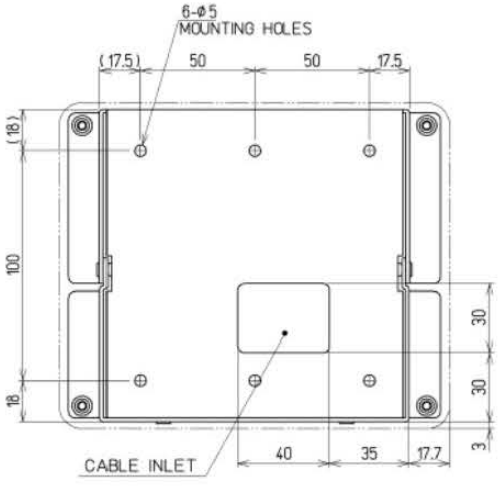


Unit: mm
Mass: approx. 0.8kg
Color : approx. N4

● Wall mount type
In case using Wall mount kit(MPBP31446A)



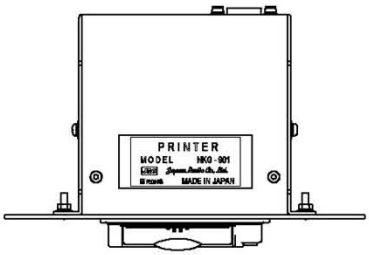




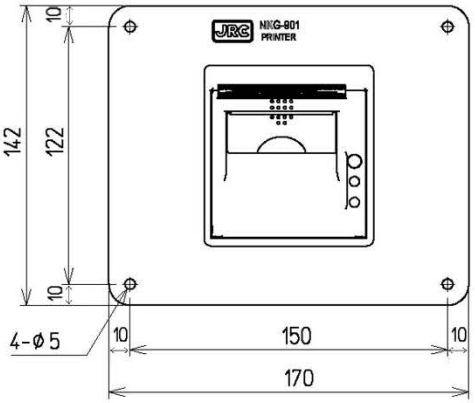
Unit: mm
Mass: approx. 1.5kg

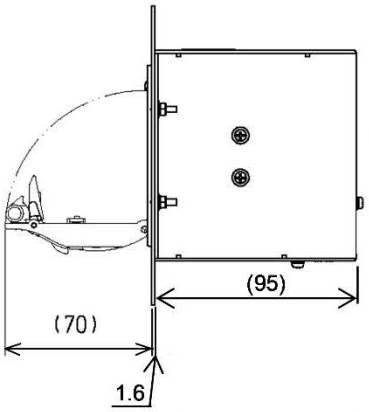
• Outline Drawing of NKG- 901 Printer

● Flush mount type

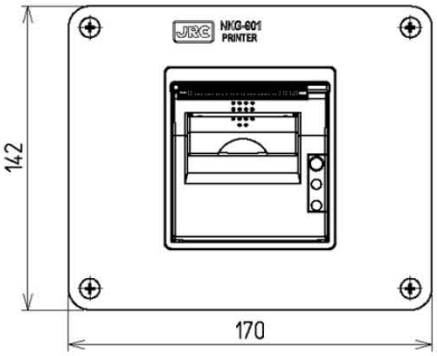


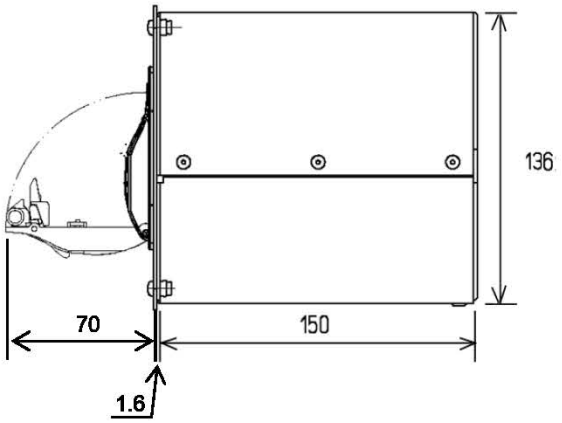
Unit: mm
Mass: approx. 0.8kg
Color : approx. N2.5

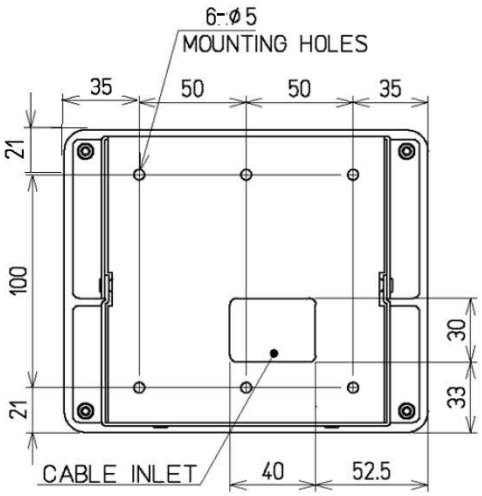




● Wall mount type
In case using Wall mount kit(MPBP32159)







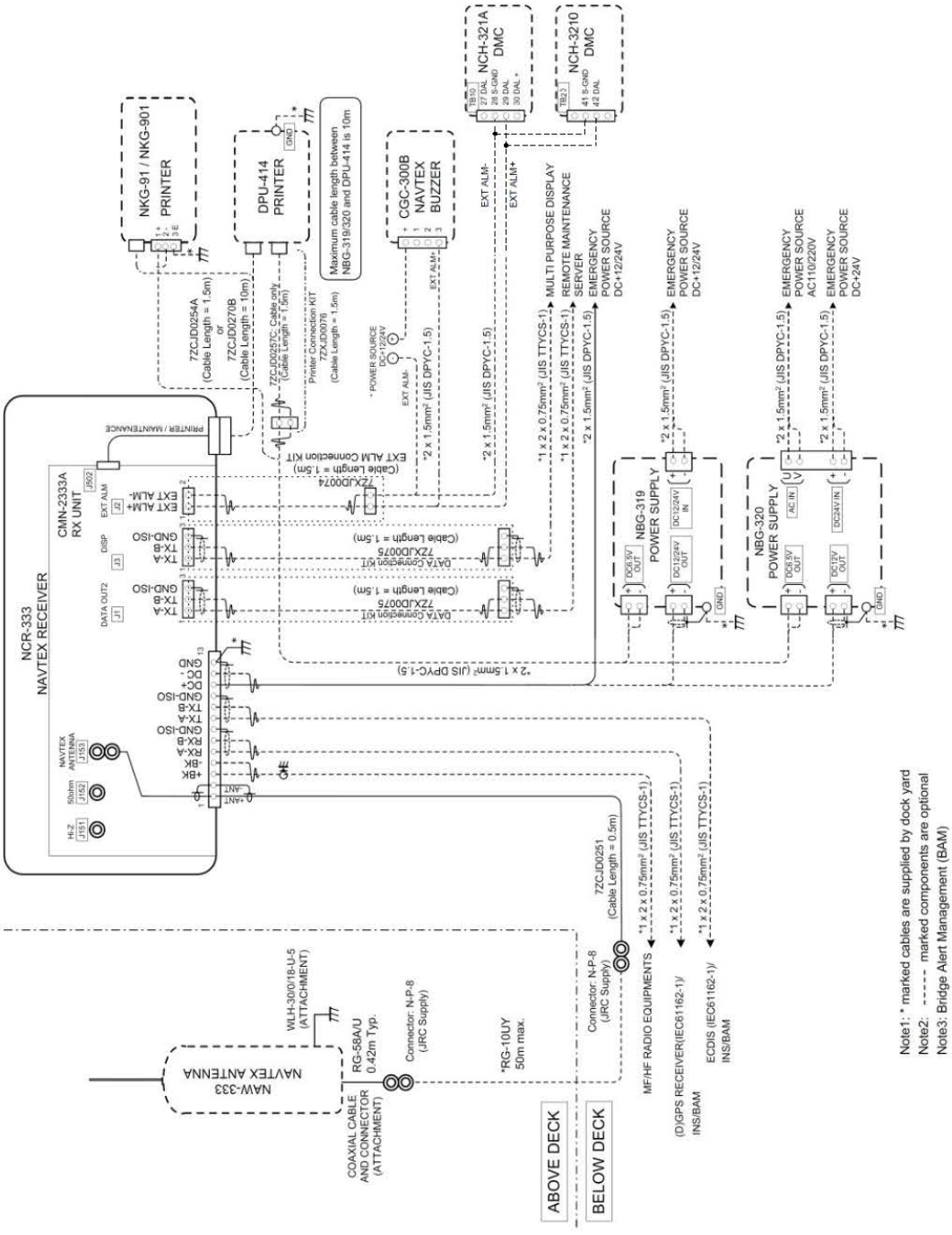
Unit: mm
Mass: approx. 1.5kg

2. INSTALLATION DIAGRAM

Notes:

⚠ CAUTION

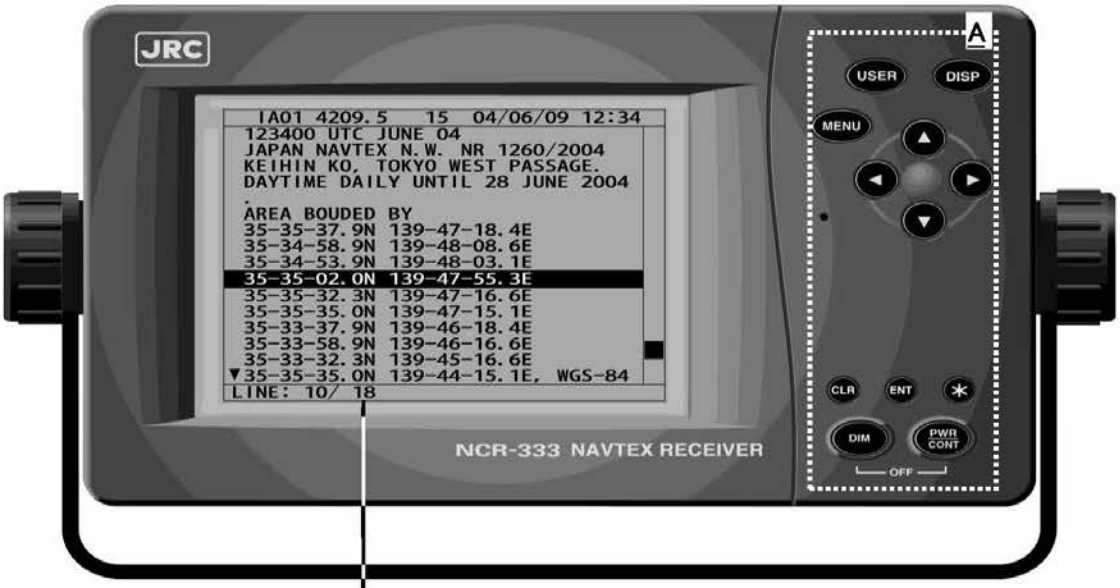
Leave installation of this system to our service center or agents.
Installation by an unauthorized person may result in malfunction.



3. PART NAMES AND FUNCTIONS

3.1 NCR-333 NAVTEX Receiver

● Front view



LCD Panel

For further information, refer to "● Display indicators" and "4. DISPLAY".

A: Key Panel

USER Key

Displays the screen assigned to this key. Refer to "6.3.3.5 USER KEY" about the setting of USER key.

DISP Key

Changes the screen, refer to "4. DISPLAY".

MENU Key

Displays the "Main Menu".

Up, Down, Left, Right Key

Moves the cursor, scrolls the display screen, and selects the item.

Buzzer

CLR Key

Clears input errors or cancel operations. Turns off the buzzer sound.

ENTER Key

Determines selection of an item and fixes a setup.

*** Key**

Displays the small window.

DIMMER Key

Adjusts the back light brightness of the LCD.

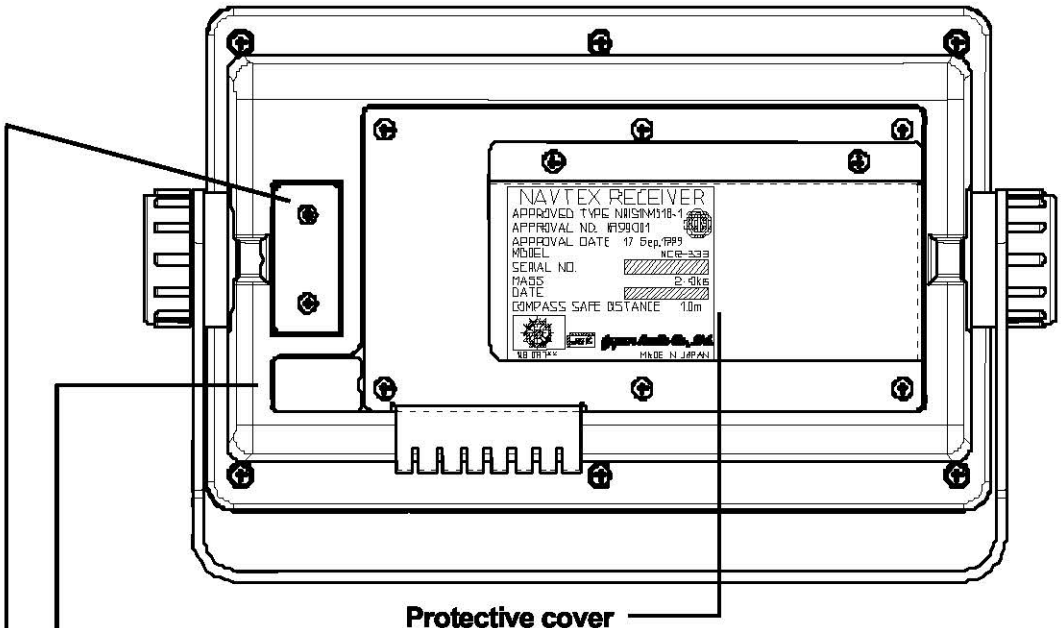
POWER/CONTRAST Key

Turns the power ON. Adjusts the contrast of the LCD while power is turned on.

Power Off

Turns the power off with pressing the PWR/CONT key and the DIM key at the same time.

● Rear view



Protective cover

To connect the antenna cable and the power cable, remove this cover.

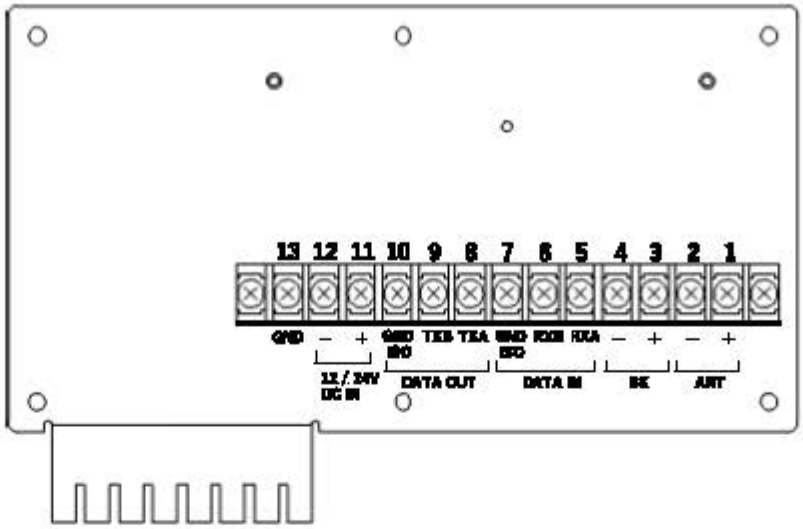
External equipments connector

ECDIS, external buzzer, and MPD (Multi purpose display) cables are connected to the connector.

Printer/Maintenance connector

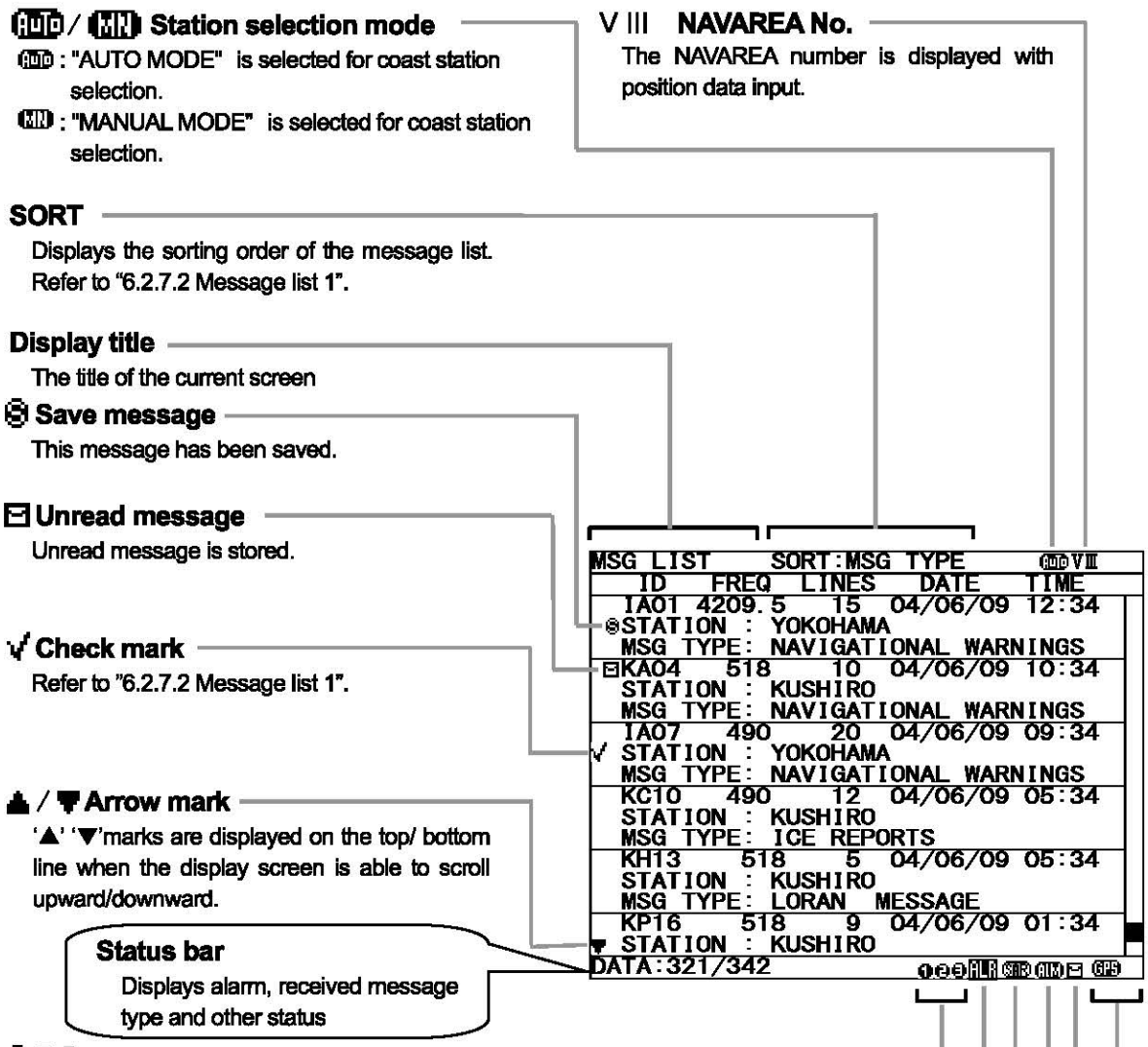
Serial printer and Maintenance PC cables are connected to the connector.

● Rear panel (Terminal)



Terminal Number and Name			Description
1	ANT	ANT +	Connect an antenna cable.
2		ANT -	
3	BK	BK +	Connect the key lines leading from the transmitter.
4		BK -	
5	DATA IN	RXA	Connect the serial communication cable with INS / External GPS / BAM
6		RXB	
7		GND ISO	Connect the isolated signal ground cable for serial communication.
8	DATA OUT	TXA	Connect the serial communication cable with INS / ECDIS / BAM
9		TXB	
10		GND ISO	Connect the isolated signal ground cable for serial communication.
11	12/24V DC IN	+	Connect the power supply cable. The voltage range of the power supply between 10.8 and 31.2 V_{DC}.
12		-	
13	GND		This terminal is for electrical grounding to the vessel.

● Display indicators



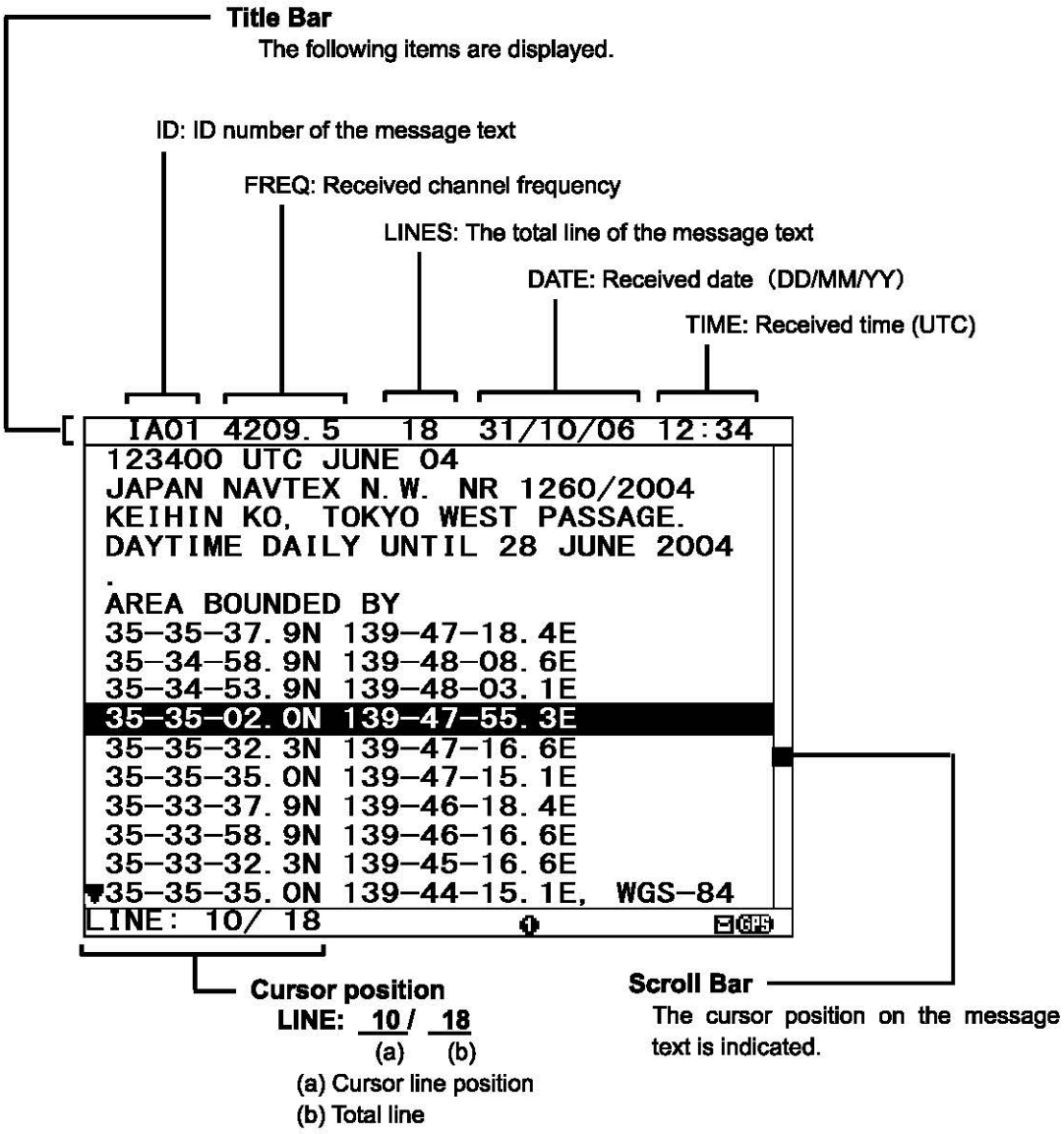
4. DISPLAYS

4.1 Displays

Each time the DISP key is pressed, the screen is switched in the order below:
Message text -> Message list 1 -> Message list 2 -> Selected message list -> Position/date -> ...
After NCR-333 is started, a message text screen is displayed.

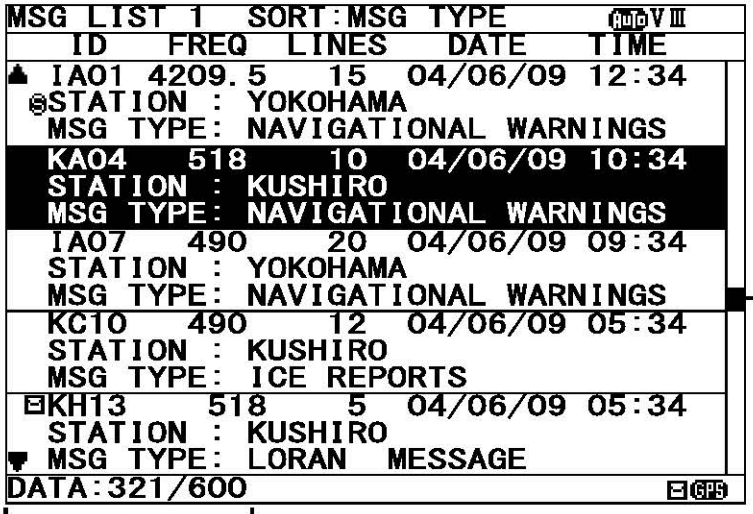
4.1.1 Message text screen

Message text screen displays the text of the received message.
This screen is displayed after NCR-333 is turned on, or after receiving a message.



4.1.2 Message list 1 screen

Message list 1 screen displays the list of the stored messages.
This screen is displayed by indicating ID, FREQ, LINES, DATE (DD/MM/YY), TIME, STATION and Message Type of each message.
Move the cursor up/down to select the message, and press the ENT key to display the message text.

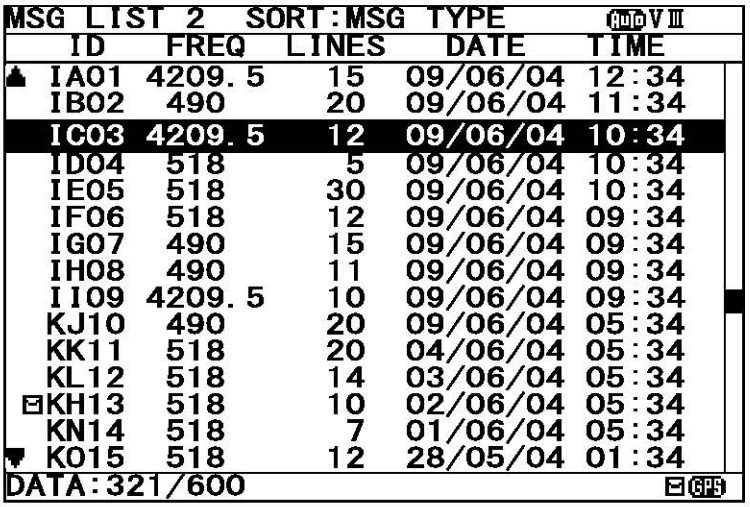


Cursor position
DATA: 321 / 600
(a) (b)
(a) Cursor data position
(b) Total data

Scroll bar
The cursor position on the total message data is indicated.

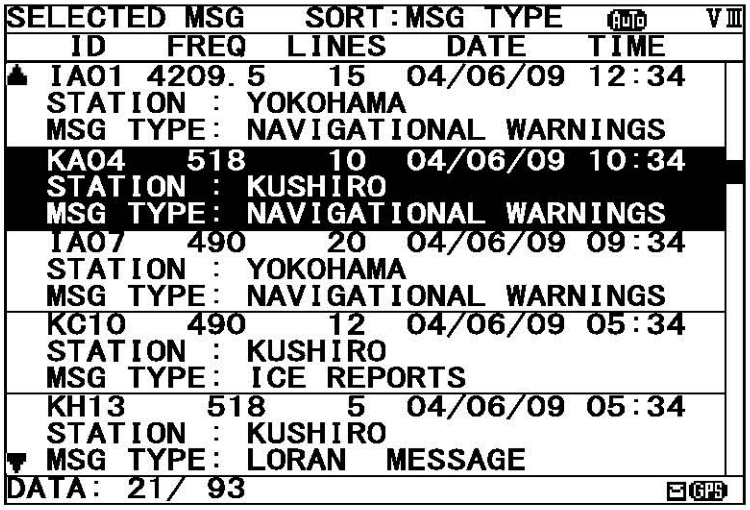
4.1.3 Message list 2 screen

The message list 2 displays more message indexes than the message list 1, by indicating only ID, FREQ, LINES, DATE (DD/MM/YY), and TIME of each message.
Move the cursor up/down to select the message, and press the ENT key to display the message text.



4.1.4 Select message list screen

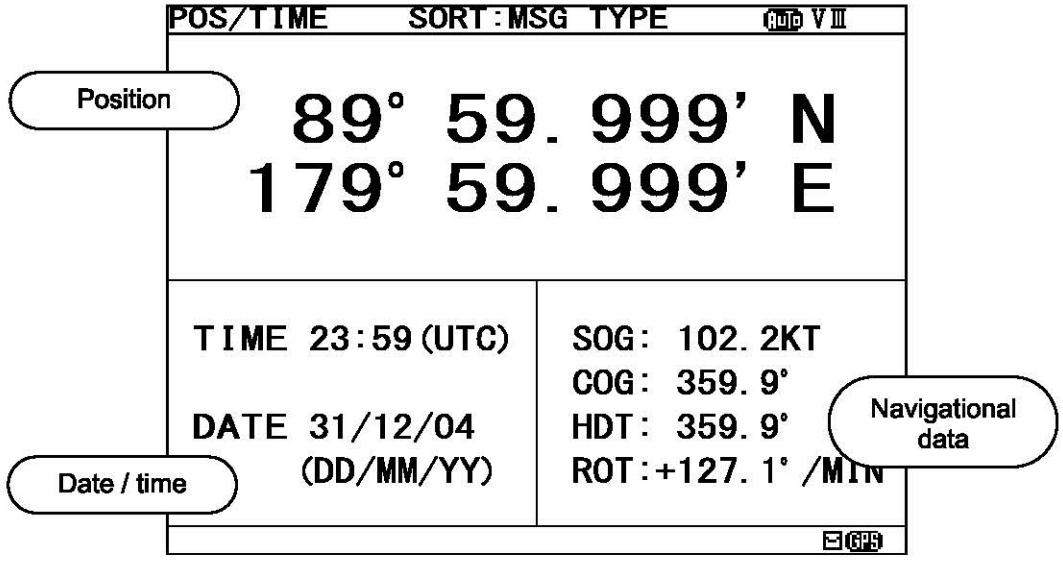
Select message list screen displays the list of the selected messages.
This screen is displayed by indicating ID, FREQ, LINES, DATE (DD/MM/YY), TIME, STATION and Message Type of each message.
Move the cursor up/down to select the message, and press the ENT key to display the saved message text.



4.1.5 Position/date screen

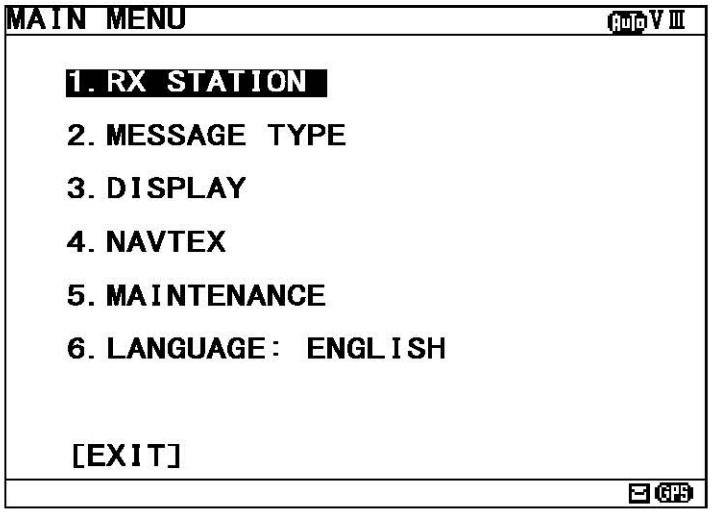
Position/date screen displays time, position, navigational data (SOG, COG, HDT, and ROT) when GPS data is valid.
These information is not displayed when GPS is not connected or when E,M,N,S are displayed next to 'GPS' on the lower right of the screen.

(E:Estimated mode, M:Manual input mode, S:Simulator mode, N:Invalid)



4.1.6 Setup screen

To display "Main menu", press the MENU key.
Refer to "6.3 MAIN MENU" for NCR-333 settings



5. INSTALLATION

5.1 Installation

5.1.1 Selection of location

The NAVTEX NCR-333 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 followings.

⚠ WARNING

- The installation location should be free from direct sunlight.
- The length of the grounding wire should be minimized.
- 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.
- The distance from the magnetic compass should be at least 1 meter.
- 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.

⚠ CAUTION

Contact our service center or agents for equipment installation.
Need the special knowledge as the selection of antenna place, the setting of equipment connected to this equipment and so on.

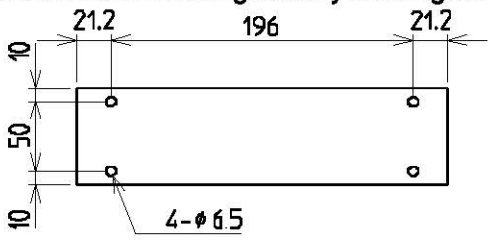
5.1.2 Mounting

Mount the NCR-333 on a table top, a bulkhead, or a ceiling by using the mounting base. Opening the case is not necessary for mounting.

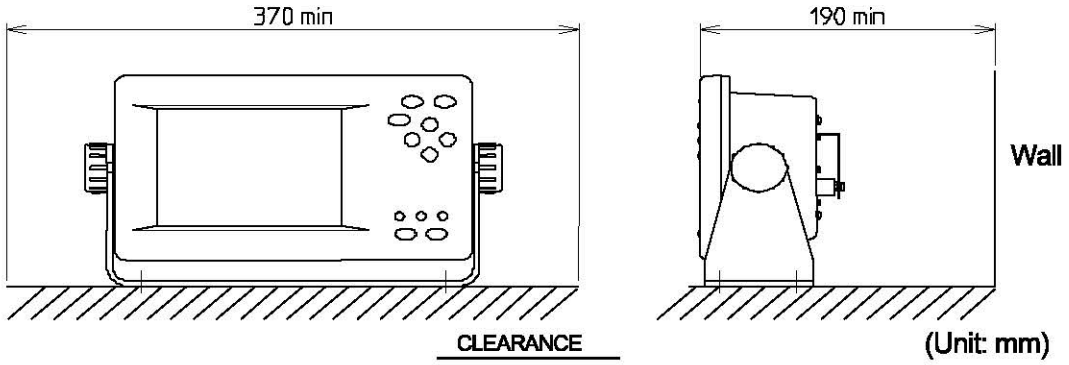
And keep a clearance for the maintenance (refer to figure below).

The mounting procedure is as follows;

- Loose the two knobs to remove the mounting base.
- Mount the mounting base on the selected location.
- Install the case on the mounting base by securing the two knobs.



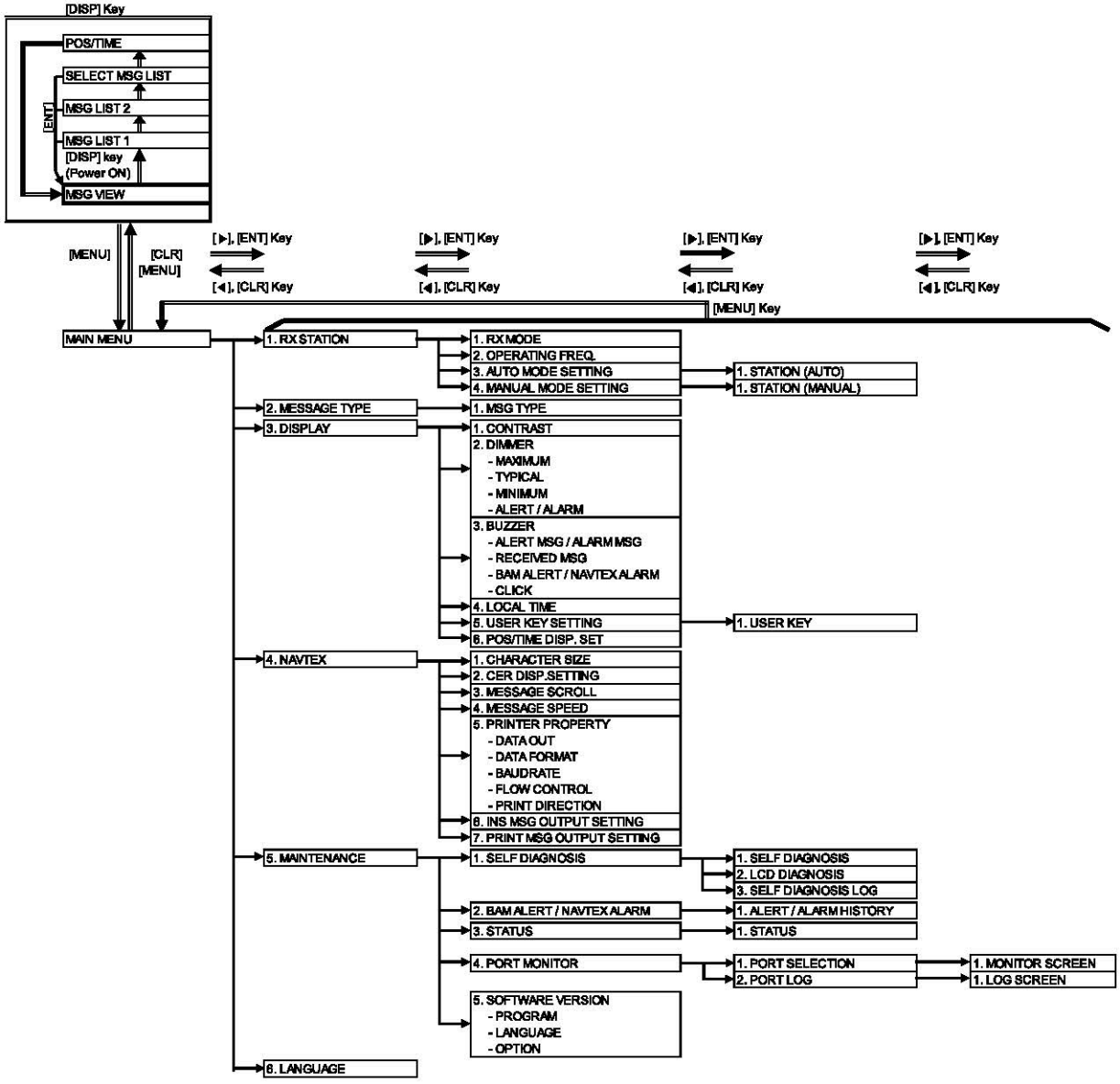
MOUNTING BASE (BOTTOM VIEW)



Space required for receiver installation

6. OPERATION

6.1 Menu Tree



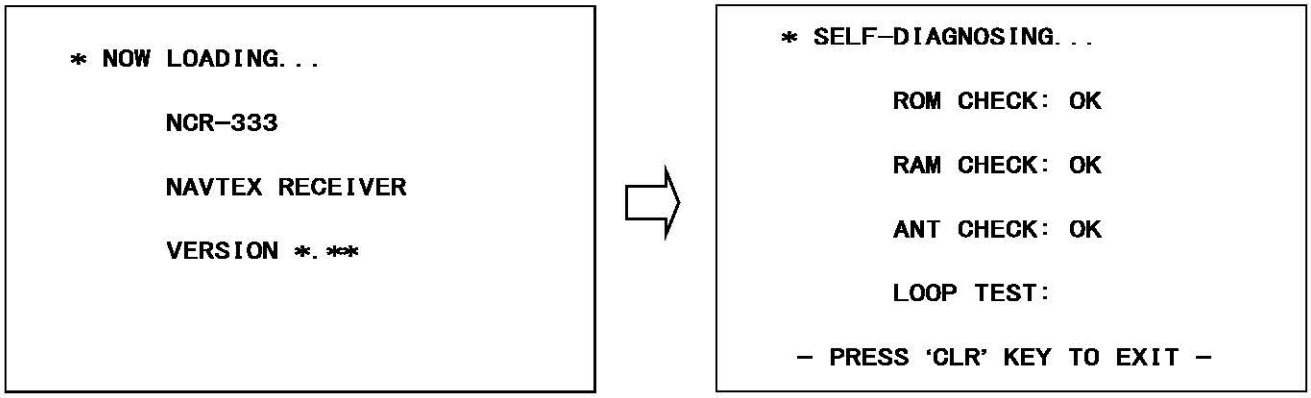
6.2 Basic Operation

6.2.1 Turning ON the power

Holding down the PWR/CONT key turns on the power, the starting screen appears, and then the self-diagnosis screen appears for 15 seconds later. After diagnosis is finished, message text screen appears.

Caution

Check the main power supply of a switchboard, and a cable connection of NCR-333 NAVTEX Receiver when the power cannot be turned on.



Starting screen

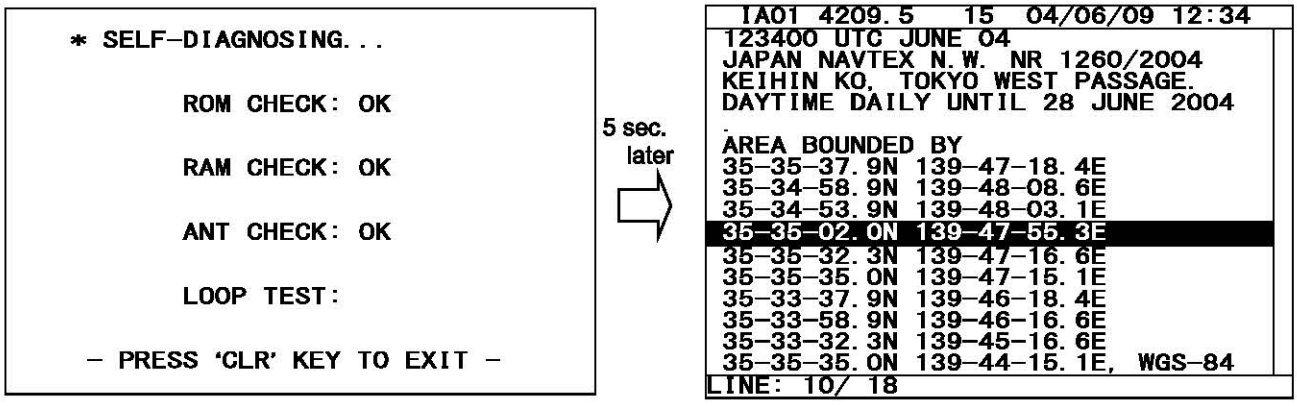
Self-diagnosis screen

Note

Self diagnosis can be canceled when the CLR key is pressed. A message text screen is displayed.

6.2.1.1 Start up (Normal)

When all the results of self-diagnosis are 'OK', the result screen is displayed for about 5 seconds. And then the result screen changes to the latest message test screen automatically.



Self-diagnosis screen

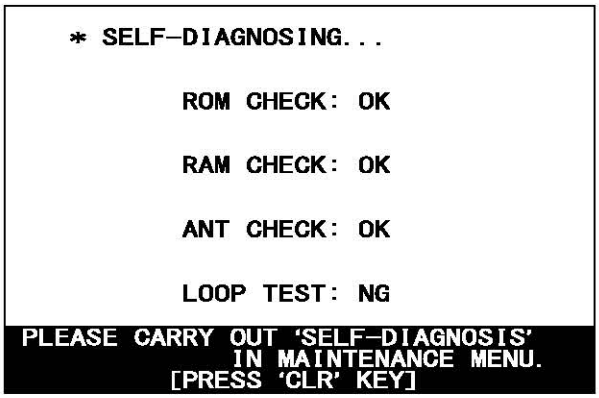
The latest message text screen

6.2.1.2 Start up (Abnormal-1)

When any result of self-diagnosis is "NG", a message text screen does not change automatically. And the caution sentence as shown in the following figure is displayed on the self-diagnostic screen. In this case, press the CLR key. The latest message text screen appears.

Caution

When "NG" is in a result, be sure to carry out self diagnosis in the "MAIN MENU" after displaying the message text screen. Check the detailed result of the "NG" item. (Refer to "6.3.5.1 Self diagnosis")



6.2.1.3 Start up (Abnormal-2)

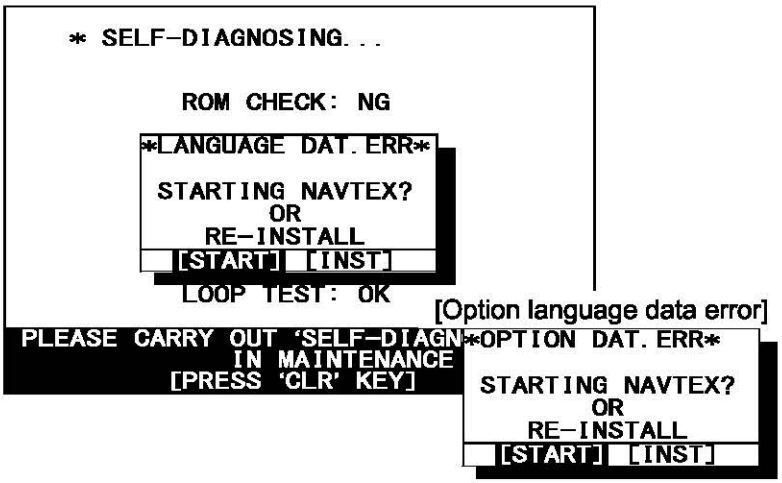
When the result of "ROM CHECK" is "NG", the sub screen may be displayed as shown in the following figure.
Be sure to select "[START]" on the sub screen. In this case, although NCR-333 operates, the screen cannot display in languages other than English.

[START]: The latest message text screen is displayed.
[INST]: The software installation screen is displayed.

When the installation screen is displayed, press and hold the PWR/CONT and DIM keys simultaneously until the power is turned off. Turn on the power, and restart the NCR-333.

Caution

Contact our service center or agents.



6.2.1.4 Start up (Abnormal-3)

When the following screen is displayed, press and hold the PWR/CONT and DIM keys simultaneously until the power is turned off.

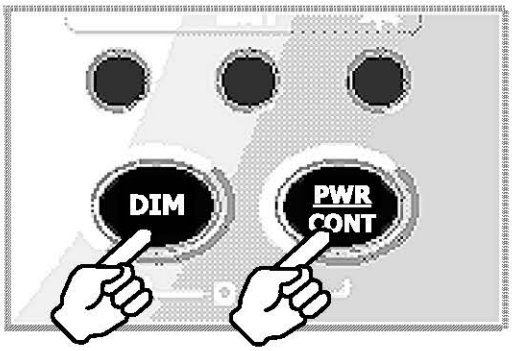
Caution

Contact our service center or agents.

```
CHECK SUM
   COMPARING ERROR !

PLEASE RE-INSTALL
          THE PROGRAM.



PLEASE RESTART AFTER
          SOFTWARE UPDATE

PRESS AND HOLD [DIM]+[PWR]
```

6.2.2 Turning OFF the power

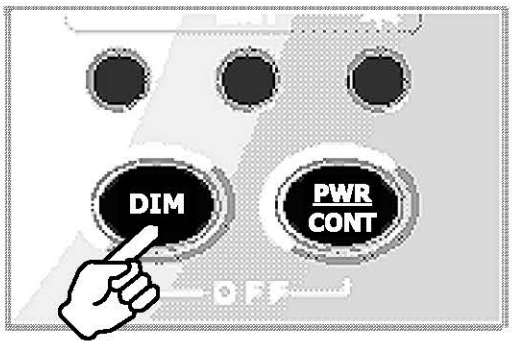
Press and hold the PWR/CONT and DIM keys simultaneously for one second until the power is turned off.



6.2.3 Back light adjustment

Brightness of display can be adjusted in 4 levels.
The display is medium-intensity brightness at starting.

To change the britness, press the DIM key.
Maximum -> Medium -> Minimum -> Turn off the light -> Maximum ->...



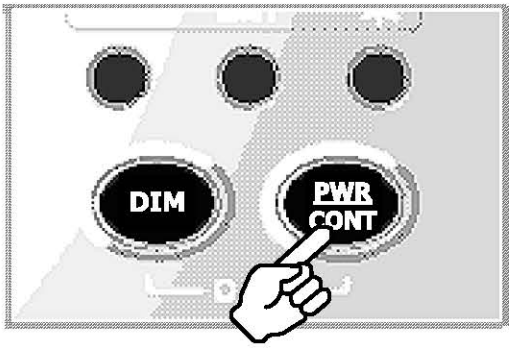
Notes

The brightness becomes the brightest in the following case;
- Failure alarm is occurred. ("NAVTEX ALARM" screen appears.)
- After reception of "Navigational warnings" message (Message type "A")
- After reception of "Meteorological warnings" message (Message type "B"))
- After reception of "Search and rescue information, and pirate attack warnings" (Message type "D")
- After reception of "Navigational warnings (Additional to letter "A")" message (Message type "L")

6.2.4 Contrast adjustment

Contrast of view area can be adjusted in 13 levels.

To change the contrast, press the PWR/CONT key. Contrast of View area is changed each time the PWR/CONT key is pressed.



6.2.5 Alarm

To stop the buzzer sound, press the CLR key. Similarly, to stop the external buzzer sound (option: CGC-300B), press the CLR key.

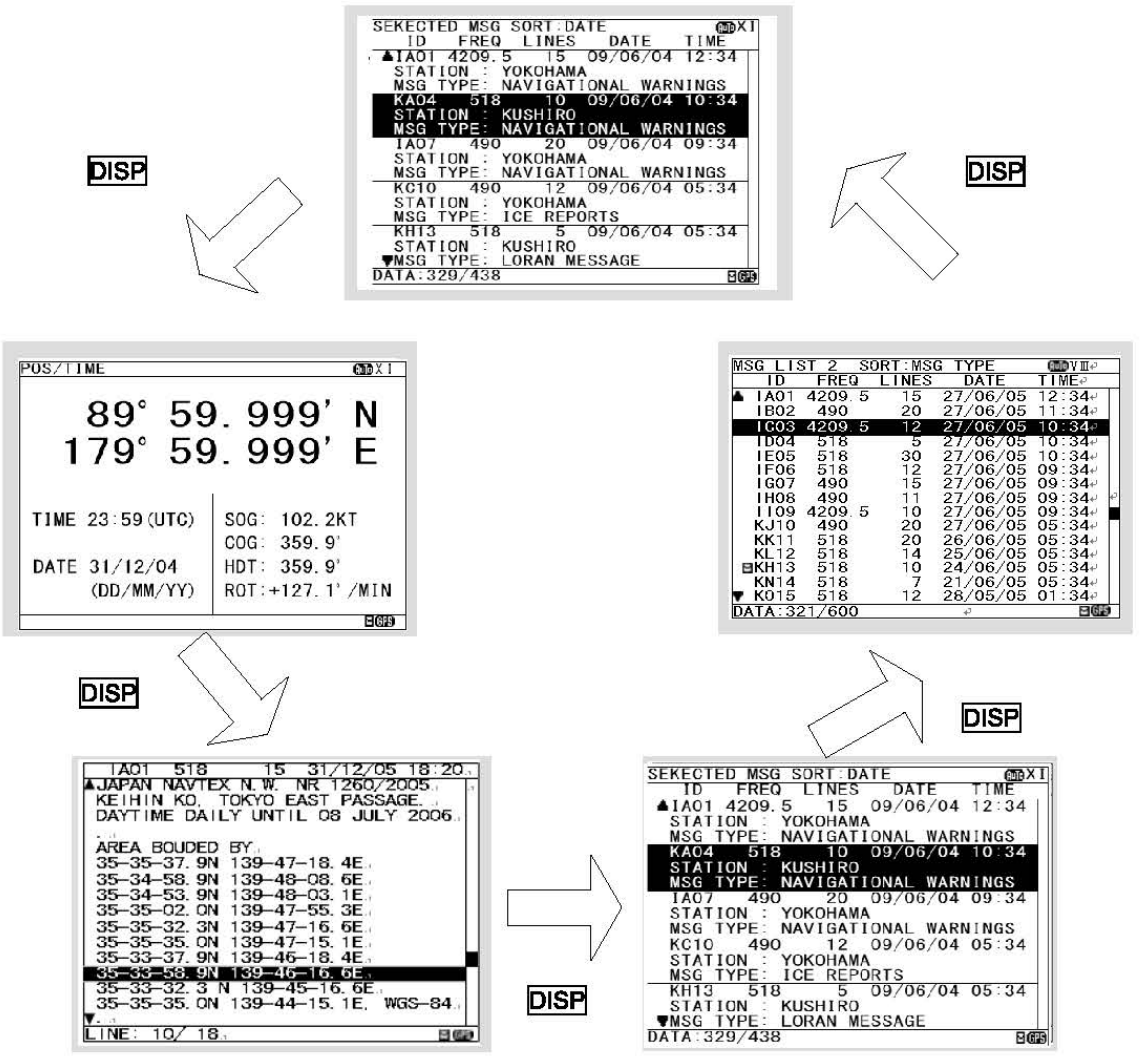
An alarm buzzer beeps in the following case;
- Failure alarm is occurred. ("NAVTEX ALARM" screen appears.)
- After reception of "Search and rescue information, and pirate attack warnings" (Message type "D")
- After reception of "Navigational warnings" message (Message type "A")
- After reception of "Meteorological warnings" message (Message type "B"))
- After reception of "Navigational warnings (Additional to letter "A")" message (Message type "L")
- After reception of other messages

Refer to "6.3.3.3 Buzzer settings(BUZZER)" for a setup of alarm buzzer.

*When NAVTEX is connected to DMC(NCH-321A or NCH-3210), DMC sounds buzzer.
To stop the buzzer sound, press the CLR key.

6.2.6 Screen switching

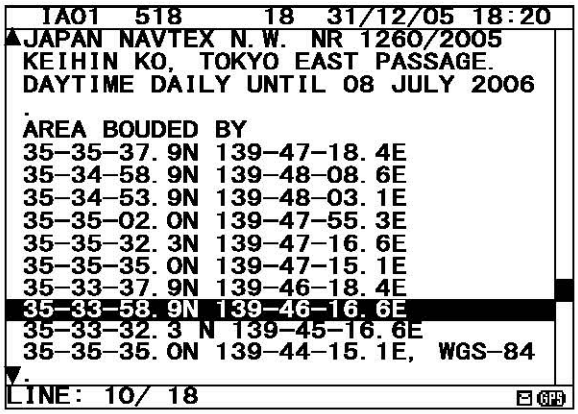
To change the display screen, press the DISP key.



6.2.7 Displaying the message

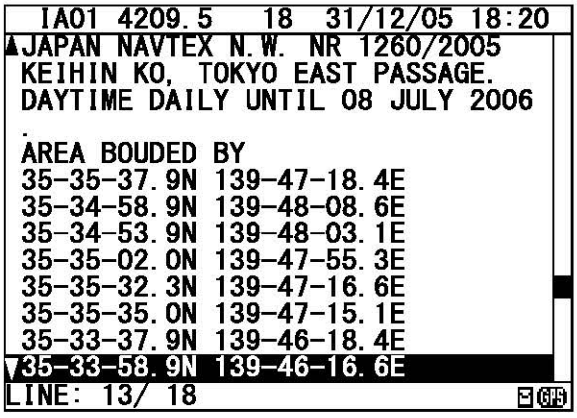
6.2.7.1 Message text

After starting this equipment, the latest message text screen is displayed.
Additionally, the latest message text screen is displayed just after reception of message while opening any screen.

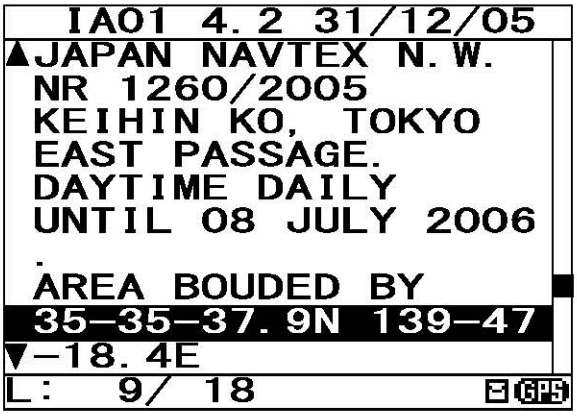


The number on the left side of DATA shows the line number of the present cursor position. The right side number shows the total number of lines.

(Character size: NORMAL)



(Character size: MEDIUM)



(Character size: LARGE)

Fig.6-1 Message text screen

Notes

The number of lines of the message text screen is changed as follows;
- Character size "NORMAL": The message text of 16 lines is displayed at the maximum.
- Character size "MEDIUM": The message text of 13 lines
- Character size "LARGE": The message text of 10 lines

Refer to "6.3.4.1 Character size setting" about change of character size.

The message type and the message identification codes are as follows.

The message identification codes displayed on upper-left side of the message text screen ("IA01" in the above example) indicates the message type.
These codes consist 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 assigned by a character from A to Z.

b. Second character
This character identifies the type of message.

[A]	Navigational warnings
[B]	Meteorological warnings
[C]	Ice reports
[D]	Search and rescue information, and pirate attack warnings
[E]	Meteorological forecasts
[F]	Pilot service messages
[G]	AIS
[H]	LORAN-C messages
[J]	SATNAV messages
[K]	Other electronic navaid messages
[L]	Navigational warnings (Additional to letter "A")
[V - Y]	Special services
[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 rate (CER) of 33 % or less. When an incoming message has the same identification code as one already stored message at CER of 4 % or less in memory (about 70 hours), it will not be displayed and stored. **The above, however, does not apply to report number '00'. For report number '00', the code is not held in memory and messages are displayed and stored each time they are received when the stations are selected.**

Notes

After receiving the search and rescue [D] message will display the detailed screen of search and rescue information message until the alarm buzzer is stopped.
Press the CLR key to display the newest message after stopping the alarm buzzer.

a. Clear the unread mark

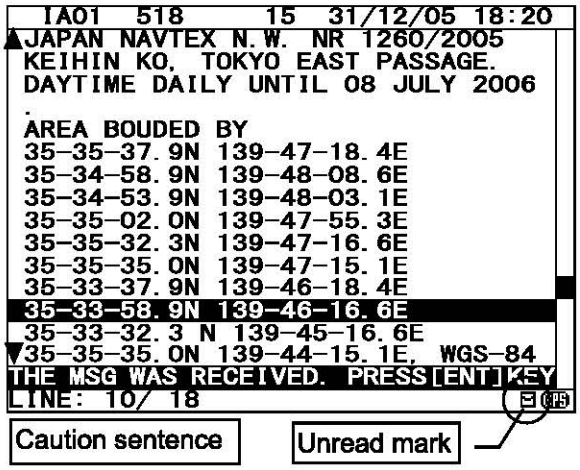
The message text is displayed after the message has been received.
Unread mark on the status bar shows unread messages has been received.

Procedures

1) If the ENT key is pressed, the caution sentence disappears, and this message changes to read message. If all messages are read messages, the "⊟" mark of status bar is cleared.

Notes

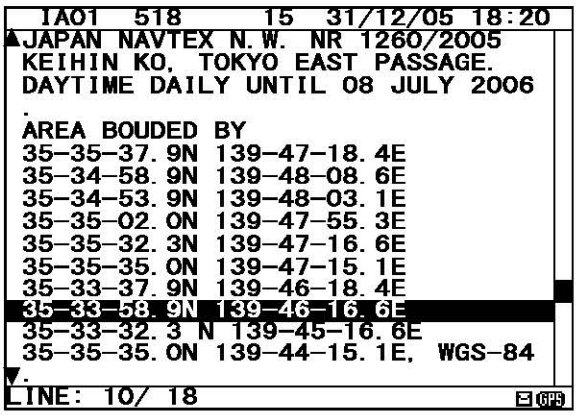
- Unread messages can also be checked on the message list 1 or 2.
(Refer to "6.2.7.2" or "6.2.7.3")
Be sure to clear the unread mark after reading a message.



b. Read the message

Screen scrolling 1

The '▼' ('▲') mark is displayed when the message text scroll downward (upward) is available.



Procedures

1) To move the cursor up/down to the next line, press the ▲ ▼ key. (Cursor scrolls one by one in the message text.)

2) To scroll the next page of the message text downward (upward) when cursor is on the bottom (top) line, press the ▼ (▲) key.

Screen scrolling 2

To skip to the next / previous message text screen is available.

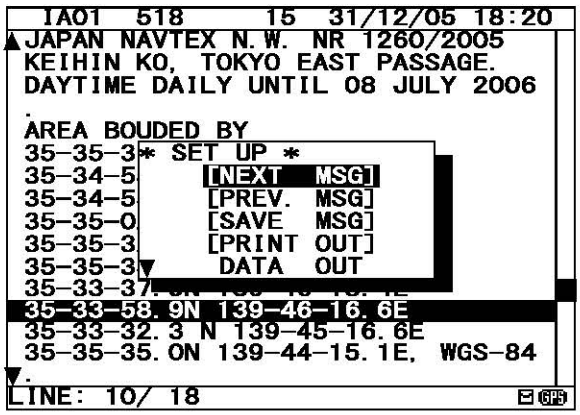
Procedures

1) To display to the previous / next screen, press the ◀ ▶ key.

c. Read the other message

Read the new message

The new message can be displayed on the message text screen.



Procedures

1) Press the * key. The sub screen appears.

2) Select the "[NEXT MSG]", and press the ENT key.

3) The new message is displayed.

Notes

- "[NEXT MSG]" can be selected when there is new message.

Read the old message

The old message can be displayed on the message text screen.

Procedures

1) Press the * key. The sub screen appears.

2) Select the "[PREV. MSG]", and press the ENT key.

3) The old message is displayed.

Notes

- "[PREV.MSG]" can be selected when there is old message.

d. Save the message

Save the message

The currently open message can be saved.
The saved message is permanently stored in the data memory.

Procedures

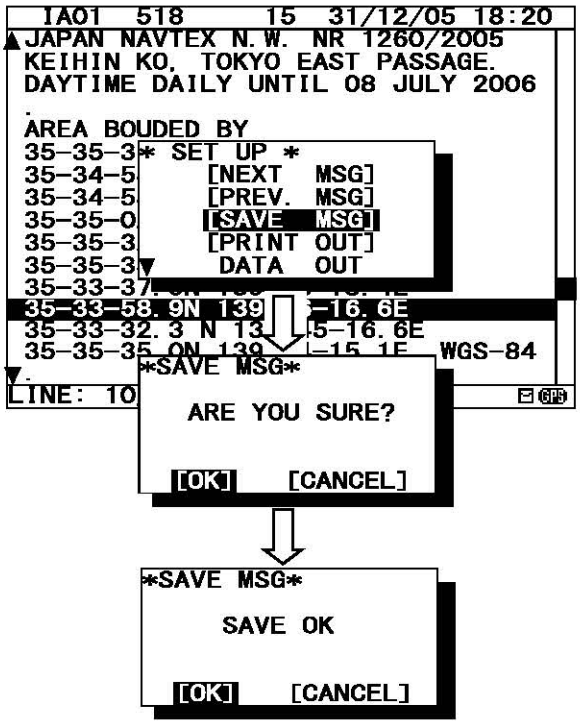
1) Press the * key. The sub screen appears.

2) Select the "[SAVE MSG]", and press the ENT key.

3) "ARE YOU SURE?" is displayed. Select the "[OK]", and press the ENT key. ("NOW SAVING..." is displayes on the sub screen.)

   To return to the sub screen (SET UP), select "[CANCEL]" and press the ENT key.

4) After message saving has been completed, press the ENT key or the CLR key.



Notes

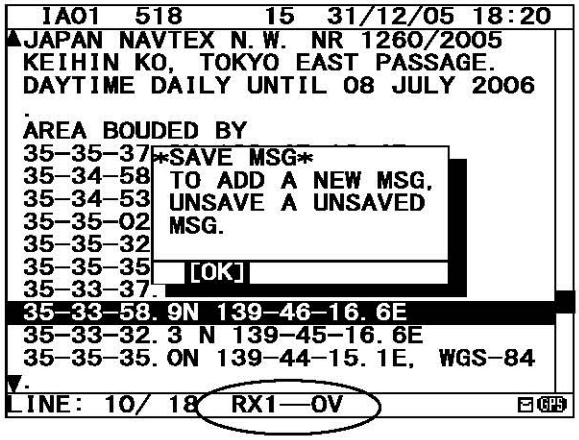
- The message that is not saved (the stored message) is automatically erased from the data memory about 70 hours after receiving.
- 50 messages of an average length of 500 characters can be saved in each channel.

The message cannot be saved

When the saved message in the data memory is full, the sub screen is displayed as shown in the following figure, and the status bar shows which channel cannot be saved (◯ mark).

Refer to "c. Put a check mark" (6.2.7.2 Message list 1) for explanation of the display of the status bar.

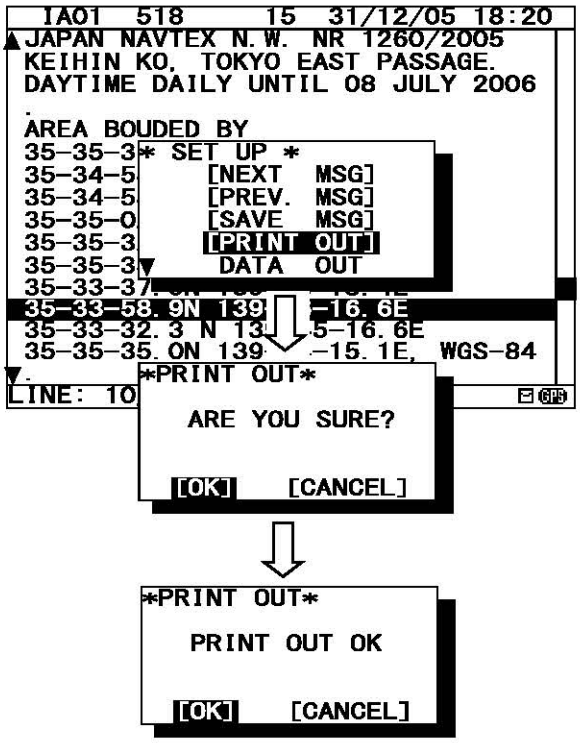
Save again after unsaving the unnecessary message in message list when unable to save a message.



e. Print the message

Print the message

The currently open message can be printed when having connected the external printer.



Procedures

1) Press the * key. The sub screen appears.

2) Select the "[PRINT OUT]", and press the ENT key.

3) "ARE YOU SURE?" is displayed. Select the "[OK]", and press the ENT key. ("NOW PRINTING..." is displayed on the sub screen.)

   To return to the sub screen (SET UP), select "[CANCEL]" and press the ENT key.

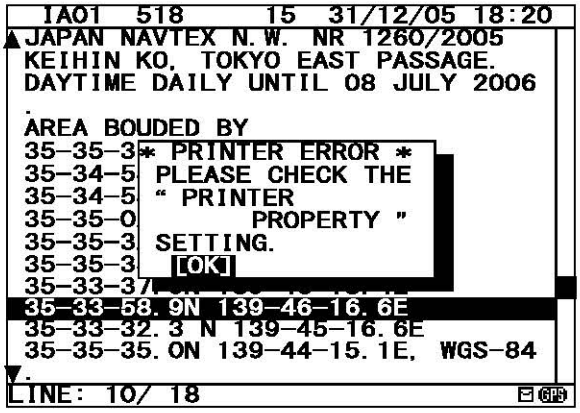
4) After message printing has been completed, press the ENT key or the CLR key.

Notes

- To stop printing, press the CLR key while printing.
- "[PRINT OUT]" cannot be selected when "DATA OUT" of "PRINTER PROPERTY" has set up "OFF". Refer to "6.3.4.5 External printer settings".

The message cannot be printed

When printing is unable, the sub screen is displayed as shown in the following figure.

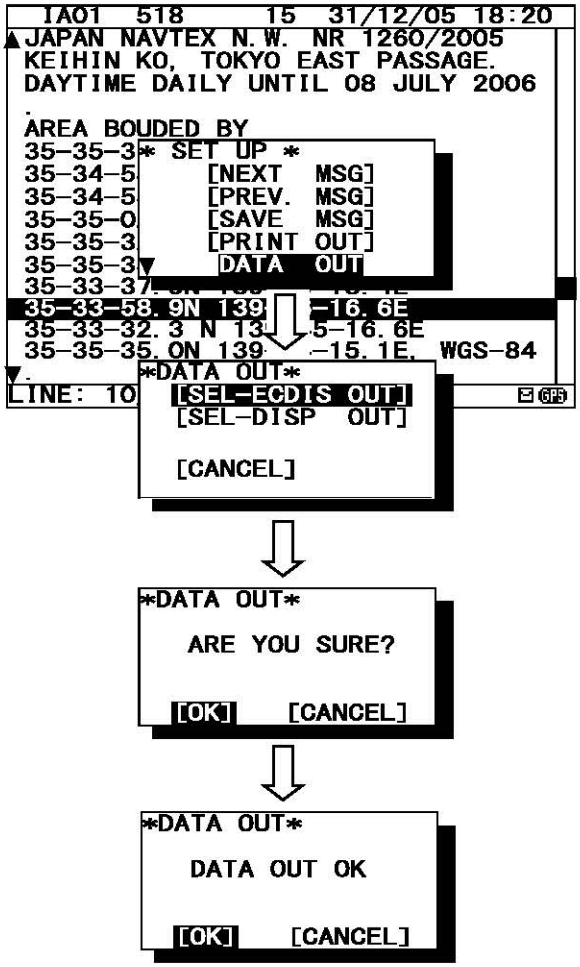


In this case, check the followings;

- The connection between the external printer and NCR-333.
- "PRINTER PROPERTY" settings. (Refer to "6.3.4.5 External printer settings")
- Confirm the external printer. (Paper out, etc...)

f. Output the message from an external port

The data of currently opened message text can be output to the connected the external equipment (ECDIS, etc).



Procedures

1) Press the * key. The sub screen appears.

2) Select the "[DATA OUT]", and press the ENT key.

3) Select the port which outputs message data.
   - SEL-DATA OUT: The message data is outputted from a "DATA OUT" port.
   - SEL- DISP OUT: The message data is outputted from a "DISP" port.

4) "ARE YOU SURE?" is displayed. Select the "[OK]", and press the ENT key. ("NOW OUTPUTTING..." is displayed on the sub screen.)

   To return to the sub screen (SET UP), select "[CANCEL]" and press the ENT key.

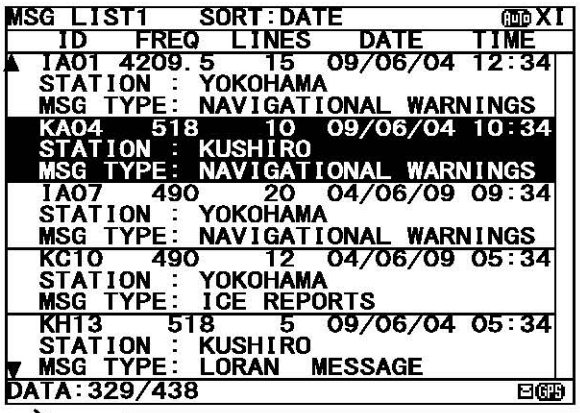
5) After message outputting has been completed, press the ENT key or the CLR key.

Notes

- To stop outputting, press the CLR key while outputting.

6.2.7.2 Message list 1

Press the DISP key several times. The list of the currently stored messages appears.
This list shows a receiving station and a message type for each message.



The number on the left side of DATA shows the message number of the present cursor position. The right side number shows the total number of messages.

(Character size: NORMAL)

(Character size: MEDIUM)

(Character size: LARGE)

Fig.6-2 Message list 1

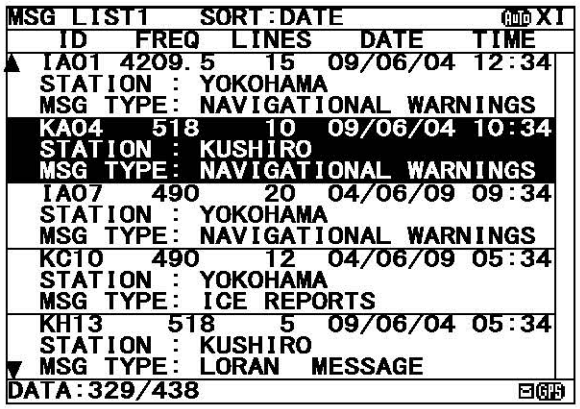
Notes

- "LINES" and "TIME" are not displayed when character size has been selected "LARGE".
  (Same applies to the message list 2 and a select message list)

a. Select a message

Screen scrolling 1

The '▼' ('▲') mark is displayed when the message list 1 scroll downward (upward) is available.



Procedures

1) To move the cursor up/down to the next line, press the ▲ ▼ key. (Cursor scrolls one by one in the message list 1.)

2) To scroll the next page of the message List 1 downward (upward) when cursor is on the bottom (top) line, press the ▼ (▲) key.

3) To read a message text, move the cursor to the message and press the ENT key.

Screen scrolling 2

Skipping to the next / previous message text screen is available.

Procedures

1) To display to the previous / next screen, press the ◀ ▶ key.

Notes

Selecting "[PGUP]"or "[PGDN]" of the sub screen can also scroll the message list 1 screen similarly to the above procedures. To display the sub screen, press the * key.

- [PGDN]: Previous screen
- [PGUP]: Next screen

b. Sort messages

To search message quickly, messages can be sorted.

Procedures

1) Press the * key. The sub screen appears.

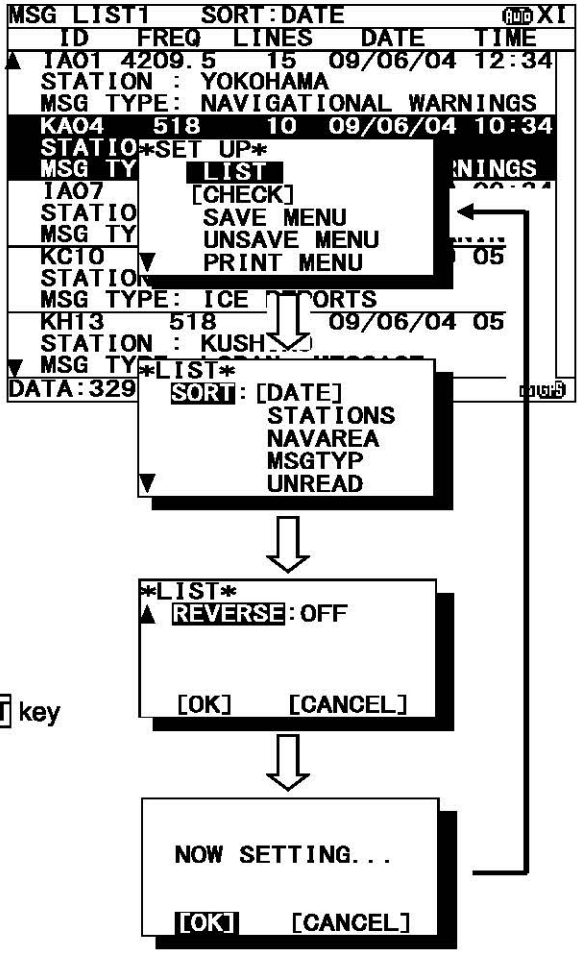
2) Select the "LIST", and press the ENT key.
The items of "LIST" appear.

3) The items of "LIST" are as follows;
SORT: The stored messages are displayed
- DATE: in the order of the date received in reverse
- STATIONS: in the order from the receiving station "A"
- NAVAREA: in the order from the NAVAREA "I"
- MSGTYP: in the order from the message type "A"
- UNREAD: in the order of the date received in reverse (unread messages)

4) Select "SORT" item, and then select "REVERSE" item.

5) Select the [OK], and press the ENT key.
Sorting message starts.

6) After message sorting has been completed, press the ENT key or the CLR key.



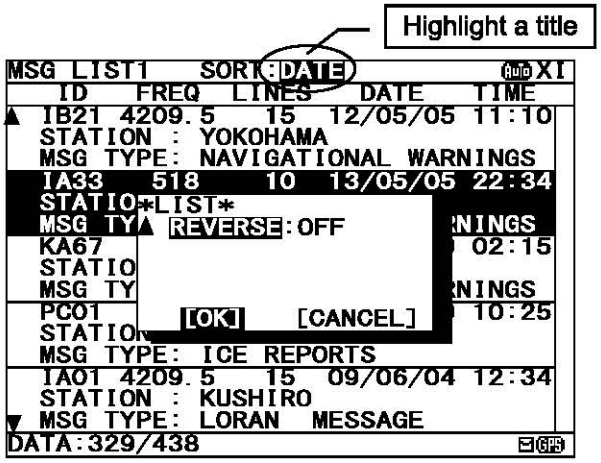
Rearrange the order of message conversely

Procedures

1) Press the * key. The sub screen appears.

2) Select the "REVERSE", and press the ENT key.
- ON : The order of reverse is on.
- OFF: The order of reverse is off.

3) The order of the message currently displayed is rearranged conversely, and title of 'SORT' is highlighted.



c. Put a check mark (Save/Unsave/print/output more than one message at the same time)

Each checked message can be saved (printed or output) at the same time.

Procedures

1) Press the [*] key. The sub screen appears.

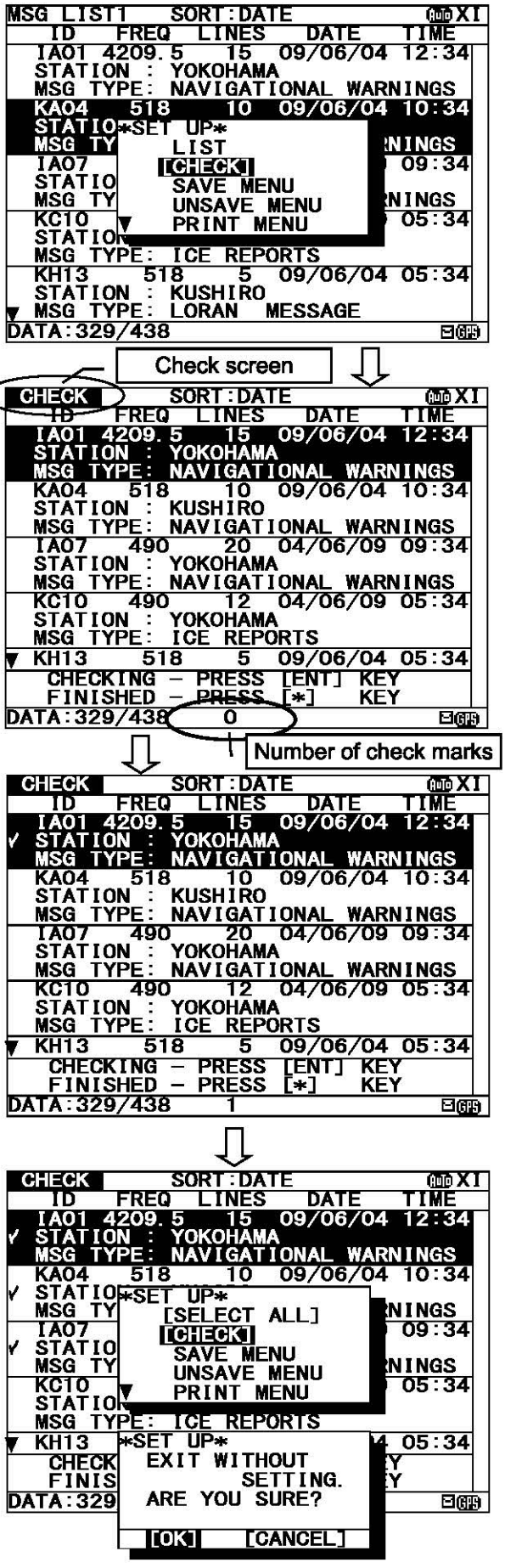
2) Select the "[CHECK]", and press the [ENT] key.
The sub screen is closed, and the message list 1 changes to the check screen.
The check screen highlights the "CHECK" on the display title.
The number of check marks is displayed on the status line.

3) Select the message for checking, and press the [ENT] key.
The "√" is displayed on a line with cursor.
This mark means having checked the message.

4) Press the [ENT] key and put a check to other messages.
When all messages check, press the [*] key,
select the "[SELECT ALL]", and press the [ENT] key.

5) Press the [*] key, to display the sub screen.
Select "SAVE MENU", "PRINT MENU", or "PORT MENU" in the auxiliary screen.
To save, print or output messages at the same time, refer to the procedure of d), e) and f).

If the [CLR] key is pressed on the sub screen, "EXIT WITHOUT SETTING" is displayed in the sub screen. If "O.K." is selected, the check marks are removed and the display screen returns to the message list 1 screen.



d. Save messages

Save one message

The selected message can be saved.

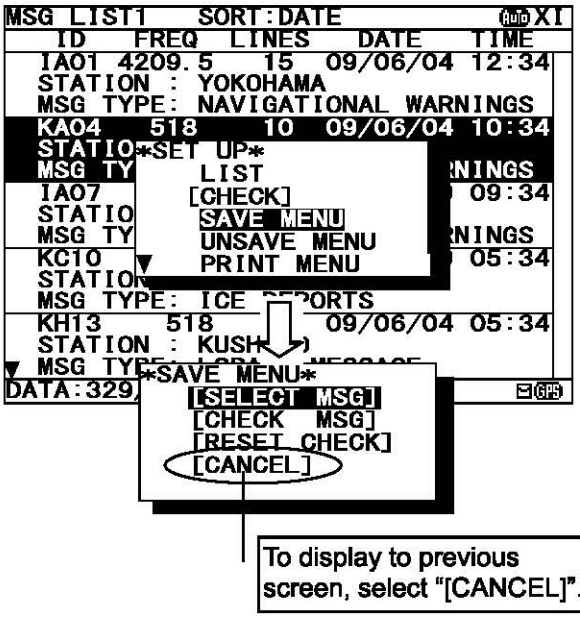
Procedures

1) Move cursor to the message to save.

2) Press the [*] key. The sub screen appears.

3) Select the "SAVE MENU", and press the [ENT] key.

4) Select the "[SELECT MSG]" in the sub screen of "SAVE MANU".



To display to previous screen, select "[CANCEL]".

Notes

- Select an item in the same procedure as "d. Save the message - 3)" (p.6-10) after the above procedure.

5) The "Ⓢ" mark on the saved message line shows the message has saved completely.

Save messages at the same time

The messages which are put the check mark can be saved at the same time.

Procedures

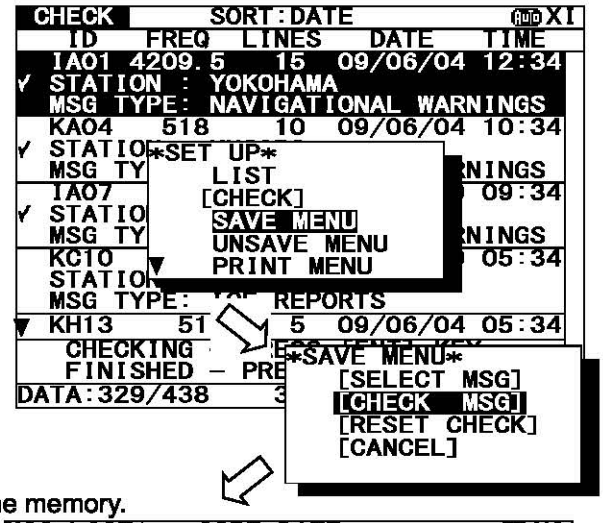
1) Continued from Procedure 5) of "c. Put a check mark".

2) Select the "SAVE MENU", and the [ENT] key.
In addition, when the following characters are displayed,

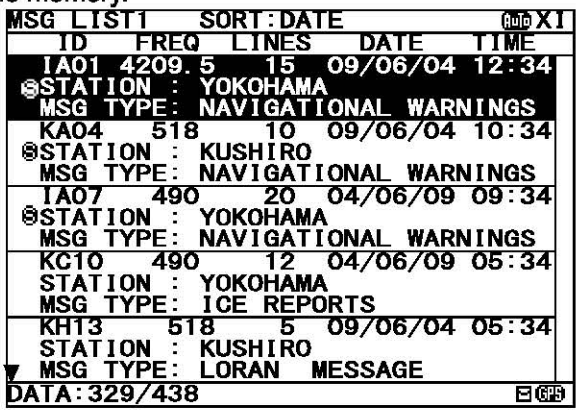
It means that the checked number is exceeded the number which can be saved in the memory.

RX1–OV: RX1(518kHz) cannot be saved any more to the memory.
RX2–OV: RX2 (490 kHz)
RX3–OV: RX3 (4209.5 kHz)
RX12-OV: RX1 and RX2
RX13-OV: RX1 and RX3
RX23-OV: RX2 and RX3
RX123OV: RX1, RX2 and RX3

In this case, messages still can be put a check, however, the messages cannot be saved.



3) Select the "[CHECK MSG]", and the [ENT] key.
To clear to all check marks, select "[RESET CHECK]" and press the [ENT] key.



Notes

- Select an item in the same procedure as "d. Save the message - 3)" (p.6-10) after the above procedure

4) The "Ⓢ" mark on the saved message line shows the message has saved completly.

e. Unsave the saved message

If the message is unsaved from the message list, "㊎" mark displayed on the message list 1 or select message list will also be deleted.

Caution

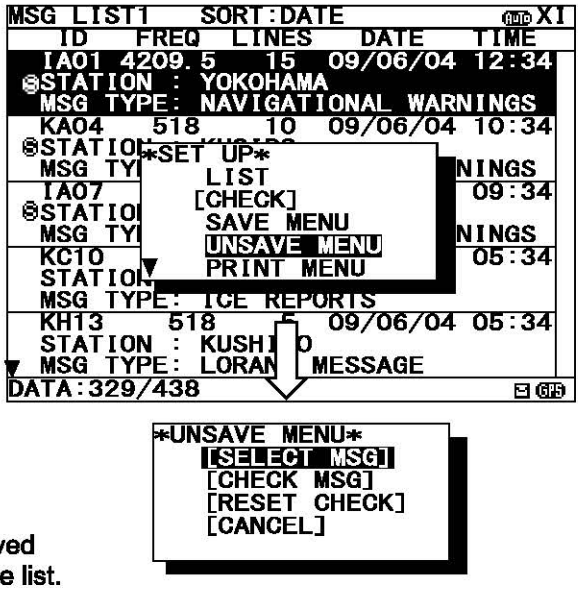
The unsaved message will be deleted from the message list, if it is stored **more than 70 hours.**

Unsave one message

The selected message can be unsaved.

Procedures

1) Move cursor onto the message to unsave.
2) Press the * key. The sub screen appears.
3) Select the "UNSAVE MENU", and press the ENT key.
4) Select the "[SELECT MSG]" in the sub screen of "UNSAVE MENU".
5) After message unsaving has been completed, the selected message is unsaved from the message list and the "㊎" mark is deleted from the message list 1 or select messge list. In addition, the message that is unsaved after stored for 70 hours will be deleted from the message list.

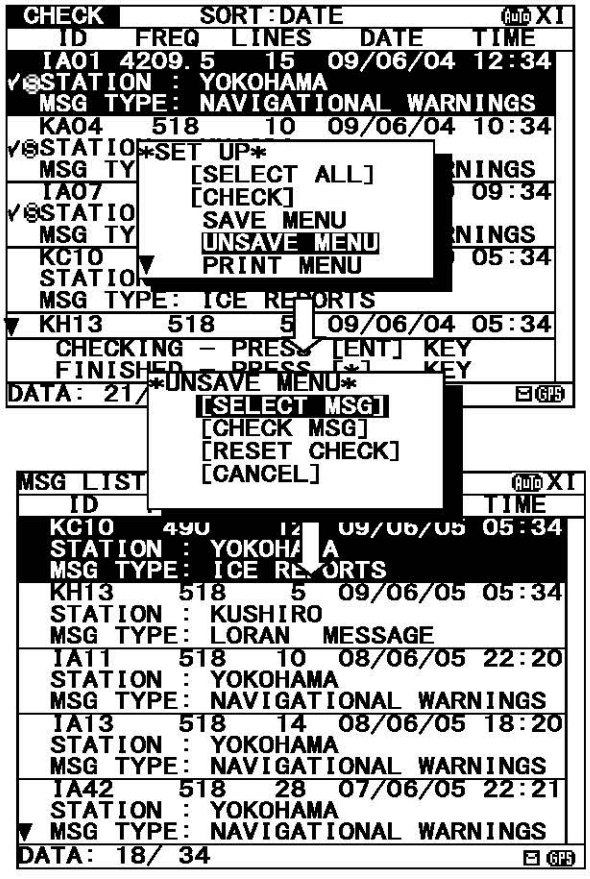


Unsave messages at the same time

The messages which are put the check mark can be unsaved at the same time.

Procedures

1) Put check marks in the same procedure as "c.Put a check mark" of "6.2.6.2 Message list 1."
2) Press the * key. The sub screen appears.
3) Select the "UNSAVE MENU", and press the ENT key.
4) Select the "[CHECK MSG]", and the ENT key.
5) If the ENT key is pressed after selecting "[RESET CHECK]", all check marks are cleared.
6) After message unsaving has been completed, the selected message has been unsaved from the message list and the "㊎" mark is deleted from the message list.
   The message that is unsaved after stored for 70 hours will be deleted from the message list.



f. Print messages or the Information on equipment

Print one message

The selected message can be printed.

Procedures

1) Move cursor onto the message to print.

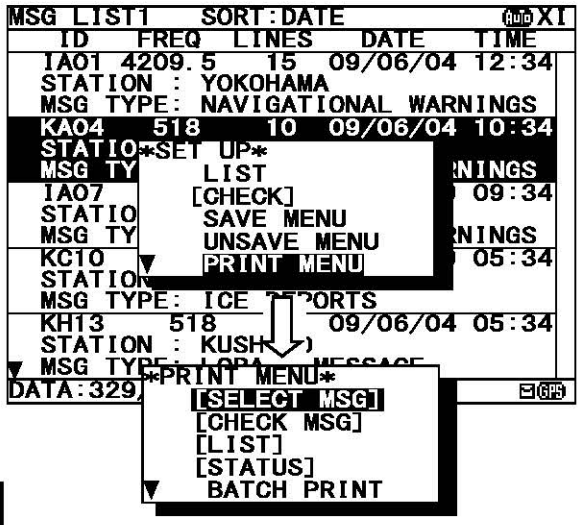
2) Press the * key. The sub screen appears.

3) Select the "PRINT MENU", and the ENT key.

4) Select the "[SELECT MSG]" in the sub screen of "PRINT MENU".

Notes

- Select an item in the same procedure as "e. Print the message - 3)" (p.6-11) after the above procedure.



Print messages at the same time

The messages which are put the check mark can be printed at the same time.

Procedures

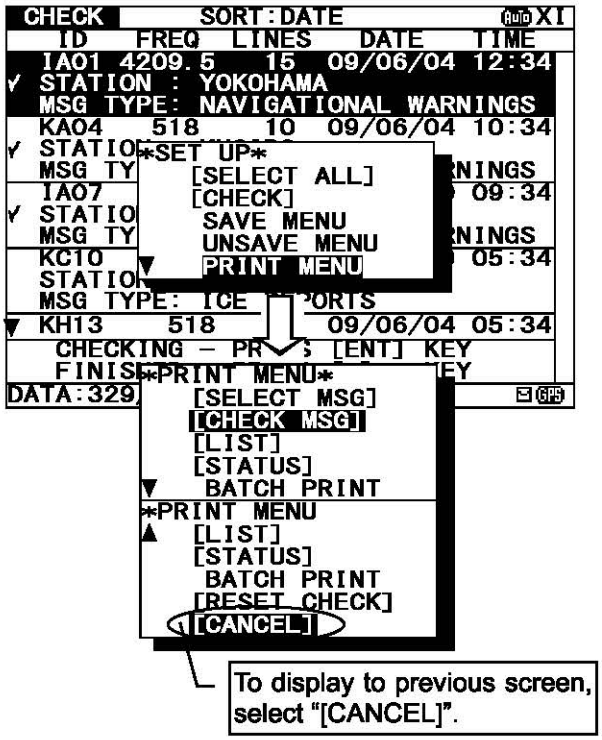
1) Continued from Procedure 5) of "c. Put a check mark". (The sub screen is displayed.)

2) Select the "PRINT MENU", and the ENT key.

3) Select the "[CHECK MSG]", and the ENT key.
To clear to all check marks, select "[RESET CHECK]" and press the ENT key.

Notes

- Select an item in the same procedure as "e. Print the message - 3)" (p.6-11) after the above procedure.



To display to previous screen, select "[CANCEL]".

Print the information on equipment

The list of stored messages and the setting status can be printed.

Procedures

1) Press the * key. The sub screen appears.

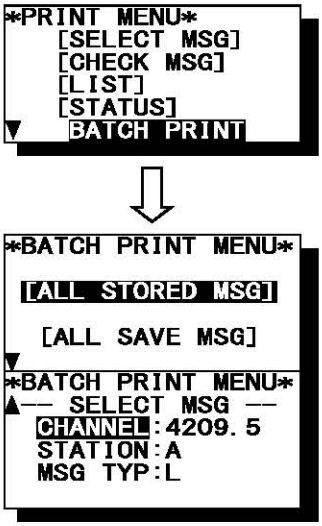
2) Select the "PRINT MENU", and press the ENT key.

3) Select the "[LIST]" or "[STATUS]", and press the ENT key.
   [LIST]: The list of stored messages is printed.
   [STATUS]: The setting status is printed. The contents of "6.3.5.3 Setting status of the NAVTEX receiver" are printed.

4) Printing starts. After printing is completed, close the sub screen.

Print messages at the same time

The stored messages can be printed at the same time according to type, station and channel.



Procedures

1) Press the * key. The sub screen appears.

2) Select the "PRINT MENU", and the ENT key.

3) Select the "BATCH PRINT", and press the ENT key.
   The sub screen of "BATCH PRINT MENU" appears.

4) Select the following message type for printing.
   The "SELECT MSG" can select the message printing by the receiving channel, receiving station, message type.
   [ALL STORED MSG]: All stored messages are printed.
   [ALL SAVE MSG]: All saved messages are printed.
   SELECT MSG: The messages of the conditions selected from the following three items are printed.
   - CHANNEL: The receiving channel is selected from '518kHz', '490kHz', '4209.5kHz' or 'ALL'.
   - STATION: The receiving station is selected from 'A' to 'Z', or 'ALL'.
   - MSG TYP: The message type is selected from 'A' to 'Z', or 'ALL'.

5) To start printing, select item and press the ENT key.
   "ARE YOU SURE?" is displayed on the sub screen, if the ENT key is pressed after selecting "[ALL STORED MSG]" or "[ALL SAVE MSG]".
   When in "SELECT MSG", "ARE YOU SURE?" is displayed on the sub screen, if the ENT key is pressed after selecting "MSG TYP".

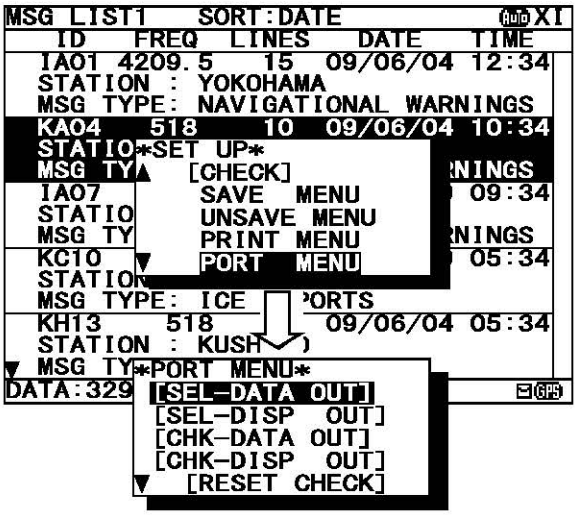
Notes

- Select an item in the same procedure as "e. Print the message - 3)" (p.6-11) after the above procedure.

g. Output messages from an external port

Output one message

The external serial port outputs the selected message's data from DATA OUT port.



Procedures

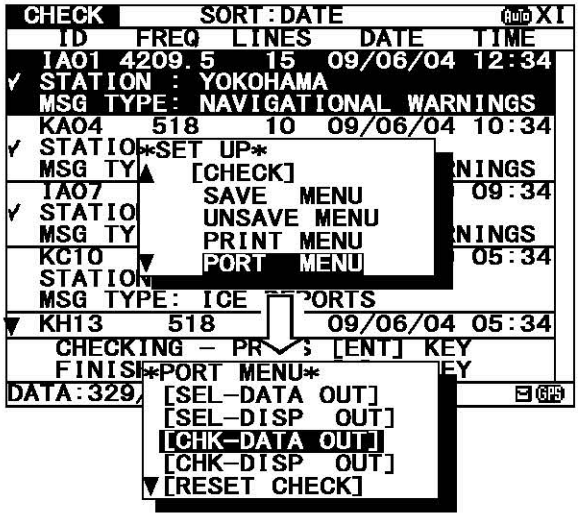
1) Move cursor to the message to output.
2) Press the * key. The sub screen appears.
3) Select the "PORT MENU", and the ENT key.
4) Select the "[SEL-DATA OUT]" or "[SEL-DISP OUT]" in the sub screen of "PORT MENU".

Notes

- Select an item in the same procedure as "f. Output the message from an external port - 3)" (p.6-12) after the above procedure.

Output messages at the same time

The messages with the check mark can be output at the same time.



Procedures

1) Continued from Procedure 5) of "c. Put a check mark". (The sub screen is displayed.)
2) Select the "PORT MENU", and the ENT key.
3) Select the "[CHK-DATA OUT]" or "CHK-DISP OUT", and the ENT key.
   To clear to all check marks, select "[RESET CHECK]" and press the ENT key.

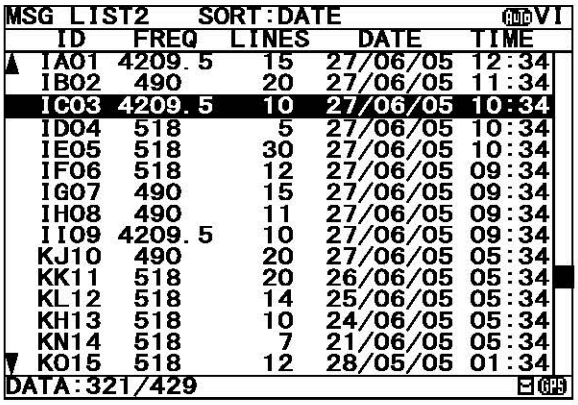
   - CHK-DATA OUT: Message data outgoing from ECDIS or INS port.
   - CHK-DISP OUT: Message data outgoing from DISP port.

Notes

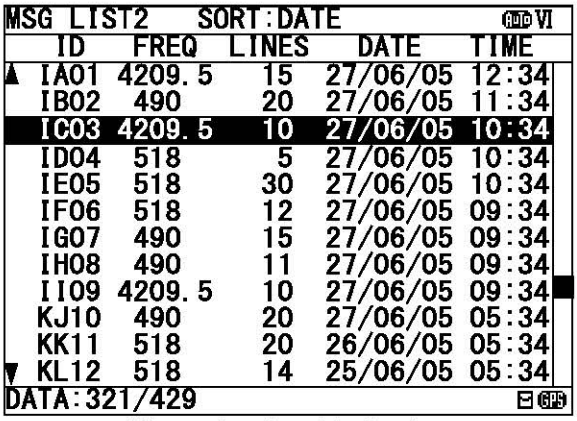
- Select an item in the same procedure as "f. Output the message from an external port - 3)" (p.6-12) after the above procedure.

6.2.7.3 Message list 2

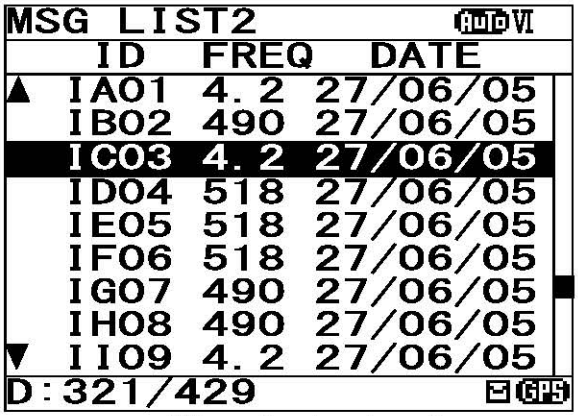
Press the DISP key several times. The list of the currently stored messages appears.
This list displays more messages on a screen than the message list 1 by not displaying "STATION" and "MSG TYPE".



(Character size: Normal)



(Character size: Medium)



(Character size: Large)

Fig.6-3 Message list 2

Notes

- Selecting of each message, scrolling, saving, and the printing method are carried out in the same procedure as the message list 1.
  Refer to the operation procedure of the message list 1.

- The message list 2 does not display "⛁" mark which shows the saved message. When you confirm that the message was saved, display and check the message list 1 or the select message list.

6.2.7.4 Select message list

Press the DISP key several times. The list of the messages that is currently selected appears.
Only the list of messages selected by "Message list 1" or "Message list 2" is displayed.

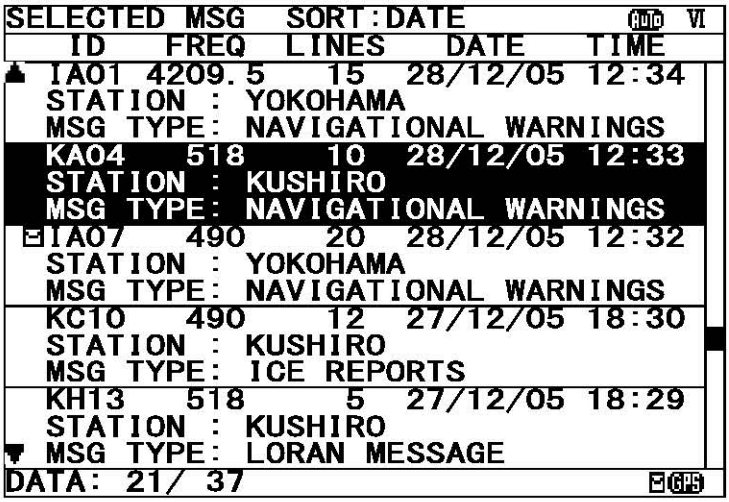


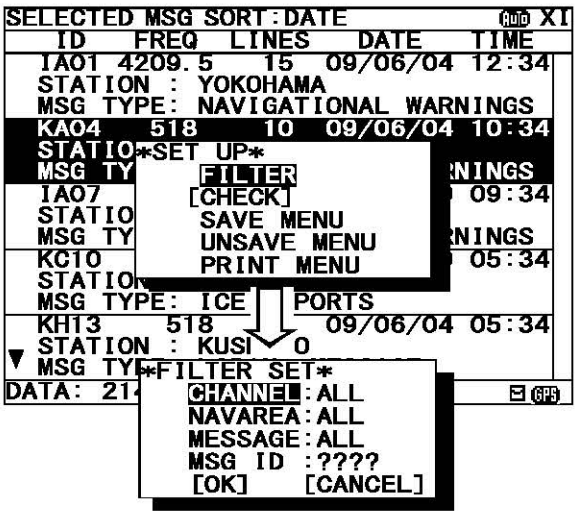
Fig.6-4 Select message list

Notes

- Selecting of each message, scrolling, saving, and the printing method are carried out in the same procedure as the message list 1.
  Refer to the operation procedure of the message list 1 about operation.

a. Select the displayed message

The displayed message can be selected.



Procedures

1) Press the * key. The sub screen appears.

2) Select the "FILTER", and press the ENT key.
The items of "FILTER SET" appear.

3) The messages displayed on the select four items.
(Items: channel, navarea, message, and msg id.)
Press the ▲ ▼ key to select, and press the ENT key.

-CHANNEL : The display channel is selected from '518kHz', '490kHz', '4209.5kHz' or 'ALL'.
-NAVAREA : The display NAVAREA is selected from 'I' to 'XVI' or 'ALL'.
-MESSAGE : The display message is selected from 'SAVED', 'UNSAVED' or 'ALL'.
-MSG ID : The display msg ID is selected from 'A' to 'Z', '0' to '9' or '?'(ALL).

MSG ID ? ? ? ?

- ? (4th): The display message type is selected from '0' to '9', or '?'(ALL).
- ? (3rd): The display message type is selected from 'A' to 'Z', or '?'(ALL).
- ? (1st): The display coast station is selected from 'A' to 'Z', or '?'(ALL).

4) Select the [OK], and press the ENT key. Selecting message starts.

6.3 MAIN MEMU

Main menu displays menu items for setting, and maintenance, etc.
To display the Main menu, press the MENU key during operation.

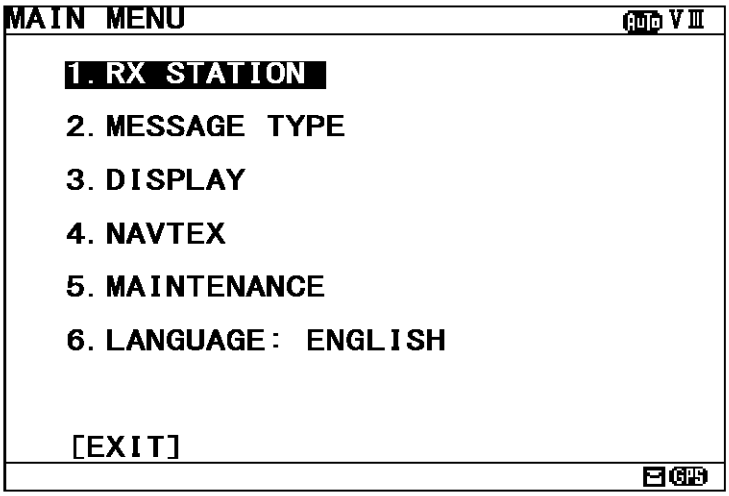


Fig.6-5 Main menu

Procedures

1. Press the ▲ ▼ key to select the menu item.
2. When the ENT key or the ▶ key is pressed, the menu screen of selected item is displayed.

Notes

Previous screen is displayed when the CLR key is pressed. (Such as message text display or message list 1, etc).

The outlines of menus are as follows;

1. RX STATION:	Displays the menu for selecting receiving stations.	(See 6.3.1)
2. MESSAGE TYPE:	Displays the menu for selecting message types.	(See 6.3.2)
3. DISPLAY:	Displays the menu for setting the display unit.	(See 6.3.3)
4. NAVTEX:	Displays the menu for setting the NAVTEX receiver.	(See 6.3.4)
5. MAINTENANCE:	Displays the maintenance menu.	(See 6.3.5)
6. LANGUAGE:	Selects the menu display language.	(See 6.3.6)
[EXIT]:	Return to the previous screen (Such as message text display or message list 1, etc.)	

6.3.1 RX STATION screen

To display RX STATION menu screen, select 1. RX STATION.

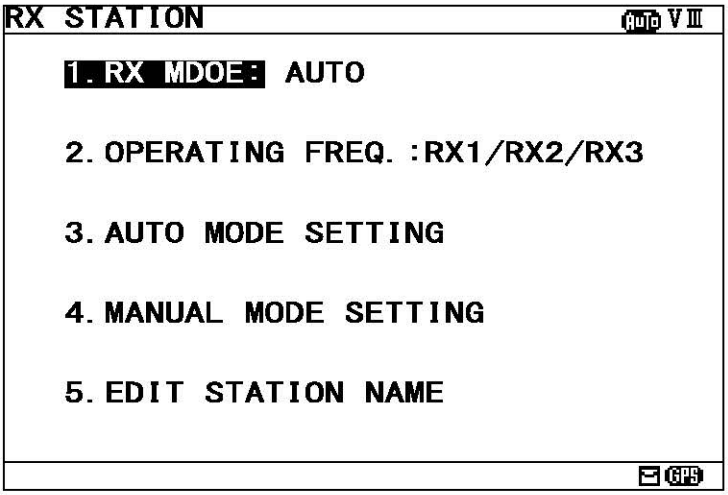


Fig.6-6 RX STATION menu screen

Procedures

1. Press the ▲ ▼ key to select the menu item.
2. When ENT key or ▶ key is pressed, the menu screen of selected item is displayed.
   - When cursor is on the item 1 and 2, cursor moves to the right side of ":"
   - When cursor is on the item 3 and 4, the menu screen of item 3 and 4 appears.

Notes

- To return to the MAIN MENU screen, press the CLR key or ◀ key.
- If the ◀ key is pressed when cursor is on the right side of ":" of item 1 and 2, cursor returns on the item 1 and 2. (1.RX MODE, 2.OPERATING FREQ.)

The outlines of Menus are as follows;

1. RX MODE:	Select "AUTO" or "MANUAL" as the receiving station selection mothod.	(See 6.3.1.1)
2. OPERATING FREQ.:	Select receiving channels.	(See 6.3.1.2)
3. AUTO MODE SETTING:	Displays the menu screen by automatically selecting the receiving station in each NAVAREA (Navigation area).	(See 6.3.1.3)
4. MANUAL MODE SETTING:	Displays the menu screen for selecting the receiving station regardless of NAVAREA.	(See 6.3.1.4)
5. EDIT STATION NAME:	Edit the receiving station name in each NAVAREA.	(See 6.3.1.5)

6.3.1.1 Receiving mode setting (RX MODE)

The automatic select mode and the manual select mode for RX station :

- AUTO: Automatic select mode
  When normal GPS position data is inputted, the position and NAVAREA of a ship are automatically specified, and the message of the receiving station in the NAVAREA is received.
  (The "GPS" mark is displayed on the status bar.)

Notes

"AUTO" can be operated only when the GPS data is inputted.

- MANUAL: Manual select mode
  Regardless of the NAVAREA, messages are received according to the station selection settings of each channel.

Notes

The information of code number "00" is always received when the stations are selected, displayed and stored automatically regardless of the setting.
(Refer to "6.2.7.1 Message text".)

6.3.1.2 Receiving channel setting (OPERATING FREQ.)

A receiving channel selection

Press the ▲ ▼ key and select the following items;
- RX1 (518 kHz)/ RX2 (490 kHz)/ RX3 (4209.5 kHz)
- RX1 / RX2
- RX1 / RX3

RX1 (518kHz) is always selected.

6.3.1.3 Automatic receiving station selection (AUTO MODE SETTING)

To display AUTO MODE SETTING screen, select 3.AUTO MODE SETTING from RX STATION menu (6.3.1).

Select the receiving station of each channel for every NAVAREA.

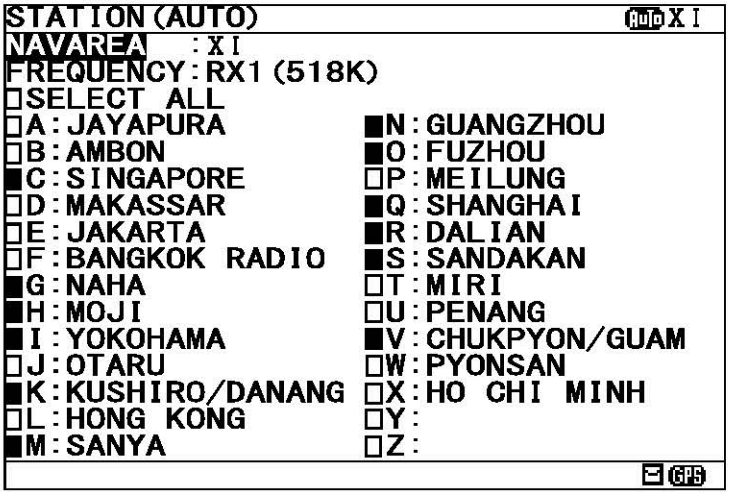


Fig.6-7 The receiving station selection screen (Auto mode setting)

The items of the receiving station selection screen (auto mode) are as follows;

- NAVAREA: Select the NAVAREA (I - XX I).
- FREQUENCY: Select the channel (RX1 (518k), RX2 (490k), RX3 (4209.5k)).
- □ SELECT ALL: Select all the stations from A to Z.
  ■: A message is received.
  □: A message is not received.
- Receiving station A – Z: Select receiving stations from A to Z

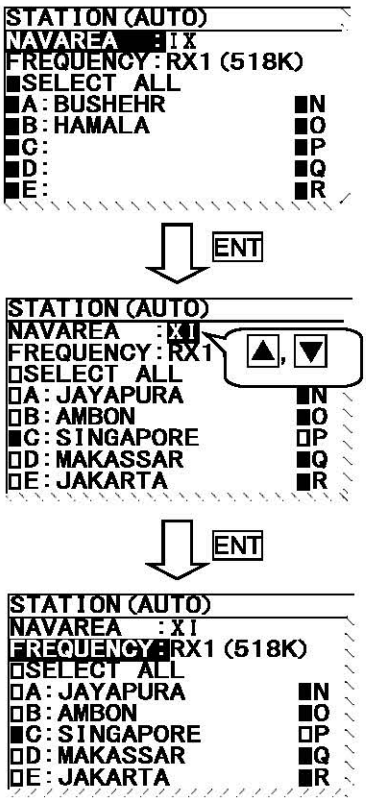
Notes

- When GPS data is inputted, the receiving station in NAVAREA is automatically displayed in the selection screen. Otherwise, the stations in NAVAREA I are displayed first.

a. Select receiving stations

Select the receiving station of each channel for every NAVAREA.
All stations of initial setting are "A message is received: ■ "

Selection of NAVAREA



Procudure

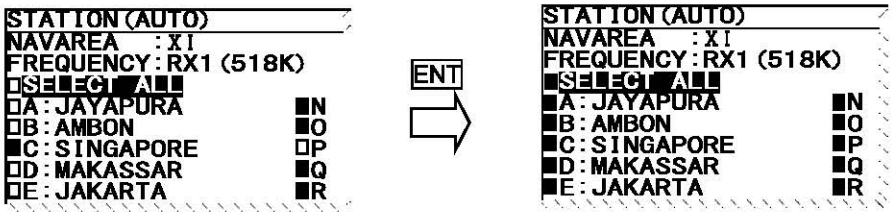
1) Select NAVAREA, and press the ENT key.
   Cursor moves to the right side of ":" (on a number).

2) Press the ▲ ▼ key and select the number of NAVAREA.
   And then, press the ENT key.
   The cursor moves to the lower line (on the "FREQUENCY").

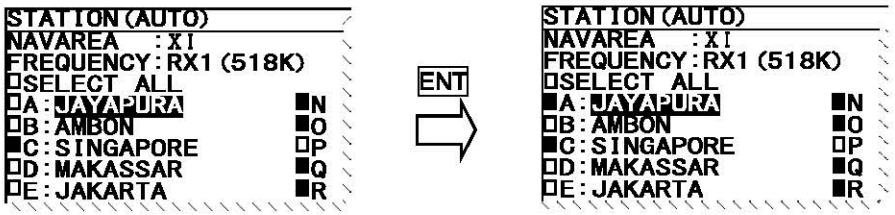
3) Select FREQUENCY, and press the ENT key.
   Cursor moves to the right side of ":" (on the "RX1").

4) Press the ▲ ▼ key and select a channel.
   RX1 (518K): 518 kHz
   RX2 (490K): 490 kHz
   RX3 (4209.5K): 4209.5 kHz

5) Press the ▲ ▼ ◀ ▶ key to select a receiving station for setting.
   - Pressing the ENT key switches alternately between "■ " and "□ ".
   - If the "SELECT ALL" is "■ ", all station (A-Z) settings changes to " ■".



(a) Selection of all stations



(b) Selection of each station

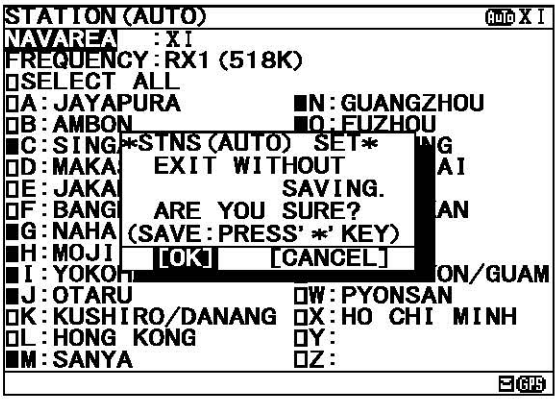
b. Cancel settings

When the CLR/ MENU/ DISP/ USER key is pressed while setting up "a. Select receiving stations", the information screen (the sub screen) as shown in the following figure is displayed.

Select "OK" or "CANCEL".

OK: Canceling the receiving station settings, and the screen changes according to the pressed key.

CANCEL: The information screen is closed. Continue the receiving station settings.



c. Set up the next channel (or NAVAREA)

After a setup of a channel (or NAVAREA) finishes, the next channel (or NAVAREA) can be set up continuously.

Procedures

1) Press the ▲ ▼ ◄ ► key for selecting FREQUENCY (or NAVAREA), and press the ENT key.
Cursor moves to the right side of ":"

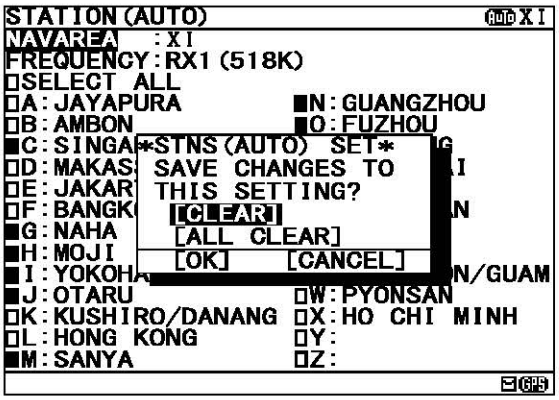
2) Press the ▲ ▼ key and select the number of NAVAREA.
And then, press the ENT key.

3) Select a receiving station in the same procedures as "a. Select receiving stations".

d. Save (or Clear) settings

Save (or clear) the settings on the sub screen after setting up.

Procedures



1) Press the * key. The sub screen appears.
   Cursor is on the [CLEAR].

2) Press the ▼ key and select the following items.

3) **Save settings**
   Select the [OK], and press the ENT key.

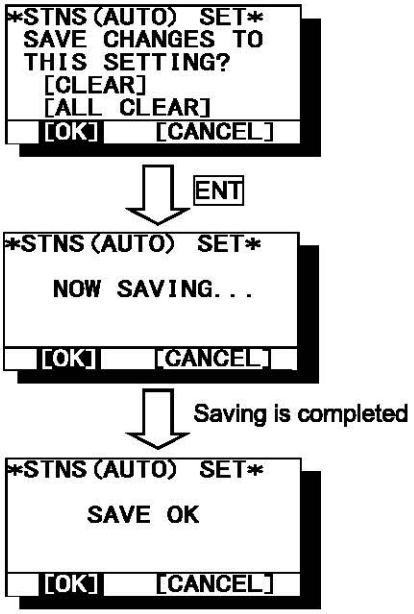
Clear only settings of the screen that is currently open
Select the [CLEAR], and press the ENT key.
The receiving station settings of the screen that is currently opened are restored to its former state, and the cursor returns to NAVAREA.

Clear all settings
Select the [ALL CLEAR], and press the ENT key.
All the receiving station settings are restored to its former state, and the cursor returns to NAVAREA.

Continue setting up
Select the [CANCEL], and press the ENT key.
This sub screen is closed.

4) To start save process, select [OK].
   Then, "SAVE OK" is displayed on the sub screen.

   Press the ENT or CLR key.
   RX STATION menu screen appears.



6.3.1.4 Manual receiving station selection (MANUAL MODE SETTING)

To display MANUAL MODE SETTING screen, select 4.MANUAL MODE SETTING from RX STATION menu (6.3.5).

Select the receiving station of each channel. There is no setup of NAVAREA.

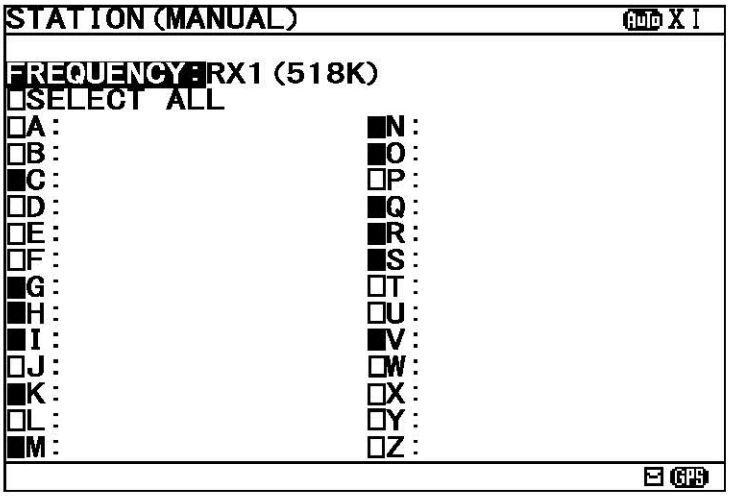


Fig.6-8 The receiving station selection screen (Manual mode setting)

The items of the receiving station selection screen (manual mode) are as follows;

- FREQUENCY: Select the channel (RX1 (518k), RX2 (490k), RX3 (4209.5k)).
- □ SELECT ALL: Select all the stations from A to Z.
  ■: A message is received.
  □: A message is not received.
- Receiving station A – Z: Select receiving stations from A to Z

Notes

When this screen is displayed, the receiving station of RX1 is displayed first.

a. Select receiving stations

Start with selection of "FREQUENCY".
Carry out the procedure from section 3) to 5) of p.6-29 “a. Select receiving stations”

b. Cancel settings

Carry out “b. Cancel settings” of p.6-30.

c. Set up the next channel

Carry out the procedure from section 1) to 3) of p.6-30 “c. Set up the next channel (or NAVAREA)”.

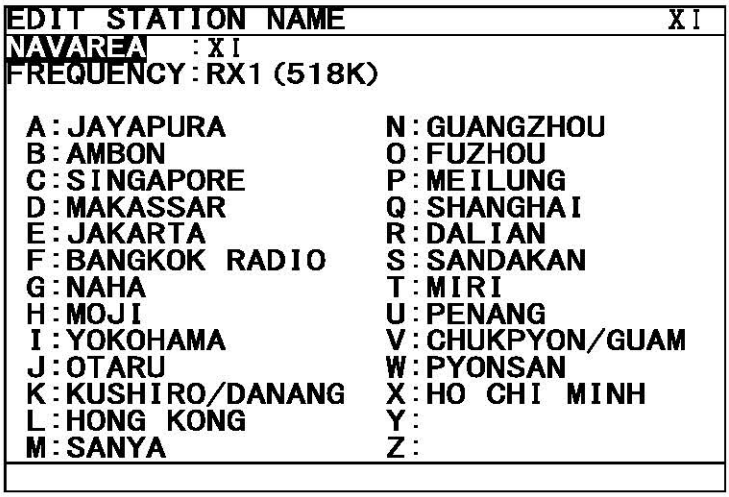
d. Save (or Clear) settings

Carry out the procedure from section 1) to 4) of p.6-31 “d. Save (or Clear) settings”.

6.3.1.5 Edit the receiving station name (EDIT STATION NAME)

To display EDIT STATION NAME screen, select 5.EDIT STATION NAME from RX STATION menu (6.3.1).

Edit the receiving station name of each channel for every NAVAREA.



The items of the edit the receiving station name screen are as follows;

- NAVAREA: Select the NAVAREA (I - XX I).
- FREQUENCY: Select the channel (RX1 (518k), RX2 (490k), RX3 (4209.5k)).
- Edit the receiving station name A – Z: Select receiving station name from A to Z.

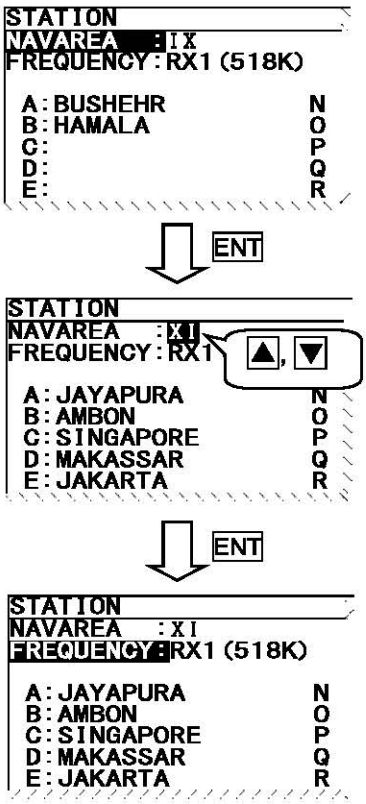
Notes

- The number of the maximum characters of a receiving station name is 14 characters.

a. Edit the receiving station name

Select the receiving station name to edit of each channel for every NAVAREA.

Selection of NAVAREA



Procudure

1) Select NAVAREA, and press the ENT key.
   Cursor moves to the right side of ":" (on a number).

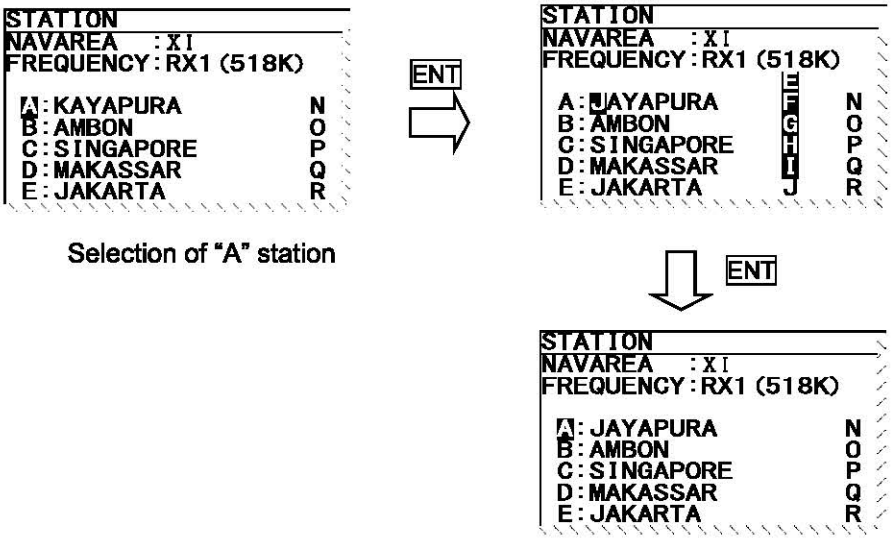
2) Press the ▲ ▼ key and select the number of NAVAREA.
   And then, press the ENT key.
   The cursor moves to the lower line (on the "FREQUENCY").

3) Select FREQUENCY, and press the ENT key.
   Cursor moves to the right side of ":" (on the "RX1").

4) Press the ▲ ▼ key and select a channel.
   RX1 (518K): 518 kHz
   RX2 (490K): 490 kHz
   RX3 (4209.5K): 4209.5 kHz

5) Press the ▲ ▼ ◀ ▶ key to select the receiving station name for editting.
   Select from A to Z, and press the ENT key.
   Cursor moves to the right side of ":" (on a receiving station name).

   - Press the ▲ ▼ key and select a setting character.
     Display on the character to setting on middle of the screen.
   - Press the ◀ ▶ key and select editting character.
   - Press the * key and insert a space.
   - Press the CLR key and delete a cursor character.
   - Press the ENT key and set the receiving station name.
     Cursor moves to from A to Z.



Selection of "A" station

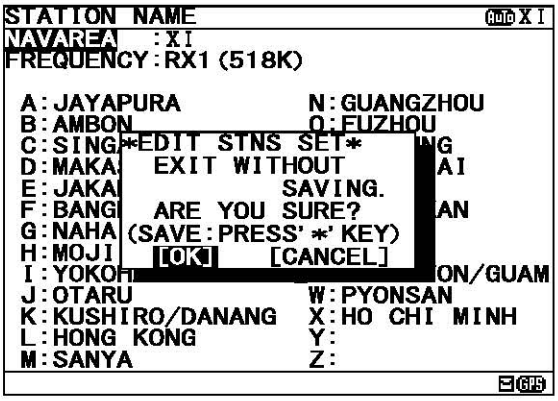
b. Cancel settings

When the CLR/ MENU/ DISP/ USER key is pressed while setting up "a. Edit the receiving station name", the information screen (the sub screen) as shown in the following figure is displayed.

Select "OK" or "CANCEL".

OK: Canceling the edit the receiving station name settings, and the screen changes according to the pressed key.

CANCEL: The information screen is closed. Continue the edit the receiving station name settings.



c. Set up the next channel (or NAVAREA)

After a setup of a channel (or NAVAREA) finishes, the next channel (or NAVAREA) can be set up continuously.

Procedures

1) Press the ▲ ▼ ◀ ▶ key for selecting FREQUENCY (or NAVAREA), and press the ENT key.
Cursor moves to the right side of ":"

2) Press the ▲ ▼ key and select the number of NAVAREA.
And then, press the ENT key.

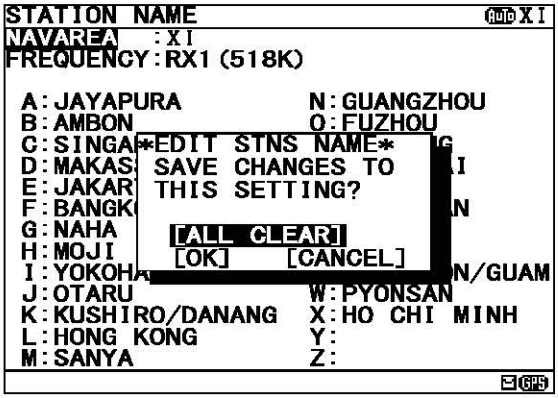
3) Select a receiving station in the same procedures as "a. Edit the receiving station name".

d. Save (or Clear) settings

Save (or clear) the settings on the sub screen after setting up.

Procedures

1) Press the * key. The sub screen appears.
   Cursor is on the [ALL CLEAR].



2) Press the ▼ key and select the following items.

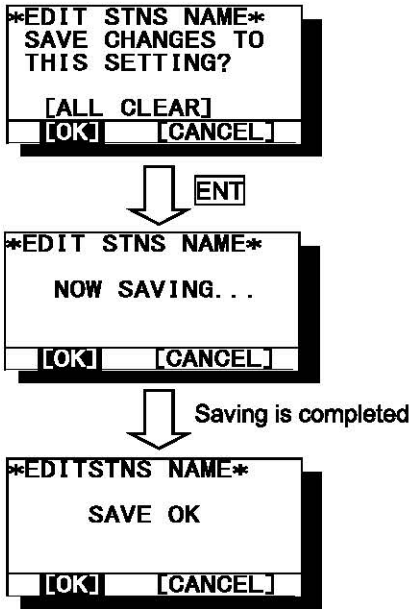
3) **Save settings**
   Select the [OK], and press the ENT key.

   Clear all settings
   Select the [ALL CLEAR], and press the ENT key.
   All the receiving station settings are restored to its former state, and the cursor returns to NAVAREA.

   Continue setting up
   Select the [CANCEL], and press the ENT key.
   This sub screen is closed.

4) To start save process, select [OK].
   Then, "SAVE OK" is displayed on the sub screen.

   Press the ENT or CLR key.
   RX STATION menu screen appears.



6.3.2 Receiving message type settings (MESSAGE TYPE SETTING)

To display MESSAGE TYPE SETTING menu screen, select 2. MESSAGE TYPE SETTING.

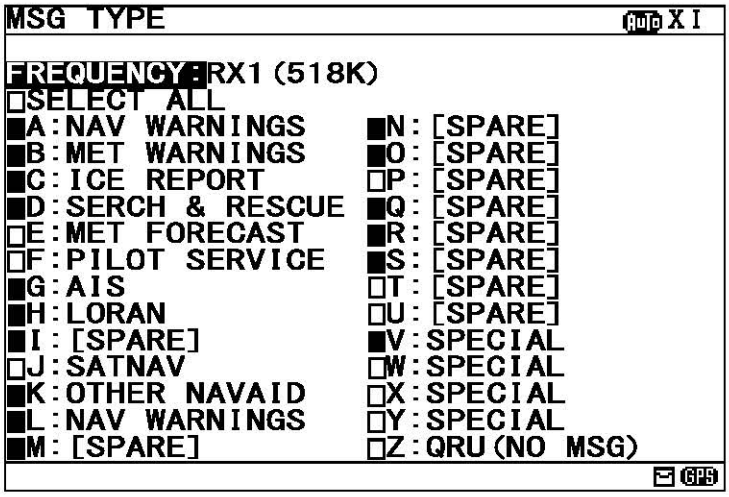


Fig.6-9 MESSAGE TYPE menu screen

The items of the receiving message type selection screen are as follows;

- FREQUENCY: Select the channel (RX1 (518k), RX2 (490k), RX3 (4209.5k)).
- □ SELECT ALL: Select all the messages from A to Z.
  ■: A message is received.
  □: A message is not received.
- Receiving message A – Z : Select receiving message from A to Z

Notes

Navigational warning [A], Meteorological warning [B], Search and rescue information/piracy and armed robbery [D], Navigational warning (additional) [L] are obliged to receive a message. These message types setting cannot be changed.

a. Select receiving message types

Start with selection of "FREQUENCY".
Carry out the procedure from section 3) to 5) of p.6-29 “a. Select receiving stations”.

b. Cancel settings

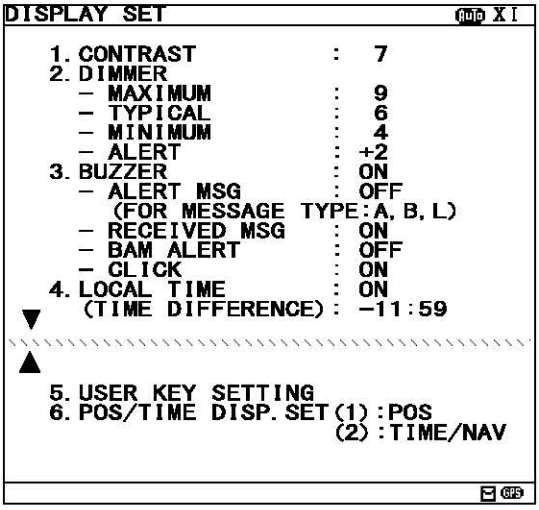
Carry out “b. Cancel settings” of p.6-30.

c. Save (or Clear) settings

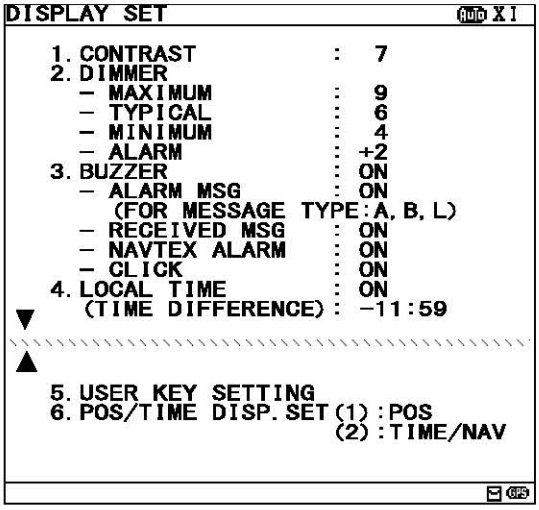
Carry out the procedure from section 1) to 4) of p.6-31 “d. Save (or Clear) settings”.

6.3.3 DISPLAY setting menu (DISPLAY SET)

To display DISPLAY SET menu screen, select 3.DISPLAY from MAIN MENU (6.3).
Display form, a buzzer, etc. can be set up on this screen.



(When connected to the BAM)



(When not connected to the BAM)

Fig.6-10 DISPLAY SET menu screen

Procedures

1. Press the ▲ ▼ key to select the menu item.
2. When ENT key or ▶ key is pressed, the menu screen of selected item is displayed.
   - When cursor is on the item 1-4 and 6, cursor moves to the right side of ":"
   - When cursor is on the item 5, the menu screen of item 5 appears.

Notes

- To return to the MAIN MENU screen, press the CLR key or ◀ key.
- If the ◀ key is pressed when cursor is on the right side of ":" of item 1-4 and 6, cursor returns on the item 1-4 and 6. (1.CONTRAST, 2. DIMMER, ...)
- The screen displayed actually is determined according to the setting of the BAM, which is set by our service center or agents.
  Refer to 6.3.3.2 Brightness Setting (DIMMER) and 6.3.3.3 Buzzer Setting (BUZZER) for details.

The outlines of menus are as follows;

1. CONTRAST:	Adjust the contrast of this display.	(See 6.3.3.1)
2. DIMMER:	Set up the brightness level of this display.	(See 6.3.3.2)
3. BUZZER:	Select buzzer ON/OFF.	(See 6.3.3.3)
4. LOCAL TIME:	Input local time.	(See 6.3.3.4)
5. USER KEY SETTING:	Assign the often used function for the USER key	(See 6.3.3.5)
6. POS/TIME DISP.SET:	Set up the display of the POSITION/TIME screen.	(See 6.3.3.6)

6.3.3.1 Contrast adjustment (CONTRAST)

When 1. CONTRAST is selected, CONTRAST is ready to be entered. To adjust the contrast, press the ▲ ▼ key, and then press the ENT key.

```
1. CONTRAST          : 10
```

The adjustment of the contrast
- "1" is the darkest.
- "13" is the lightest.

The initial setting is "7".

6.3.3.2 Back light settings (DIMMER)

Brightness can be changed into four levels (MAXIMUM, TYPICAL, MINIMUM and OFF) by pressing the DIM key. These brightness levels are set up in this item.
The increase value of the brightness at the time of alarm generating can be changed from +1 to +9.

Select 2.DIMMER, and press the ENT key. Cursor moves to the right side of ":".
Number and brightness is changed when the ▲ ▼ key is pressed, and then press the ENT key.
Press the ENT key after setting up to "ALERT". All setting values are saved.

```
2. DIMMER
  – MAXIMUM          : 10
  – TYPICAL          :  8
  – MINIMUM          :  4
  – ALERT            : +2
```

Notes

- "MAXIMUM" should enter the largest numerical value and "MINIMUM" should enter the smallest numerical value.
- When not connect to the BAM, "ALERT" is displayed instead of "ALARM".

6.3.3.3 Buzzer settings (BUZZER)

When 3. BUZZER is selected, each buzzer functions can be set enable (ON) or disable (OFF) as followings.
Press the ▲ ▼ key and select the "ON" or "OFF".
Press the ENT key after setting up to "CLICK". All buzzer settings are saved.

```
3. BUZZER            : ON
  – ALERT MSG        : OFF
    (FOR MESSAGE TYPE:A, B, L)
  – RECEIVED MSG     : ON
  – BAM ALERT        : OFF
  – CLICK            : ON
```

ON: A buzzer is sounded.
OFF: A buzzer is not sounded.

BUZZER:	OFF: All buzzer functions are disabled. ON: Each buzzer function as shown below can be enabled.
- ALERT MSG:	When a message (A, B and L) is received.
- RECEIVED MSG:	When a message (other than A, B and L) is received.
- BAM ALERT :	When a failure alarm occurs.
- CLICK:	When a key is pressed.

Caution

When search and rescue message (D) is received, buzzer sounds. The SAR buzzer sound can not be set to "OFF (disable)".

Notes

When you connect to the BAM, the setting of ALERT MSG and BAM ALERT is always OFF.
You can not change the setting.

When you do not connect the BAM, it is the following notation.
-The notation of "ALERT MSG" is "ALARM MSG".
-The notation of "BAM ALERT" is "NAVTEX ALARM".

6.3.3.4 Time Difference setting (LOCAL TIME)

"LOCAL TIME" can set up time difference to UTC.

When "ON" is selected, "(LT)" is displayed in the POSITION/TIME screen. The time of the POSITION/TIME screen displays the numerical value which added time difference to UTC.
When "OFF" is selected, "(UTC)" is displayed.

Procudure

1. Select 4.LOCAL TIME, and press the ENT key. Cursor moves to the right side of ":".

2. Press the ▲ ▼ key and select the "ON" or "OFF", and then press the ENT key.
   The cursor moves to the lower line.

3. Press the ▲ ▼ key and select "+ (add) " or "- (sub)". Next, input the numerical value within the range of 00:00 to 12:00. (-12:00 to +12:00)
   To save the "LOCAL TIME" settings, cursor should press the ENT key on the rightmost position (minute).

Notes

The setup time difference is displayed on the POSITION/TIME screen.

6.3.3.5 Assigning to the USER key (USER KEY SETTING)

The USER key can be assigned to the often used function (screen).
Select 5. USER KEY SETTING, and press the ENT key. USER KEY SETTING screen appears.

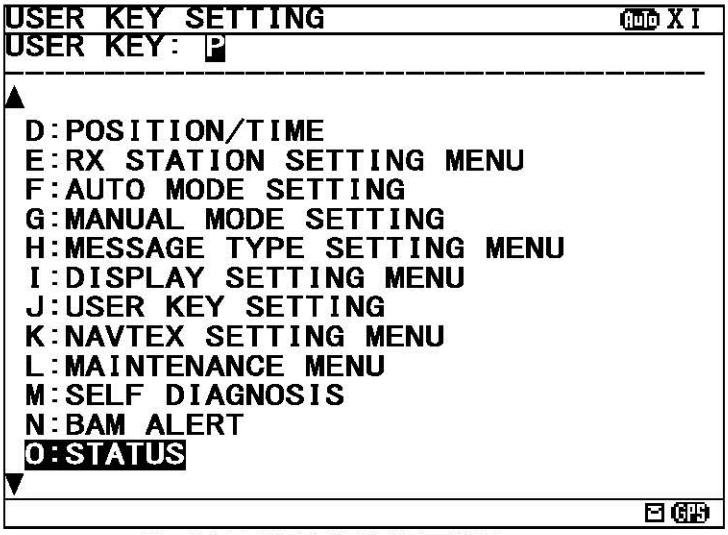


Fig.6-11 USER KEY SETTING screen

Press the ▲ ▼ key and select from "A" to "Z", and then press the ENT key. "USER KEY" setting is saved.
"▼" mark is displayed on the bottom line when the USER KEY SETTING screen is able to scroll downward.
"▲" mark is displayed on the top line when the USER KEY SETTING screen is able to scroll upward.
To display DISPLAY menu screen, press the CLR.

Refer to the following table about selectable items;

	Title	Explanation
A	MESSAGE LIST1	MESSAGE LIST 1 screen is displayed.
B	MESSAGE LIST2	MESSAGE LIST 2 screen is displayed.
C	SELECT MESSAGE LIST	SELECT MESSAGE LIST screen is displayed.
D	POSITION/ITME	POSITION/TIME screen is displayed.
E	RX STATION SETTING MENU	RX STATION menu screen is displayed.
F	AUTO MODE SETTING	AUTO MODE SETTING screen (RX STATION menu) is displayed.
G	MANUAL MODE SETTING	MAMUAL MODE SETTING screen (RX STATION menu) is displayed.
H	MESSAGE TYPE SETTING MENU	MESSAGE TYPE SETTING screen is displayed.
I	DISPLAY SETTING MENU	DISPLAY menu screen is displayed.
J	USER KEY SETTING	This screen (SER KEY SETTING) is displayed.
K	NAVTEX SETTING MENU	NAVTEX menu screen is displayed.
L	MAINTENANCE MENU	MAINTENANCE menu screen is displayed.
M	SELF DIAGNOSIS	SELF DIAGNOSIS screen (MAINTENANCE menu) is displayed.
N	BAM ALERT(NAVTEX ALARM)	BAM ALERT screen (MAINTENANCE menu) is displayed.
O	STATUS	STATUS screen (MAINTENANCE menu) is displayed.
P	PORT MONITOR	PORT MONITOR screen (MAINTENANCE menu) is displayed.
Q	STATION NAME	EDIT STATION NAME menu screen is displayed.
Y	PRINT	Printing is started if the USER key is pressed on the screen which can print the external printer. Printing is stopped if the CLR key is pressed during printing.
Z	NON USE	The USER key cannot be used.

Notes

When you do not connect to the BAM, the notation of "BAM ALERT" is "NAVTEX ALARM".

6.3.3.6 POSITION/TIME screen settings (POS/TIME DISP.SET)

"POS/TIME DISP.SET" can set up the item displayed on the POSITION/TIME screen.

POSITION/TIME screen can be displayed selecting items of "position (POS)", "time (TIME)", and "navigational information (NAV)".

```
6. POS/TIME DISP. SET (1) : POS
                      (2) : TIME/NAV
```

Procudure

1. Select 6.POS/TIME DISP. SET(1), and press the ENT key. Cursor moves to the right side of ":".

2. Press the ▲ ▼ key and select the "POS", "TIME" or "OFF", and then press the ENT key.
   This item is displayed on the upside of the POSITION/TIME screen.

Notes

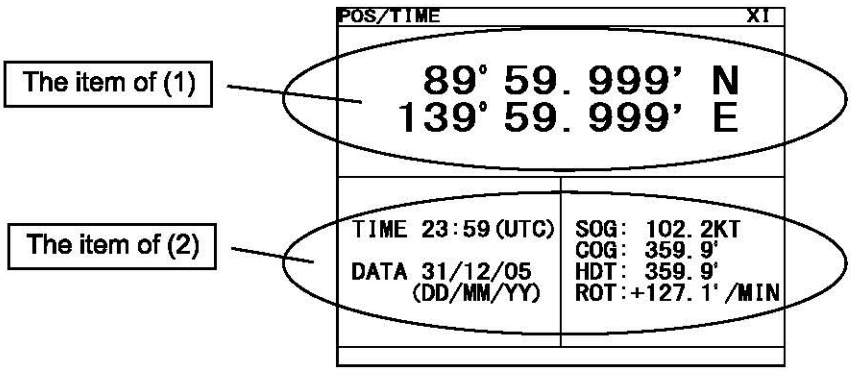
The setup time difference is displayed on the POSITION/TIME screen.
When you have selected "OFF", cursor ends the setup of this item, without moving to the lower line "(2)" and pressing the DISP key does not display the POSITION/TIME screen.

3. The cursor moves to the lower line "(2)". Press the ▲ ▼ key, and then press the ENT key.
   This item is displayed on the downside of the POSITION/TIME screen.

   (1): POS, The selectable items of "(2)" are as follows.
   OFF, TIME, TIME/NAV
   (1): TIME, The selectable items of "(2)" are as follows.
   OFF, POS, POS/TIME

- When "OFF" is selected, only the item of (1) is displayed on POSITION/TIME screen.
- When "TIME" (or "POS") is selected, this item is displayed on the downside of the POSITION/TIME screen.
- When "TIME/NAV" (or "POS/NAV") is selected, time is displayed on the left side, and navigational information is displayed on the right side of the POSITION/TIME screen.

Ex) The following figure is an example when selecting "POS" and "TIME/NAV".
(1): POS
(2): TIME/NAV



6.3.4 NAVTEXsetting menu (NAVTEX)

To display NAVTEX SET menu screen, select 4.NAVTEX from MAIN MENU (6.3).
Character size, printer setting, etc. can be set up on this screen.

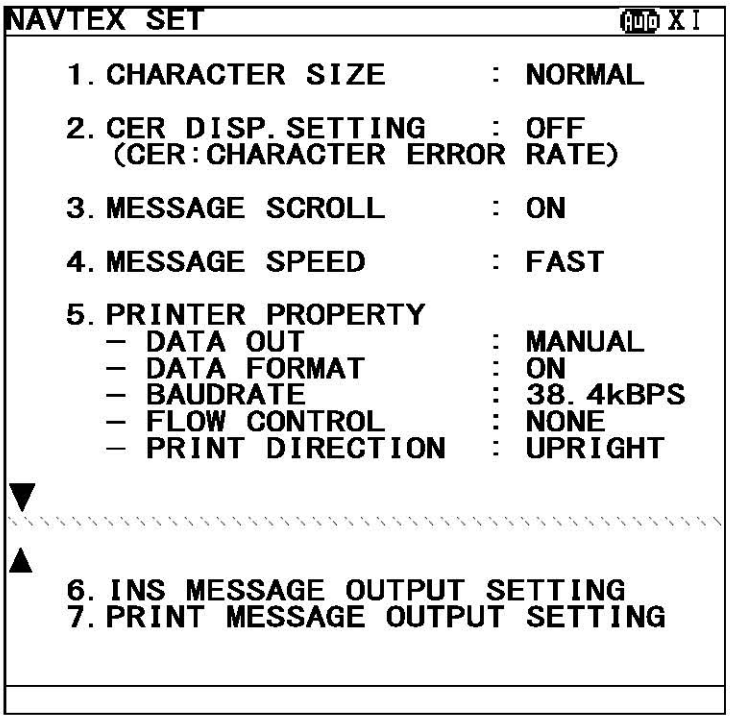


Fig.6-12 NAVTEX SET menu screen

Procedures

1. Press the ▲ ▼ key to select the menu item.
2. When ENT key or ▶ key is pressed, the menu screen of selected item is displayed.

Notes

- To return to the MAIN MENU menu screen, press the CLR key or ◀ key.
- If the ◀ key is pressed when cursor is on the right side of ":", cursor returns on the item.
  (1.CHARACTER SIZE, 2. CER DISP.SETTING, ...)

The outlines of menus are as follows;

1. CHARACTER SIZE:	Select the character size	(See 6.3.4.1)
2. CER DISP.SETTING:	Add "CER" to the end of message	(See 6.3.4.2)
3. MESSAGE SCROLL:	Set up the message scroll function	(See 6.3.4.3)
4. MESSAGE SPEED:	Select the scrolling speed	(See 6.3.4.4)
5. PRINTER PROPERTY:	Set up the external printer connection	(See 6.3.4.5)
6. INS MESSAGE OUTPUT SETTING:	Set up the external equipment output msg	(See 6.3.4.6)
7. PRINT MESSAGE OUTPUT SETTING:	Set up the external printer output msg	(See 6.3.4.7)

6.3.4.1 Character size setting (CHARACTER SIZE)

Displayed character can be changed into three sizes.

Select 1.CHARACTER SIZE, and press the ENT key. Cursor moves to the right side of ":".
Press the ▲ ▼ key, and then press the ENT key.
If the ENT key is pressed, the selected character size is saved, and the displayed character is changed.

```
1. CHARACTER SIZE    : NORMAL
```

The initial setting is "NORMAL".

NORMAL:	The normal character size: 13x9 dots
MEDIUM:	The medium character size: 16x9 dots
LARGE:	The large character size: 20x16 dots

6.3.4.2 CER setting (CER DISP.SETTING)

A message text can add "CER(*1)" to the end of message.
Select 2.CER DISP.SETTING, and press the ENT key. Cursor moves to the right side of ":".
Press the ▲ ▼ key and select the "ON" or "OFF", and then press the ENT key. This setting is saved

```
2. CER DISP. SETTING  : ON
   (CER : CHARACTER ERROR RATE)
```

The initial setting is "OFF".

ON:	"CER" is displayed on the end of message.
OFF:	"CER" is not displayed.

(*1): Character Error Rate

(When CER DISP.SETTING is set "ON")

```
 IA01 4209.5   15  04/06/09 12:34
123400 UTC JUNE 04
 JAPAN NAVTEX N.W.  NR 1260/2004
 KEIHIN KO,  TOKYO WEST PASSAGE.
 DAYTIME DAILY UNTIL 28 JUNE 2004
 35-35-02.0N 139-47-55.3E, WGS-84
 (END OF MESSAGE  CER :   3.5%)
LINE: 18/ 18
```

(When CER DISP.SETTING is set "OFF")

```
 IA01 4209.5   15  04/06/09 12:34
123400 UTC JUNE 04
 JAPAN NAVTEX N.W.  NR 1260/2004
 KEIHIN KO,  TOKYO WEST PASSAGE.
 DAYTIME DAILY UNTIL 28 JUNE 2004
 35-35-02.0N 139-47-55.3E, WGS-84
 (END OF MESSAGE)
LINE: 18/ 18
```

6.3.4.3 Automatic scrolling setting (MESSAGE SCROLL)

When character size has been selected "LARGE", a message text can be automatically scrolled on a screen.

Select 3.MESSAGE SCROLL, and press the ENT key. Cursor moves to the right side of ":".
Press the ▲ ▼ key and select the "ON" or "OFF", and then press the ENT key. This setting is saved

```
3. MESSAGE SCROLL    : ON
```

The initial setting is "ON"
ON: A message text scroll.
OFF: A message text does not scroll.

6.3.4.4 Scrolling speed adjustment (MESSAGE SPEED)

The speed of automatic scrolling can be changed into three levels.

Select 4.MESSAGE SPEED, and press the ENT key. Cursor moves to the right side of ":".
Press the ▲ ▼ key and select the "ON" or "OFF", and then press the ENT key. This setting is saved

```
4. MESSAGE SPEED     : NORMAL
```

The initial setting is "NORMAL".
SLOW: A character scrolls at the slowest speed.
NORMAL: A character scrolls at the normal speed.
FAST: A character scrolls at the fastest speed.

6.3.4.5 External printer settings (PRINTER PROPERTY)

Serial port (RS-232C: MAINTENANCE/PRINTER) conditions can be set up when connecting external printer.

Select 5.PRINTER PROPERTY, and press the ENT key. Cursor moves to the right side of ":".
After setting up to "FLOW CONTROL", press the ENT key. All settings are saved.

```
5. PRINTER PROPERTY
  – DATA OUT          : MANUAL
  – DATA FORMAT       : ON
  – BAUDRATE          : 4800BPS
  – FLOW CONTROL      : NONE
  – PRINT DIRECTION   : UPRIGHT
```

The explanations of each item are as follows;

(1) DATA OUT
The data output method for printer is set up.
Press the ▲ ▼ key and select the following items. If the ENT key is pressed, Cursor moves to the lower line.
OFF: The message is not outputted to the external printer.
AUTO: After receiving a message, the data is automatically outputted to the external printer.
MANUAL: The data of the selected message is outputted to the external printer.

(2) DATA FORMAT
The output data format is set up.
Press the ▲ ▼ key and select the following items. If the ENT key is pressed, Cursor moves to the lower line.
ON: The header and footer are added to a message text.
OFF: Only a message text is printed.
(The example of printing)

```
---- 518kHz NAVTEX MESSAGE ----
ZCZC IA01
TEST MESSAGE
NNNN
--- END OF MESSAGE CER = 0.0% ---
```

Header
Footer

(3) BAUDRATE
Baudrate (bits/sec) is set up.
Press the ▲ ▼ key and select the following items. If the ENT key is pressed, Cursor moves to the lower line.
Baudrate can be selected from "4800", "9600", and "38.4K." BPS.

(4) FLOW CONTROL
The flow control is set up.
Press the ▲ ▼ key and select the following items. If the ENT key is pressed, Cursor moves to the lower line.
NONE: The flow control is not performed.
HARD: The flow control is performed.

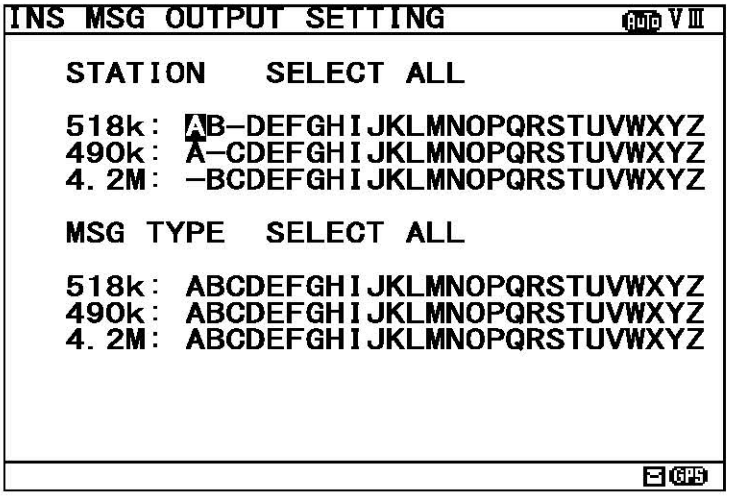
(5) PRINT DIRECTION
Print direction is set up.
Press the ▲ ▼ key and select the following items. If the ENT key is pressed, all settings are saved.
UPRIGHT: Upright printing (Set up when DPU-414 is connected.)
INVERT: Inverted printing (Set up when NKG-91 or NKG-901 is connected.)

The initial settings are as follows. Set up as follows when DPU-414 is connected.
If NKG-91 or NKG-901 is connected, please change PRINT DIRECTION into INVERT.

DATA OUT:	MANUAL
DATA FORMAT:	ON
BAUD RATE:	4800BPS
FLOW CONTROL:	NONE
PRINT DIRECTION:	UPRIGHT

6.3.4.6 External equipment message output settings (INS MSG OUTPUT SETTING)

INS port (DATA OUT) message output conditions can be set up when connecting external equipment.



The items of the station and message type selection screen are followings;

- Station A to Z and message type A to Z of outputted messages via INS port.
  - "SELECT ALL" : Select all the station or msg type from A to Z.
  - "A" to "Z" display : Messages are outputted via INS port.
  - "–" display : Messages are not outputted via INS port.

Notes

Navigational warning [A], Meteorological warning [B], Search and rescue information/piracy and armed robbery [D], Navigational warning [L] are obliged to receive a message. These message types setting cannot be changed.

a. Select stations and message type

Press the ▲ ▼ ◄ ► key to select station and messge type for setting.
- Pressing the ENT key switches alternately between "(A-Z) " and "– ".
- Select the "SELECT ALL" and press the ENT key, settings changes to all.

b. Cancel settings

When the CLR/ MENU/ DISP/ USER key is pressed while setting up "a. Select receiving stations and message type", the information screen (the sub screen) as shown in the following figure is displayed.

Select "OK" or "CANCEL".

OK: Canceling the receiving station settings, and the screen changes according to the pressed key.

CANCEL: The information screen is closed. Continue the station and message type settings.

c. Save (or Clear) settings

Save (or clear) the settings on the sub screen after setting up.

Procedures

1) Press the * key. The sub screen appears.
   Cursor is on the [ALL CLEAR].

2) Press the ▼ key and select the following items.

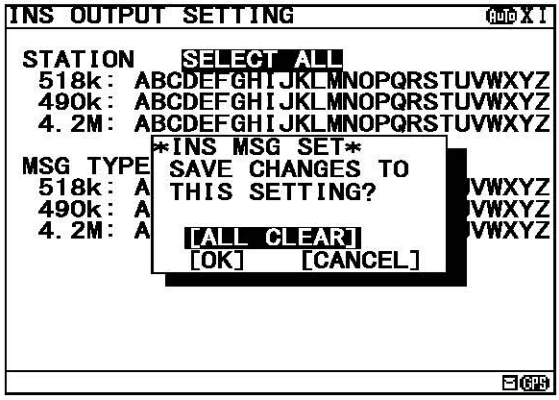
3) **Save settings**
   Select the [OK], and press the ENT key.

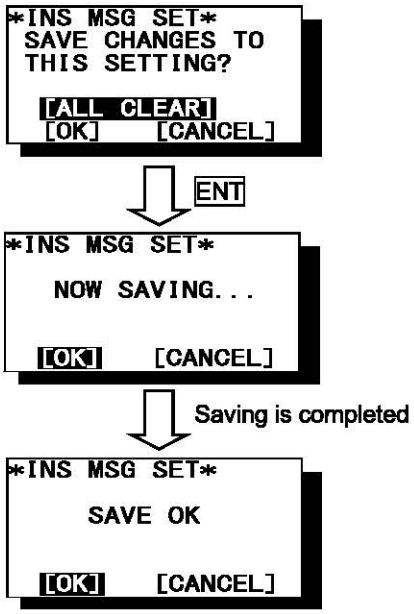
   Clear all settings
   Select the [ALL CLEAR], and press the ENT key.
   All the settings are restored to its former state.

   Continue setting up
   Select the [CANCEL], and press the ENT key.
   This sub screen is closed.

4) To start save process, select [OK].
   Then, "SAVE OK" is displayed on the sub screen.

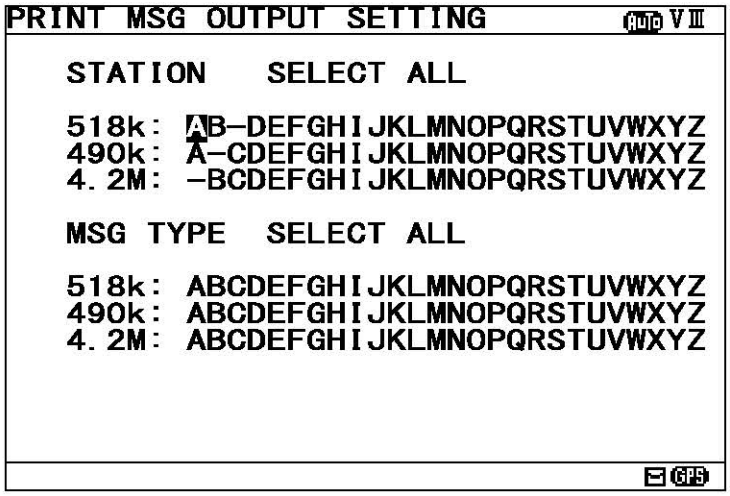
   Press the ENT or CLR key.
   NAVTEX menu screen appears.





6.3.4.7 External printer message output settings (PRINTER MSG OUTPUT SETTING)

Serial port (RS-232C: MAINTENANCE/PRINTER) message output conditions can be set up when connecting external printer.
The external printer message output settings can be operated when the DATA OUT of 5.PRINTER PROPERTY is "AUTO" setting.



The items of the receiving station and message type selection screen are followings;

- Station A to Z and message type A to Z of outputted messages via printer port.
  "SELECT ALL" : Select all the station or msg type from A to Z.
  "A" to "Z" display : Messages are outputted via printer port.
  "–" display : Messages are not outputted via printer port.

Notes

Navigational warning [A], Meteorological warning [B], Search and rescue information/piracy and armed robbery [D], Navigational warning [L] are obliged to receive a message. These message types setting cannot be changed.

a. Select stations and message type

Carry out "a. Select stations and message type " of p.6-43.

b. Cancel settings

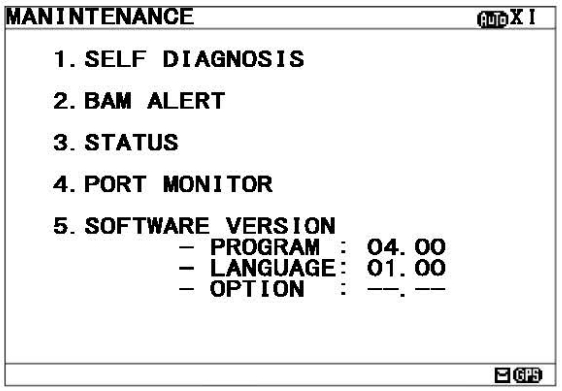
Carry out "b. Cancel settings" of p.6-43.

c. Save (or Clear) settings

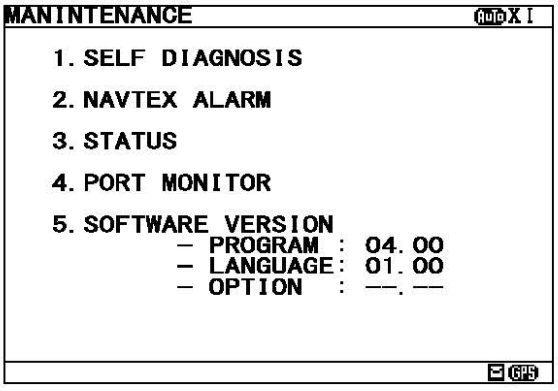
Carry out the procedure from section 1) to 4) of p.6-44 "c. Save (or Clear) settings".

6.3.5 MAINTENANCE menu (MAINTENANCE)

To display MAINTENANCE menu screen, select 5.MAINTENANCE from MAIN MENU (6.3).
Users can check current status of the system by the menu.



(When connected to the BAM)



(When not connected to the BAM)

Fig.6-13 MAINTENANCE menu screen

Procedures

1. Press the ▲ ▼ key to select the menu item.
2. When ENT key or ▶ key is pressed, the menu screen of selected item is displayed.
   - When cursor is on the item 1-4, cursor moves to the right side of ":"
   - When cursor is on the item 5, the menu screen of item 5 appears.

Notes

- To return to the MAIN MENU screen, press the CLR key or ◀ key.
- If the ◀ key is pressed when cursor is on the right side of ":", cursor returns on the item. (1.CHARACTER SIZE, 2. CER DISP.SETTING, ...)
-When you do not connect to the BAM, the notation of "2.BAM ALERT" is "2.NAVTEX ALARM".

The outlines of menus are as follows;

1. SELF DIAGNOSIS:	Perform self diagnosis test.	(See 6.3.4.1)
2. BAM ALERT: (NAVTEX ALARM)	Display alarm logs for disorders.	(See 6.3.4.2)
3. STATUS:	Display current status of NAVTEX setting.	(See 6.3.4.3)
4. PORT MONITOR:	Display serial data of each port.	(See 6.3.4.4)
5. SOFTWARE VERSION:	Display versions of software installed in NCR-333.	(See 6.3.4.5)

6.3.5.1 Self diagnosis (SELF DIAGNOSIS)

NCR-333 can be self-diagnosed.

Select 1.SELF DIAGNOSIS, and press the ENT key. SELF DIAGNOSIS screen appears.

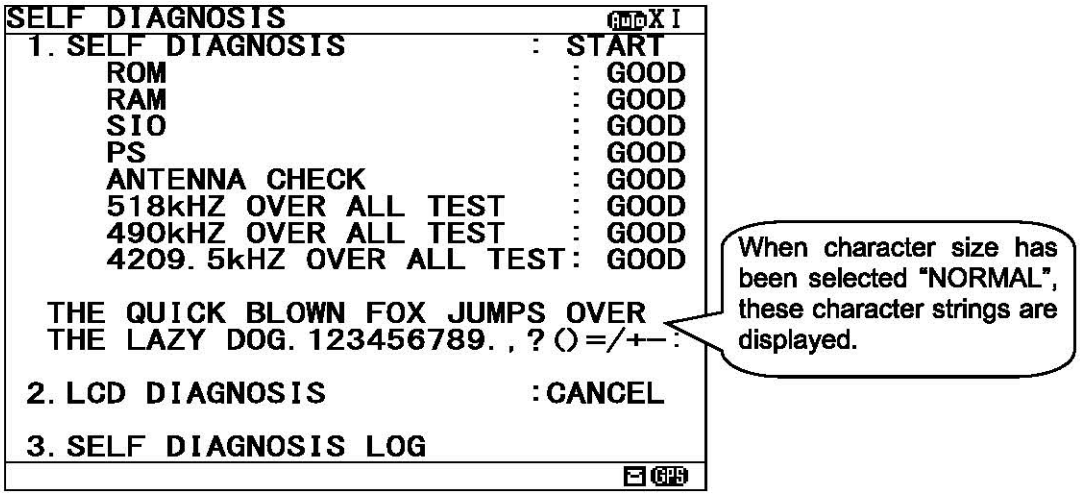


Fig.6-14 SELF DIAGNOSIS screen

Procudure

1. Press the ▲ ▼ key in order to select the item to diagnose.

2. When the ENT key is pressed, the menu screen of selected item appears.
   Pressing the ▶ key can display the same.
   - When cursor is on the item 1 or 2, cursor moves to the right side of ":"
   - When cursor is on the item 3, the menu screen of item 3 appears.

Notes

- To return to the MAINTENANCE screen, press the CLR key or ◀ key.
- If the ◀ key is pressed when cursor is on the "START" of the item 1 or 2, cursor returns on the item 1 or 2. (1.SELF DIAGNOSIS or 2.LCD DIAGNOSIS)

The outlines of menus are as follows;

1. SELF DIAGNOSIS: NCR-333 is diagnosed. (See a))
2. LCD DIAGNOSIS: LCD panel is diagnosed. (See b))
3. SELF DIAGNOSIS LOG: The diagnostic result log of the item 1 is displayed. (See c))

a. The Diagnosis of equipment (SELF DIAGNOSIS)

Procudure

1) Select 1.SELF DIAGNOSIS, and press the ENT key. Cursor moves to the right side of ":".

2) Press the ▲ ▼ key and select the following items;
   START: Self diagnosis is started. However, the diagnostic results are not printed.
   ST-PRTN: Self diagnosis is started. After self diagnosis is completed, the diagnosis results are printed.
   CANCEL: Self diagnosis is not started. Cursor returns to 1.SELF DIAGNOSIS.

3) Select the "START" or "ST-PRTN", and then press the ENT key.
   Self diagnosis starts by the "ROM" test and is ended by the "4209.5 kHz over all test".
   During diagnosis, "SELF DIAGNOSIS" of screen title repeats blink.
   The buzzer sounds at the last of diagnosis, and check that the buzzer sounds normally. Press CLR key to stop the beeping.

```
1. SELF DIAGNOSIS          : START
    ROM                    : GOOD
    RAM                    : GOOD
    SIO                    : GOOD
    PS                     : GOOD
    ANTENNA CHECK          : GOOD
    518kHZ    OVER ALL TEST:
    490kHZ    OVER ALL TEST:
    4209.5kHZ OVER ALL TEST:
```

"OVER ALL TEST" takes about 15 seconds per test.
Whenever one test (OVER ALL TEST) is completed, character string as shown in the following figure is displayed. When "*" is displayed in a character string, the test result is NG.

```
1. SELF DIAGNOSIS          : START
    ROM                    : GOOD
    RAM                    : GOOD
    SIO                    : GOOD
    PS                     : GOOD
    ANTENNA CHECK          : GOOD
    518kHZ    OVER ALL TEST: GOOD
    490kHZ    OVER ALL TEST:
    4209.5kHZ OVER ALL TEST:

 THE QUICK BLOWN FOX JUMPS OVER
 THE LAZY DOG. 123456789. , ? () =/+-:
```

OVER ALL TEST:
"OVER ALL TEST" is the test which outputs a test signal from the inside of the circuit, and receives the signal from each receiver.

Test signal (Character strings):
THE QUICK BLOWN FOX JUMPS OVER
THE LAZY DOG. 123456789.,?()=/+-:

Caution

When the result of the malfunction is displayed, contact our service center or an agency as soon as possible after referring to troubleshooting of Chapter 7.

The list of diagnosis items

Diagnosis items	Explanation	Corrective Action
ROM	The data memory and the program memory are checked. When the program memory is abnormal (NG), '[1]' is displayed, and when the data memory is abnormal, '[2]' is displayed.	Replace CMJ-501NA.
RAM	The memory for temporarily storage is checked.	
SIO	Serial interfaces are checked. When the 'ECDIS/GPS' port is abnormal (NG), '[1]' is displayed, and when the 'Maintenance/Printer' port is abnormal, '[2]' is displayed, and when the 'DISP' port is abnormal, '[3]' is displayed.	
PS	The power supply part is checked.	
ANTENNA CHECK	The DC voltage of the NAVTEX antenna is checked.	Replace CMN-2333A.
518KHZ OVER ALL TEST	Internal receiver (RX1) is checked.	
490KHZ OVER ALL TEST	Internal receiver (RX2) is checked.	
4209.5KHZ OVER ALL TEST	Internal receiver (RX3) is checked.	

b. The diagnosis of LCD panel (LCD DIAGNOSIS)

Procudure

1) Select 2.LCD DIAGNOSIS, and press the ENT key. Cursor moves to the right side of ":".

2) Press the ▲ ▼ key and select the following items;
   START: Diagnosis is started.
   CANCEL: Diagnosis is canceled, and cursor returns to 2.LCD DIAGNOSIS.

3) Select the "START", and press the ENT key.
   This diagnosis blinks the viewing area every 2 seconds. (White -> Black -> White-> ...)

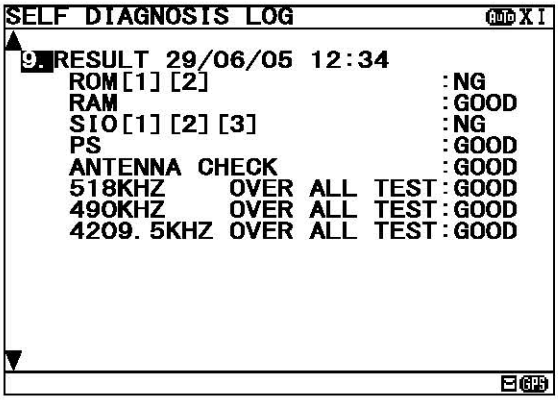
c. Self diagnosis log (SELF DIAGNOSIS LOG)

Procudure

1) Select 3.SELF DIAGNOSIS LOG, and press the ENT key. SELF DIAGNOSIS LOG screen appears.
   The newest result is displayed on this screen.

2) To display the next old result, press the ▼ key. (Up to last 10 results)

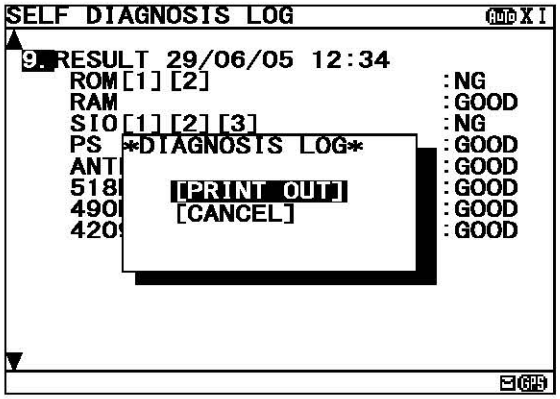
The diagnosed time is displayed when external GPS receiver is connected.
"--/--/-- --:--" is displayed when time is not able to be acquired. (External GPS receiver is not connected.)



To print a result to the external printer, press the * key in order to display the sub screen.
Select the "[PRINT OUT]", and press the ENT key. Printing is started.

To stop printing, press the CLR key while printing.

To return to the SELF DIAGNOSIS screen, select the "[CANCEL]" and press the ENT key.



6.3.5.2 Failure alert(BAM ALERT or NAVTEX ALARM)

(A)BAM ALERT (When connected to the BAM)

To display BAM alert screen, select 2.BAM ALERT from MAINTENANCE menu (6.3.5).
In the BAM alert screen, the present alert is displayed.
On the alert history screen, the alert which occurred in operation can be displayed from the latest one to a maximum of 20 affairs.

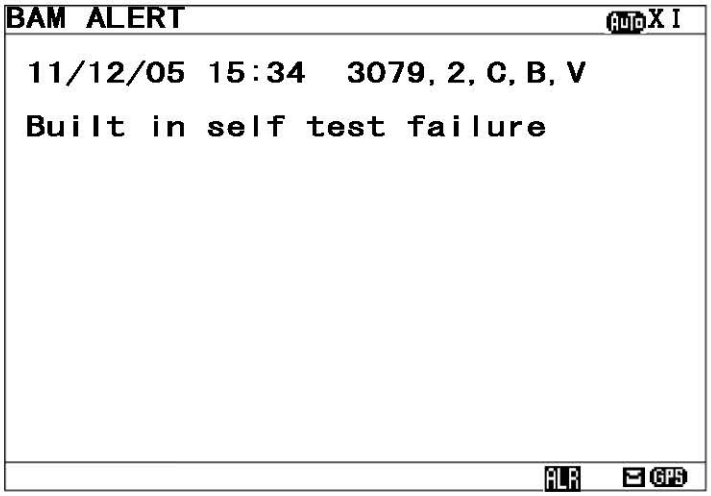


Fig.6-15 BAM ALERT screen

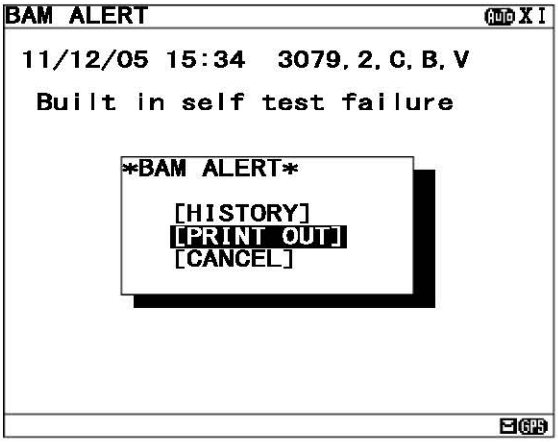
Notes

- To return to the MAINTENANCE screen, press the CLR key or ◀ key.
- "NO DATA" is displayed when BAM ALERT has not occurred.

To print the BAM alert to the external printer, press the * key in order to display the sub screen.
Select the "[PRINT OUT]", and press the ENT key. Printing is started.

To stop printing, press the CLR key while printing.

To return to the BAM alert screen, select the "[CANCEL]" and press the ENT key.



a. ALERT HISTORY

This screen displays a history of alarms which occur while the power is on. It displays the alarm history from the most recent one maximum 20 lines.
To return to the BAM ALERT screen, press the CLR key or ◀ key.

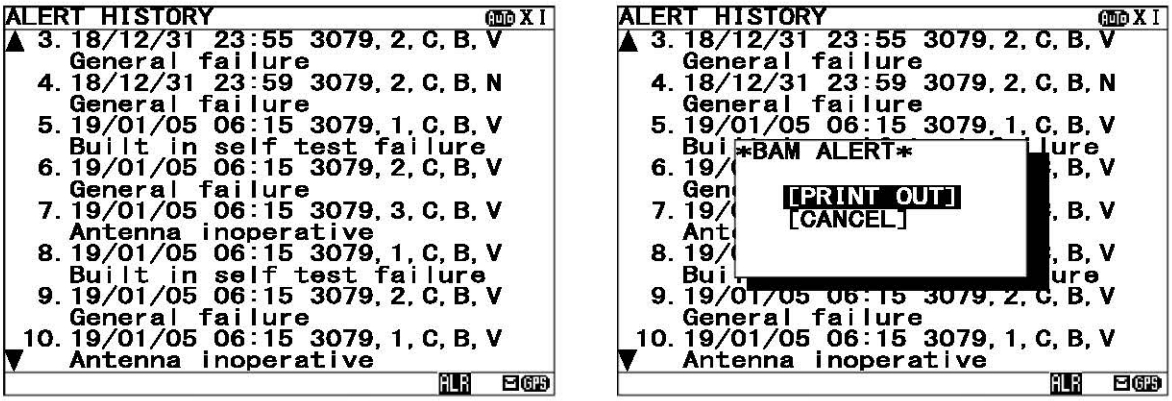


Fig.6-16 ALERT HISTORY screen

Proceudure

1) To display the next old result, press the ▼ key.
- "▼" mark is displayed on the bottom line when the alert history screen is able to be scrolled downward.
  "▲" mark is displayed on the top line when the alert history screen is able to be scrolled upward.
- Press the ▲ ▼ key and scroll the viewing area.

The time of an alarm occurred and is restored is displayed when external GPS receiver is connected.
"--/--/-- --:--" is displayed when time is not able to be acquired. (External GPS receiver is not connected.)

The display of the alert is described.

Alert message: 3079, 2, C, B, V, General failure
1 2 3 4 5

1: The alert ID (refer to the following table)
2: The priority (defined by the BAM)
3: The category (defined by the BAM)
4: The alert condition -> "V": Alarm is occurring ,"N": Healthy status
5: Alert's description text (refer to the following table)

The list of BAM alert

Alert ID	Alert's description text	Priority	Category	The contents of unusual detection
3079,1	Built in self test failure	C	B	Self diagnosis failure
3079,2	General failure	C	B	Unusual detection at the power supply part
3079,3	Antenna inoperative	C	B	Unusual detection of antenna power supply
3079,4	Flash memory error	C	B	The data in a memory is broken.
3079,5	Rx unit modem error	C	B	Unusual detection at the modem part
3079,6	Printer error	C	B	External printer has malfunction
3116,1	Receiver1(518kHz) malfunction	C	B	Unusual detection at the RX1(518kHz)
3116,2	Receiver2(490kHz) malfunction	C	B	Unusual detection at the RX2(490kHz)
3116,3	Receiver3(4.2MHz) malfunction	C	B	Unusual detection at the RX3(4.2MHz)

2) To print the BAM ALERT to the external printer, press the * key in order to display the sub screen.
Select the "[PRINT OUT]", and press the ENT key. Printing is started.
[PRINT OUT]: Printing is started.
[CANCEL]: Diagnosis is canceled, and the sub screen is closed.

(B)NAVTEX ALARM (When not connected to the BAM)

To display NAVTEX ALARM screen, select 2.NAVTEX ALARM from MAINTENANCE menu (6.3.5).
In the NAVTEX ALARM screen, the present alarm is displayed.
On the ALARM HISTORY screen, the alarm which occurred in operation can be displayed from the latest one to a maximum of 20 affairs.

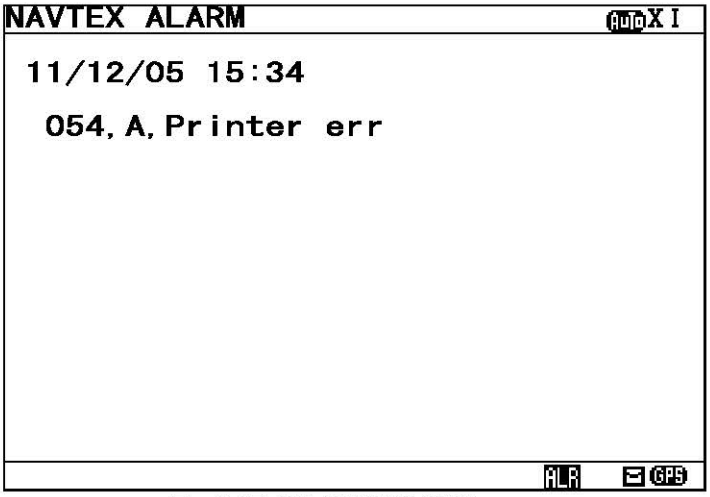


Fig.6-17 NAVTEX ALARM screen

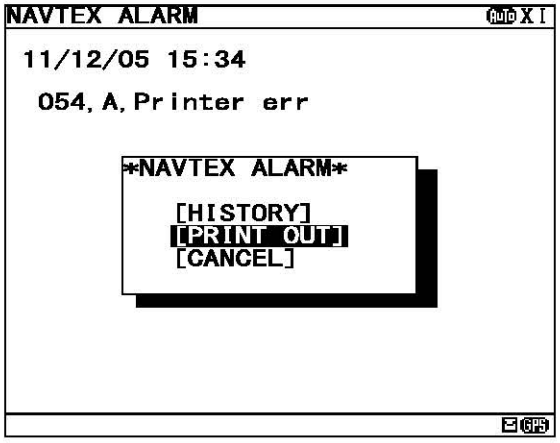
Notes

- To return to the MAINTENANCE screen, press the CLR key or ◀ key.
- "NO DATA" is displayed when NAVTEX alarm has not occurred.

To print the NAVTEX alarms to the external printer, press the * key in order to display the sub screen.
Select the "[PRINT OUT]", and press the ENT key. Printing is started.

To stop printing, press the CLR key while printing.

To return to the NAVTEX ALARM screen, select the "[CANCEL]" and press the ENT key.



a. ALARM HISTORY

This screen displays a history of alarms which occur while the power is on. It displays the alarm history from the most recent one maximum 20 lines.
To return to the NAVTEX ALARM screen, press the CLR key or ◀ key.

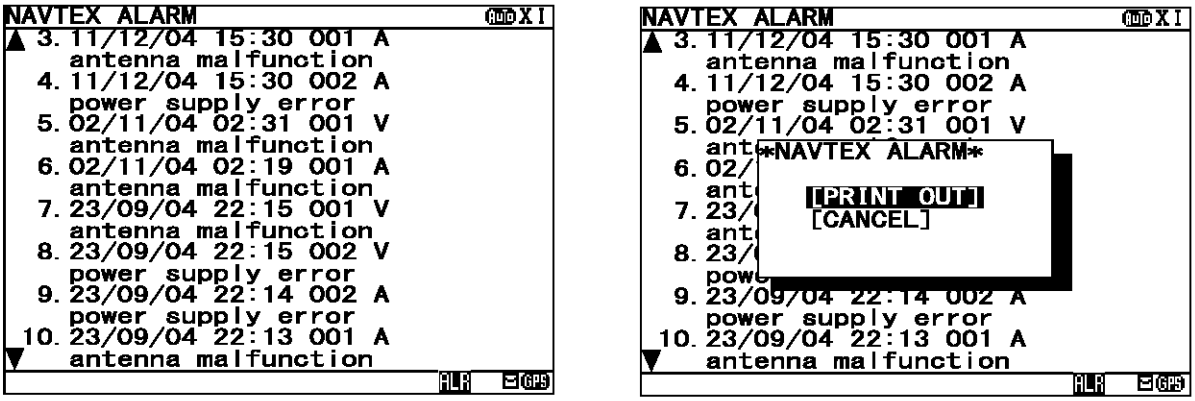


Fig.6-18 ALARM HISTORY screen

Proceudure

1) To display the next old result, press the ▼ key.
- "▼" mark is displayed on the bottom line when the alarm history screen is able to be scrolled downward.
  "▲" mark is displayed on the top line when the alarm history screen is able to be scrolled upward.
- Press the ▲ ▼ key and scroll the viewing area.

The time of an alarm occurred and is restored is displayed when external GPS receiver is connected.
"--/--/-- --:--" is displayed when time is not able to be acquired. (External GPS receiver is not connected.)

The display of the alarm is described.
Alarm message: 001, V, antenna malfunction
1 2 3
1: The alarm number (refer to the following table)
2: The alarm condition -> "V": Healthy status, "A": Alarm is occurring
3: Alarm's description text (refer to the following table)

The list of NAVTEX alarm

Alarm No.	Alarm's description text	The contents of unusual detection
004	Receiver malfunction	Unusual detection at the RX
005	Built in self test failure	Self diagnosis failure
006	General failure	Unusual detection at the power supply part
051	Antenna malfunction	Unusual detection of antenna power supply
052	Flash memory error	The data in a memory is broken.
053	Rx unit modem error	Unusual detection at the modem part
054	Printer error	External printer has malfunction
055	EXT SIO output error	Unusual detection at the "DISP" output port
056	Receiver 1 malfunction	Unusual detection at the RX1
057	Receiver 2 malfunction	Unusual detection at the RX2
058	Receiver 3 malfunction	Unusual detection at the RX3

2) To print the NAVTEX alarms to the external printer, press the * key in order to display the sub screen.
Select the "[PRINT OUT]", and press the ENT key. Printing is started.
[PRINT OUT]: Printing is started.
[CANCEL]: Diagnosis is canceled, and the sub screen is closed.

6.3.5.3 Setting status of the NAVTEX Receiver (STATUS)

To display STATUS screen, select 3.STATUS from MAINTENANCE menu (6.3.5).
The setting information of NCR-333 is displayed on the screen.

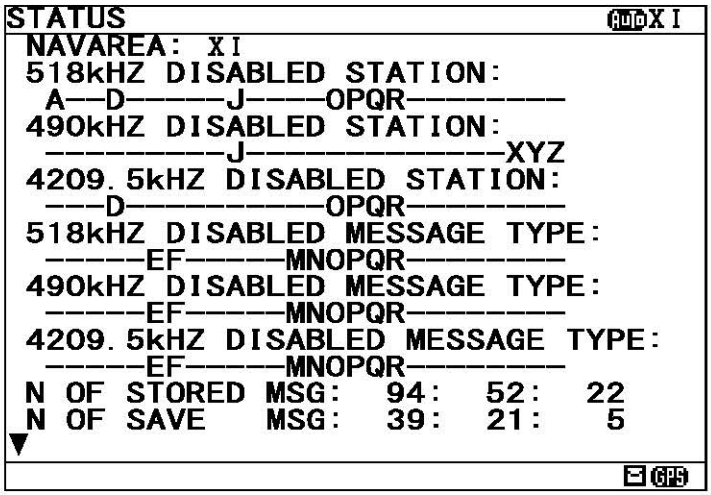


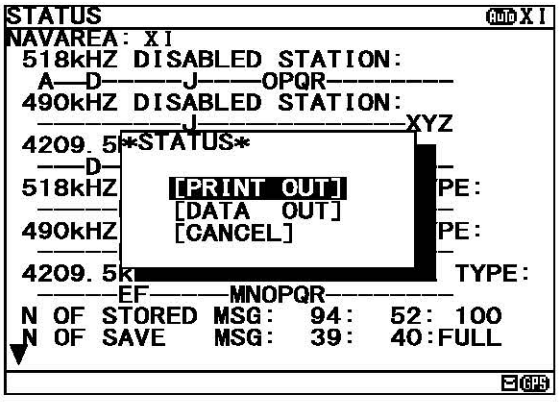
Fig.6-19 STATUS screen

The setting information of each items are as follows;

- 518 (490, 4209.5) kHz DISABLED STATION:
  The alphabet of stations which does not receive is displayed.
- 518 (490, 4209.5) kHz DISABLED MESSAGE TYPE:
  The alphabet of message type which does not receive is displayed.
- N OF STORED MSG: The number of the stored messages is displayed. Starting from the left, 518k, 490k, and 4209.5 kHz are displayed. When the number of the stored messages is the maximum, it is displayed as "FULL".
- N OF SAVE MSG: The number of the saved messages is displayed. Starting from the left, 518k, 490k, and 4209.5 kHz are displayed. When the number of the saved messages is the maximum, it is displayed as "FULL".
- INS MSG OUTPUT SETTING:
  The alphabet of stations and msg type which does not output ins is displayed.
- PRINT MSG OUTPUT SETTING:
  The alphabet of stations and msg type which does not output printer is displayed.

Notes

- To return to the MAINTENANCE screen, press the CLR key or ◀ key.



Press the * key in order to display the sub screen.

To print the setting status to the external printer, select the "[PRINT OUT]", and press the ENT key.
To stop printing, press the CLR key while printing.

To output the status data to serial ports, select the "[DATA OUT]", and press the ENT key.
To stop outputting press the CLR key while data outputting.

To return to the STATUS screen, select the "[CANCEL]" and press the ENT key.

6.3.5.4 Port monitor (PORT MONITOR)

Select 4.PORT MONITOR, and press the ENT key. PORT MONITOR screen appears.

Select the port for monitoring. It can check whether data is normally outputted from the port.
In addition, the displayed data can be stored temporarily to be rechecked.

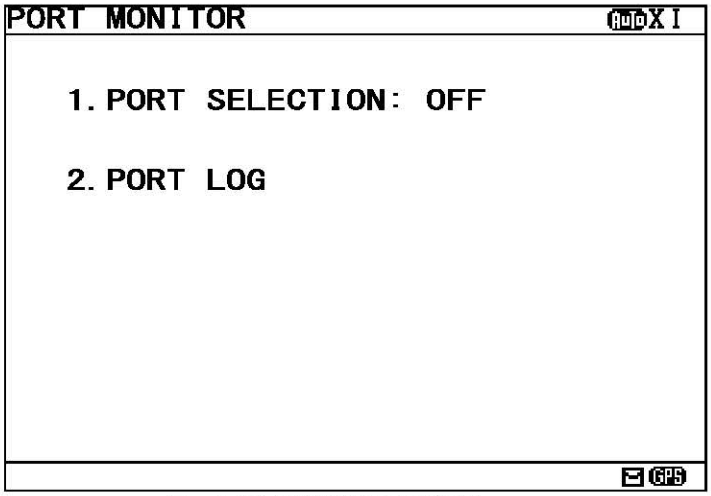


Fig.6-20 PORT MONITOR screen

Procudure

1. Press the ▲ ▼ key in order to select the items.

2. When the ENT key is pressed, the menu screen of selected item appears.
   Pressing the ▶ key can display the same.
   - When cursor is on the item 1, cursor moves to the right side of ":"
   - When cursor is on the item 2, the menu screen of item 2 appears.

Notes

- To return to the MAINTENANCE screen, press the CLR key or ◀ key.
- If the ◀ key is pressed when cursor is on the right side of ":" of the item 1, cursor returns on the item 1. (1.PORT SELCTION)

The outlines of menus are as follows;

1. PORT SELECTION:	Select the port to check the serial in/output data. (See a. The check of in/output data)
2. PORT LOG:	The data stored temporarily is displayed. (See c. Port log)

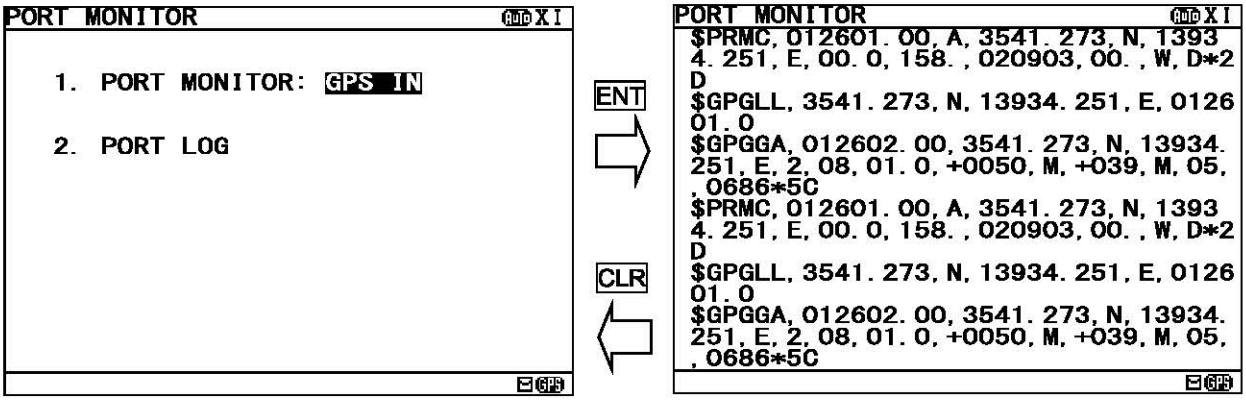
a. The check of in/output data (PORT SELECTION)

Procudure

1) Select 1.PORT SELECTION, and press the ENT key. Cursor moves to the right side of ":".

2) Press the ▲ ▼ key and select the following items;
   - OFF: The monitoring of each port does not carry out.
   - GPS IN: Input data of the GPS port
   - DISP IN: Input data of the DISP (Option) port
   - DISP OUT: Output data of the DISP (Option) port

3) Example - Select the "GPS IN", and press the ENT key.
   PORT MONITOR menu screen changes to the data display screen.



Notes

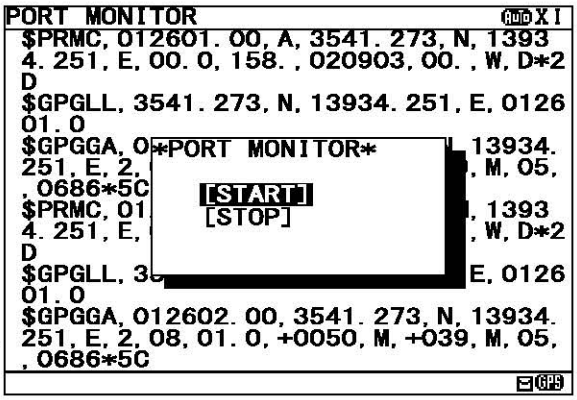
- When neither the GPS receiver nor MPD is connected to the port of "GPS IN" and "DISP IN", nothing is displayed on the data display screen.

b. Store the displaying data temporarily

Procudure

1) Press the * key. The sub screen appears.

2) Select the "[START]", and press the ENT key. Storing of the displaying data is started.
   During storing, the following is displayed on the screen title.
   " NOW LOGGING... "



Notes

- When the MENU, DISP or USER key is pressed, storing of the displaying data is stopped.
- Data is recordable to two screens.
- Data is stored until the power is turned off.

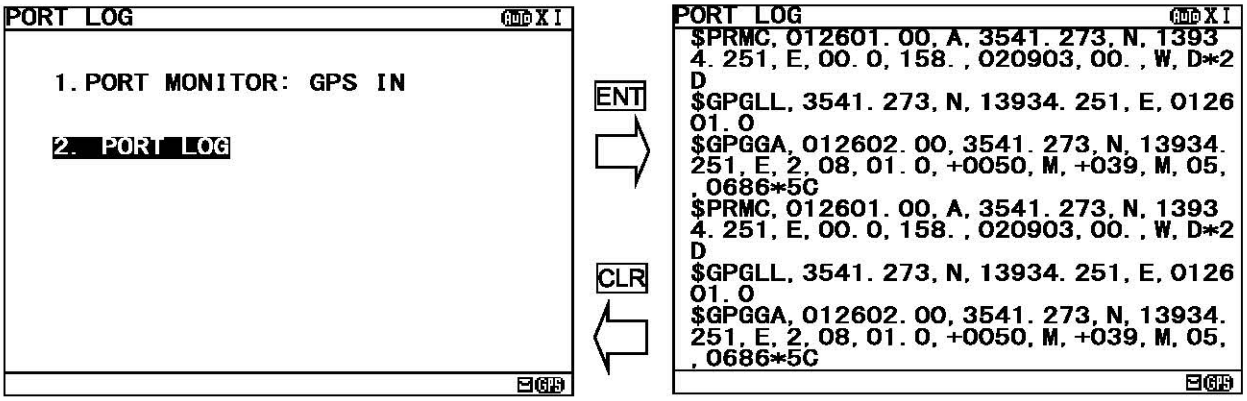
3) For canceling, select the "[STOP]" and press the ENT key.
   The sub screen is closed, and storing of the displaying data is stopped.

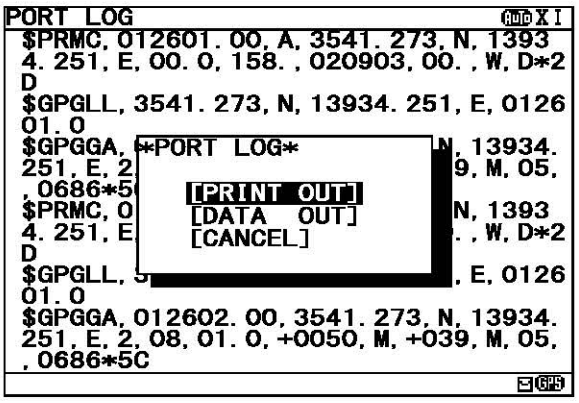
c. Port log (PORT LOG)

Procudure

1) Select 2.PORT LOG, and press the ENT key. PORT LOG screen appears.
The data stored in the PORT MONITOR is displayed on this screen.

2) "▼" mark is displayed on the bottom line when the PORT LOG screen is able to be scrolled downward.
"▲" mark is displayed on the top line when the PORT LOG screen is able to be scrolled upward.
Press the ▲ ▼ key and scroll the viewing area.





Press the * key. The sub screen appears.

To print the setting status to the external printer, select the "[PRINT OUT]", and press the ENT key.
To stop printing, press the CLR key while printing.

To output the status data to serial ports, select the "[DATA OUT]", and press the ENT key.
To stop outputting, press the CLR key while data outputting.

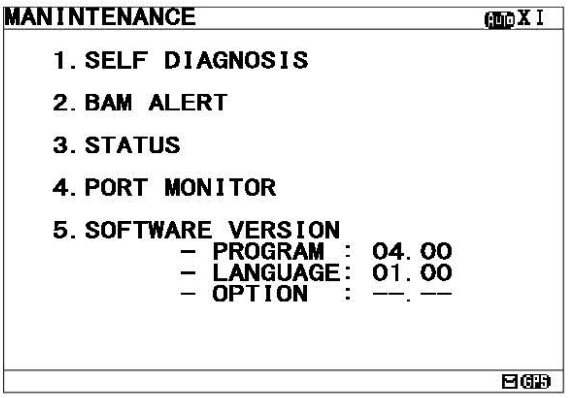
To return to the PORT LOG screen, select the "[CANCEL]" and press the ENT key.

Notes

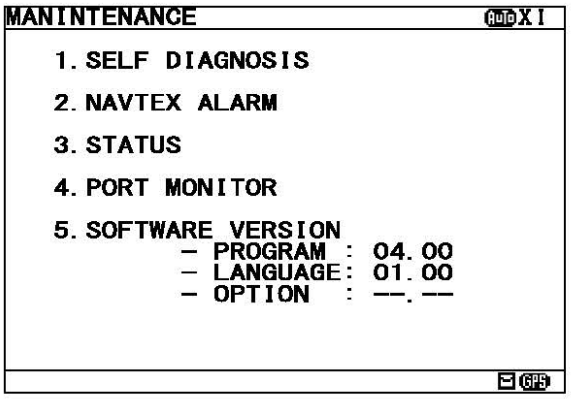
- All the character strings displayed on the PORT LOG screen are printed.

6.3.5.5 Software version (SOFTWARE VERSION)

When MAINTENANCE menu screen is displayed, the present software version is displayed on the item 5.
To display the MAIN MENU, press the CLR key.



(When connected to the BAM)



(When not connected to the BAM)

Fig.6-21 Maintenance manu screen

The explanations of each item are as follows;

- PROGRAM: Program version is displayed.
- LANGUAGE: Langage version is displayed.
- OPTION: Option langage version is displayed.
  When the option language is not installed, "--.--" is displayed.

Notes

When you do not connect to the BAM, the notation of "2.BAM ALERT" is "2.NAVTEX ALARM".

6.3.7 The display language setting (LANGUAGE)

To select the display language, select 6.LANGUAGE from MAIN MENU (6.3).
Press the ▲ ▼ key and select the language. When the ENT key is pressed, menu screens are displayed in the selected language.

6. LANGUAGE: ENGLISH

When the language data is already installed, the language name is displayed as follows.

- FRENCH
- PORTUGUESE
- ITALIAN
- SPANISH

When the option language is already installed, the option language name is displayed.

The initial setting is "ENGLISH".

Notes

In case the language setting is selected except for "ENGLISH", the character size is only medium.

7. MAINTENANCE AND INSPECTION

The performance and longevity of this equipment depend on careful maintenance. To maintain the best performance, the following periodic inspections are highly recommended.

⚠CAUTION

- Keep the power supply voltage within the specified value (10.8 – 31.2Vdc).
- Know the condition of normal status when the equipment is properly functioning. Keep comparing the current status to the normal status to immediately detect any malfunctions.
- Use the printer paper as specified by JRC. The use of any other unspecified paper may cause printinging density blurs, abnormal paper feed, much dust, resulting in the damage of the printer.

⚠WARNING

- Do not attempt to inspect or repair the inside of this equipment with the exception of qualified service personnel, as doing so may cause fire, electric shock or malfunction. If any malfunctions are detected, contact our service center or agents.
- Use only specified fuses.
  The use of other fuse may cause fire and/or damage.

  The fuses are used for NBG-319 or NBG-320.
  The power switch on the power distribution panel must be turned off during replacing a fuse. Remove the cap of the front panel, and then exchange fuses.

7. 1 General Maintenance and Inspection

Below are listed general maintaining and inspecting items, which can be done with usual tools and apparatus.

No.	Item	Maintenance and inspection
1	Cleaning	Gently clean the surface of the panel, switches, and cover with soft cloth or silicon oil. No oil is needed because this unit has no moving mechanisms inside.
2	Looseness of parts	Inspect for looseness and correctly tighten the following: Screws, nuts and connectors.

7. 2 Periodic Inspection

Regarding the functions for performing self-diagnosis and monitoring the system status, please refer to "6.3.5 MAINTENANCE menu(MAINTENANCE)"

7.2.1 Confirming the RX station and Message type

To check the receiving station and message type, please refer to 6.1.3 and 6.3.2. Be sure to set up the receiving station and message type correctly.

7.2.2 Confirming the Alert / Alarm Status

(A) When connected to the BAM

With referring 6.3.5.2(A), confirm that failure alert is not occurring. If any alert occurs, check the cause of the alert. NCR-333 Alert Table is followings.

NCR-333 Alert Table

Failure alert list (ALF sentence output)

Alert ID	Indication	Alarm Occurrence Conditions
3079,1 3079,2	Built in self test failure General failure	After carrying out self-diagnosis, NCR-333 detected that the input voltage was abnormal.
3079,1 3079,3	Built in self test failure Antenna inoperative	After carrying out self-diagnosis, NCR-333 detected that the output voltage of antenna terminal was low voltage.
3079,1 3116,1	Built in self test failure 518kHz inoperative	After carrying out self-diagnosis, NCR-333 detected that the receiver 1 (518kHz) could not receive because of abnormalities.
3079,1 3116,2	Built in self test failure 490kHz inoperative	After carrying out self-diagnosis, NCR-333 detected that the receiver 2 (490kHz) could not receive because of abnormalities.
3079,1 3116,3	Built in self test failure 4.2MHz inoperative	After carrying out self-diagnosis, NCR-333 detected that the receiver 3 (4209.5kHz) could not receive because of abnormalities.
3079,2	General failure	The input voltage is low level.
3079,5 3116,1	Rx unit modem error 518kHz inoperative	The receiver 1 (518kHz) could not receive because of internal MODEM failure.
3079,5 3116,2	Rx unit modem error 490kHz inoperative	The receiver 2 (490kHz) could not receive because of internal MODEM failure.
3079,5 3116,2	Rx unit modem error 4.2MHz inoperative	The receiver 3 (4209.5kHz) could not receive because of internal MODEM failure.
3079,3	Antenna inoperative	The output voltage of antenna terminal is low voltage.
3079,4	Flash memory error	The flash memory data is abnormal.
3079,6	Printer error	External printer is abnormal.

(B) When not connected to the BAM

With referring 6.3.5.2(B), confirm that failure alarm is not occurring. If any alarm occurs, check the cause of the alarm. NCR-333 Alarm Table is followings.

NCR-333 Alarm Table

Failure alarm list (ALR sentence output)

Alarm No.	Indication	Alarm Occurrence Conditions
005 006	Built in self test failure General failure	After carrying out self-diagnosis, NCR-333 detected that the input voltage was abnormal.
005 051	Built in self test failure Antenna malfunction	After carrying out self-diagnosis, NCR-333 detected that the output voltage of antenna terminal was low voltage.
004 005 056	Receiver malfunction Built in self test failure Receiver 1 malfunction	After carrying out self-diagnosis, NCR-333 detected that the receiver 1 (518kHz) could not receive because of abnormalities.
004 005 057	Receiver malfunction Built in self test failure Receiver 2 malfunction	After carrying out self-diagnosis, NCR-333 detected that the receiver 2 (490kHz) could not receive because of abnormalities.
004 005 058	Receiver malfunction Built in self test failure Receiver 3 malfunction	After carrying out self-diagnosis, NCR-333 detected that the receiver 3 (4209.5kHz) could not receive because of abnormalities.
006	General failure	The input voltage is low level.
053 056	Rx unit modem error Receiver 1 malfunction	The receiver 1 (518kHz) could not receive because of internal MODEM failure.
053 057	Rx unit modem error Receiver 2 malfunction	The receiver 2 (490kHz) could not receive because of internal MODEM failure.
053 058	Rx unit modem error Receiver 3 malfunction	The receiver 3 (4209.5kHz) could not receive because of internal MODEM failure.
051	Antenna malfunction	The output voltage of antenna terminal is low voltage.
052	Flash memory error	The flash memory data is abnormal.
054	Printer error	External printer is abnormal.
055	EXT SIO output error	"DISP" output port is abnormal.

7. 3 Trouble Shootings

7.3.1 Trouble Shootings

⚠ WARNING

Do not attempt to inspect or repair the inside of this equipment with the exception of qualified service personnel, as doing so may cause fire, electric shock or malfunction. If any malfunctions are detected, contact our service center or agents.

For reference, this section presents a troubleshooting guideline for finding defective sections.

Symptom of Error	Possible Cause or Cause of Fault	Countermeasures
Power is not supplied when the power switch is pressed.	Power is not distributed from the inboard distribution panel.	Supply power from the distribution panel.
	Power is not supplied from the power supply unit or NCR-333.	Check that the wiring of the power unit is correct. Check that the output voltage of the power unit or NCR-333 is correct.
	Power that the power unit supplies is out of range.	Replace the power unit.
	The fuses in the Power Supply Unit (Option) are blown out.	Check that the wiring is correct and replace the fuses.
	The power supply cable is broken.	Replace the power supply cable.
	The controller switch is broken.	Replace the CMD-953 circuit board.
Some dots are missing on the LCD.	The LCD malfunctions.	Replace the LCD.
	The control unit malfunctions.	Replace the CMJ-501NA circuit board.
No alarming sound is generated.	The buzzer malfunctions.	Replace the CMD-953 circuit board.
	The control unit malfunctions.	Replace the CMJ-501NA circuit board.
The illumination does not light.	The control unit malfunctions.	Replace the CMJ-501NA circuit board.
	The LCD malfunctions.	Replace the LCD.
No NAVTEX message is received.	The polarity or antenna cable is incorrect.	Check if the polarity is correct and connect it.
	Neither the receiving station nor the message type is selected correctly.	Refer to "6.3.1" or "6.3.2".
	The NAVTEX antenna (NAW-333) is damaged.	Replace the NAW-333.
	The following alarm number appears: 004. Internal receiver 1, 2 or 3 is broken.	Replace the CMN-2333A.
Sensor data (external GPS, gyro, and rate-of-turn) cannot be loaded.	The polarity of the serial cable is incorrect.	Check if the polarity is correct and connect it.
	The interface between the sensor and NCR-333 is incorrect.	Check if the interface is correct before its connection.
	The sentence that the sensor generates is not supported by the NCR-333.	Check the output command and the version.
	The serial format (baud rate, etc.) does not meet the setting of the controller.	Check the serial format of the sensor.

	The sensor (GPS, gyro, rate-of-turn indicator) malfunctions.	Replace the sensor.
Symptom of Error	Possible Cause or Cause of Fault	Countermeasures
Sensor data (external GPS, gyro, and rate-of-turn) cannot be loaded.	The DPU (CMJ-501NA) malfunctions.	Replace the CMJ-501NA circuit board.
The external printer does not print	The external printer is not ON.	Turn on the external printer.
	The printer power is not turned on.	Check the printer power cable.
	Printer property (printer settings) is incorrect.	Refer to "6.3.4.5".

7.3.2 Maintenance Units

Maintenance units for repair are followings.

No.	Unit Name	Model	Note
1	RX UNIT	CMN-2333A	When changing from CMN-2333 to CMN-2333A, please replace with CMJ-501NA
2	DPU	CMJ-501NA	When changing from CMJ-501N to CMJ-501NA, please replace with CMN-2333A
3	KEYBOARD UNIT	CMD-953-1	
4	NAVTEX ANTENNA	NAW-333-1	ANTENNA for NCR-333
5	POWER SUPPLY UNIT	NBG-319	DC: +12/24Vdc
6	POWER SUPPLY UNIT	NBG-320	AC:100/220Vac,DC:+24Vdc
7	Whip Antenna	5ABBE00001	0.6 m

Fuses

No.	Unit Name	Model	Note
1	5A Fuse	ULTSC 5A N1	For NBG-319
2	2A Fuse	MQ4 250V 2A N1	For NBG-320
3	4A Fuse	MQ2 125V 4A N1	For NBG-320

7.3.3 Spare parts for periodic maintenance

Spare parts for periodic maintenance are followings.
Call our service center or agents for ordering the spare parts.

No.	Unit Name	Code	Decline period	Note
1	LCD Unit	CCN-392	40,000 hours	5 years in continuous operation
2	Printer (Option)	DPU-414	Approx. 500,000 lines	When the thermal paper of 25m roll length is used, about 90 thermal papers can be used.
3	Printer (Option)	NKG-91 NKG-901	Approx. 100 million pulses	When the thermal paper of 25m roll length is used, about 500 thermal papers can be used.
4	Printer paper	6ZCAF00252A		For DPU-414 Roll length is 25m
5	Printer paper	7ZPJD0384		For NKG-91 and NKG-901 Roll length is 25m

8. AFTER-SALES SERVICE

Warranty

- The warranty period is determined by JRC's warranty regulations, but is normally one year from the date of purchase day.
  Additionally, the warranty except for the body text is submitted to contractual agreements.

Holding period of Service parts

- Keeping period of maintenance parts is ten years from the production is discontinued.

Before returning repair

If what appears to be a malfunction is detected, refer to "7.3 Troubleshooting" to check if the equipment is actually defective before requesting repair.
If the defect persists, immediately stop operation and call our service center or agents.

- During the warranty period, our agencies or we will repair the malfunction without any fee, according to the specified procedure.
- After the warranty expires, we will repair the malfunction for a fee, if repair is possible. In this case, send the parts or we'll repair onboard in a specified port. The parts may be repaired in a plant if it's unrepairable onboard.
- Item for notification
  Product name, type, manufactured data, serial number,
  information about the malfunction (the more detailed, the better),
  information about the alarm number and software version,
  your company or organization name, address and phone number.

Periodical maintenance recommendation

Performance of this equipment may degrade over time because parts wear out, although degradation depends on how this unit has been maintained.
We recommend periodic professional maintenance checks in addition to daily maintenance.

Call our service center or agents for periodic professional maintenance (This maintenance requires a service charge).

Call our office or the nearest agency for detailed information about after-sales service.

[JRC offices or the nearest agency]
See the List of JRC offices or the nearest agency at the end of this manual.

9. SPECIFICATIONS

9.1 NAVTEX RECEIVER (NCR-333)

9.1.1 Receiver

(1) Receiving frequency : 518kHz, 490kHz and 4209.5kHz
(2) Receiving modulation : F1B
(3) Sensitivity : CER ≦ $1x10^{-2}$ at 1uV (CER: Character Error Rate)
(4) Antenna input : 50 ohms for NAVTEX antenna
50 ohms for wide-band antenna
High impedance for wire antenna

9.1.2 Operation panel

(1) Type of display : 5.7-inch FSTN LCD, 320×240 dots
Message display (33charactor × 16line)
(2) Key board : 12 keys
(3) Back-light : For LCD and key board
(4) Dimmer control : Bright, medium1, medium2, off (Selectable from keyboard)

9.1.3 Power supply

(1) Input voltage : 10.8 - 31.2 Vdc

(2) Power consumption : 9 W (at 24 Vdc input)

9.1.4 External interfaces

(1) INS (Integrated Navigation System) communication ports DATA IN / DATA OUT
One communication port meets the requirements of IEC 61162-1
- Baudrate : 4800bps
- Data bit : 8bits
- Parity : none
- Stop bit : 1bit
- Flow control : none

(2) External printer / maintenance port PRINTER/MAINTENANCE
One communication port meets the requirements of RS-232C (D-sub 9pin).
- Baud rate : User setting (4800 / 9600 / 38.4k bps)
- Data bit : 8bits
- Parity : none
- Stop bit : 1bit
- Flow control : User setting (Hard / None)

(3) Remote maintenance data output port DATA OUT2
One output port meets the requirements of IEC 61162-1

(4) Photo mos relay terminals EXT ALM
One port for external alarm device

(5) Photo coupler terminals BK
One port for 12Vdc or 24Vdc

(6) MPD (Multi purpose display) communication port DISP
One communication port meets the requirements of RS-485

9.1.5 Environmental condition

Durability and resistance to environmental conditions: protected from the weather (IEC 60945)

(1) Equipment category : Protection against weather
(2) Operating temperature : -15°C to +55°C (IEC 60945)
(3) Storage temperature : -25°C to +75°C
(4) Humidity resistance : After 4 hours at + 40 ° C, 93% RH, no abnormality
(5) Vibration resistance :amplitude up to 2 to 5 Hz and 13.2 Hz ± 1 mm ± 10%
: 13.2 to 100 Hz Maximum acceleration 7 m / s²
After sweeping in three axial directions, testing of 2 hours or more.
No abnormality
(6) Ingress Protection : IP22

9.1.6 Supported interface sentences

Independent of the connection of the BAM

Indication	Sentence format	Supported sentence formatters	
DATA IN	Input data		
DATA OUT	IEC61162-1 (NMEA Ver 1.5 - 2.3)	Longitude/Latitude Time / Position	RMC,GGA,GLL
		Datum Reference	DTM
		Speed Over Ground (SOG)	RMC, VTG
		Course Over Ground (COG)	RMC, VTG
		Heading	HDT
		Rate of Turn	ROT
	IEC61097-6	Request NAVTEX messages	NRM
		Set NAVTEX mask	NRM
	Output data		
	IEC61097-6	New NAVTEX received message	NRX
		Set NAVTEX mask	NRM

When connected to the BAM

Indication	Sentence format	Supported sentence formatters	
DATA IN	Input data		
DATA OUT	IEC61162-1 (NMEA Ver 4.1)	Alert command	ACN
	Output data		
	IEC61162-1 (NMEA Ver 4.1)	Alert sentence	ALF
		Cyclic alert list	ALC
		Heartbeat supervision sentence	HBT
		Alert command refuse	ARC

When not connected to the BAM

Indication	Sentence format	Supported sentence formatters	
DATA IN	Input data		
DATA OUT	IEC61162-1 (NMEA Ver 1.5 - 2.3)	Acknowledge alarm	ACK
	Output data		
	IEC61162-1	Set alarm state	ALR

9.1.7 Received message log

(1) Stored message : Stores the 200 last received messages (*1). (Each channel)
(2) Saved message : Stores the 50 stored messages (*1). (Each channel)
(*1): message ... 500 character long message

Stored messages are erased 70 hours after their reception.
The source of time for handling message ageing is RMC sentence from an external source (DATA IN).
When the data from the external source is not inputted, it is counted by the internal timer.

9.2 NAVTEX ANTENNA (NAW-333 - Option)

9.2.1 Electrical characteristics

(1) Receiving frequency	: 518kHz, 490kHz and 4209.5kHz
(2) Bandwidth	: 504kHz : ±20kHz
	4209.5kHz : ±100kHz
(3) Consumption current	: 6.5Vdc 23mA (Typ.)
(4) Impedance	: 50 ohms

9.2.2 Environmental condition

(1) Equipment category	: Exposure to weather
(2) Operating temperature	: -25°C to +55°C (IEC 60945)
(3) Humidity resistance	: After 4 hours at + 40 ° C, 93% RH, no abnormality

9.3 POWER SUPPLY UNIT (NBG-320 - Option)

(1) Input voltage	: 90 - 132 / 180 - 242 Vac , 50/60Hz Single phase
	: 21.6 - 31.2 Vdc (Back up power supply)
(2) Output voltage	: 10.8 - 13.2 Vdc
	5.85 - 7.15 Vdc (for External Printer)
(3) Maximum current	: 1.5 A (12 V)
	2.0 A (6.5V)

9.4 POWER SUPPLY UNIT (NBG-319 - Option)

(1) Input voltage	: 10.8 - 31.2Vdc
(2) Output voltage	: 10.8 - 31.2Vdc
	5.85 - 7.15 Vdc (for External Printer)
(3) Maximum current	: 1.5 A (12 / 24V)
	2.0 A (6.5V)

9.5 PRINTER (DPU-414 – Option)

(1) Desktop type	
(2) Power voltage	: 6.5Vdc
(3) Maximum current	: 2.0 A (In case character printing)
(4) Total Character per line	:40 character

9.6 PRINTER (NKG-91 – Option)

(1) Flush mount or wall mount type	
(2) Power voltage	: 5.0 - 8.7 Vdc
(3) Maximum current	: 2.0 A (In case character printing)
(4) Total Character per line	:16 character

9.7 PRINTER (NKG-901 – Option)

(1) Flush mount or wall mount type
(2) Power voltage : 5.0 - 8.7 Vdc
(3) Maximum current : 2.0 A (In case character printing)
(4) Total Character/line :16 character

9.8 PERIPHERAL DEVICE INTERFACE

9.8.1 GPS Navigation device interface

Communication standard	Compliant with NMEA0183 / IEC 61162-1 Ed.5 (2016)
Communication protocol	4800 bps, start 1 bit, data 8 bits, stop 1 bit, No parity
Input sentence and information type	GGA : GPS positioning information RMC : Minimum positioning information GLL : Geographical position information VTG : Progress direction, Speed information DTM : Geodetic information ROT : Turning angular velocity information HDT : True azimuth information ACK : Alarm response

(1) Interface circuit

■ Electrical characteristics

Input current consumption : 2 mA or less at 2 V input
Maximum input voltage : ± 15 V or more
Recommended operating current : 2 mA or more

9.8.2 RMS interface

Communication standard	Compliant with IEC 61162-1 Ed.5 (2016)
Communication protocol	4800 bps, start 1 bit, data 8 bits, stop 1 bit, No parity
Output message	Proprietary sentence conforming to IEC 61162-1 $ PJRCL sentence (for storing logs in RMS) $ PJRCM sentence (Equipment ID = "CR")
Information type	Equipment type, serial number, self-diagnosis information etc.

10. OPTIONS OPERATION

10.1 PRINTER (DPU-414)

⚠CAUTION

DO NOT allow metal or liquids to touch the internal parts or slot of the printer. Doing so may cause fire, electric shock, or other accidents.

DO NOT disassemble or remodel the printer. DO NOT repair the printer yourself. Doing so may cause fire, electric shock or other accidents.

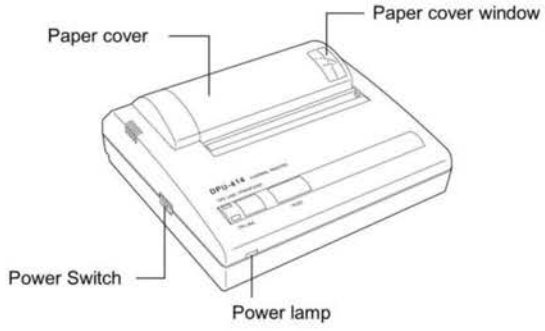
Never use the printer in a place of extreme humidity or any place where it can possibly be splashed by any liquids. If any liquids get into the printer, it could lead to fire, electric shock, or other serious accidents.

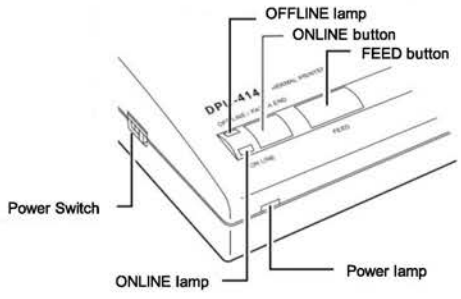
Be sure to hold the connector part of the power cable or interface cable when disconnecting the cable. Pulling on the cable portion may cause it to fray and break.

In the following cases, power OFF the printer, unplug the power cable from the power outlet.

- The printer does not recover from an error.
- Smoke, strange noise or smells erupt from the printer.
- A piece of metal or any liquid touches the internal or slot of the printer.

Using the printer in an abnormal state may cause an accidents or fire.





■ Operation Panel■

1. Power Switch : Slide the power switch to turn the power on (ONLINE) or off.
2. FEED button : Feeds paper when pressed in OFFLINE mode.
3. ONLNE button : Press to toggle between OFFLINE and ONLINE.
4. Power lamp : Indicates the power is on.
5. ONLINE lamp : Indicates the printer is ONLINE.
6. OFFLINE lamp : Indicates the printer is OFFLINE.
   If the paper is not set or has run out, the lamp flashes. When an error occurs, both the ONLINE and off-line lamps light.

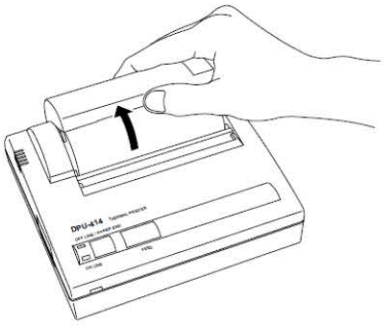
Caution

◇Do not press and hold the ONLINE button and FEED button for 30 seconds or more, because it will cause the DIP switches to reset and you will not be able to use the printer.

◇Be sure the thermal head is in the home position (at the left end) before turning off the power switch. If the head is not in the home position for a long period, the print quality might be degraded.

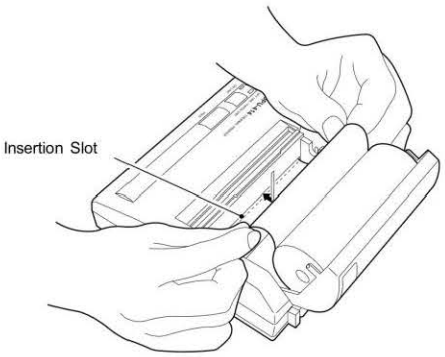
■ Loading the printer paper ■

1. Lightly push up on the front of the paper cover with your thumb and rotate it toward the back of the printer. (Close the paper and push down on it into place)



2. Loading the Paper
   Push the edge of the paper into Insertion Slot.
   The printing surface is the outside of the thermal paper roll.
   The auto-loader catches paper and feeds it through the paper cutter.

   Confirm the ONLINE lamp is ON. If ONLINE lamp is OFF, Push the ONLINE Switch.



Note If the paper feeds not straight and not smoothly, keep pressing the FEED button until the paper feeds straight and smoothly.

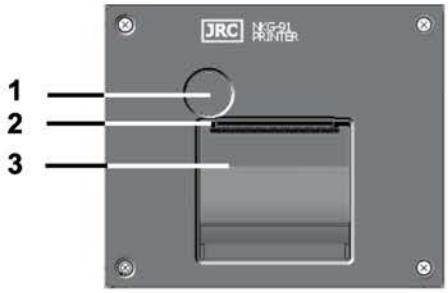
10.2 PRINTER (NKG-91)

⚠CAUTION

The thermal head of the NKG-91 printer may be very hot after printing. Do not touch the thermal head of the printer. Make sure that the thermal head is cool before replacing the paper or cleaning the thermal head.

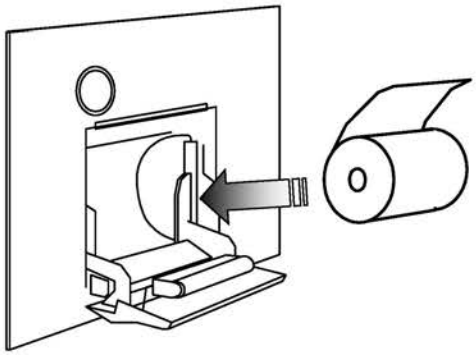
The paper used in the NKG-91 printer is heat sensitive. Take the following precautions when using this paper.

- Store the paper away from heat, humidity, or heat sources.
- Do not rub the paper with any hard objects.
- Do not place the paper near organic solvents.
- Do not allow the paper to come in contact with polyvinyl chloride film, erasers, or adhesive tape for long periods of time.
- Keep the paper away from freshly copied diazo type or wet process copy paper.



1. Paper cover open button
2. Paper cutter
3. Paper cover

■ Loading the printer paper ■



1. Press the paper cover open button.

   The paper cover will open.

2. Insert the paper as shown in the right figure.

   Position the paper such that the leading edge extends outside the printer, and press both sides of the paper cover to close it.

Note The printer will be turned on and off simultaneously with the equipment.

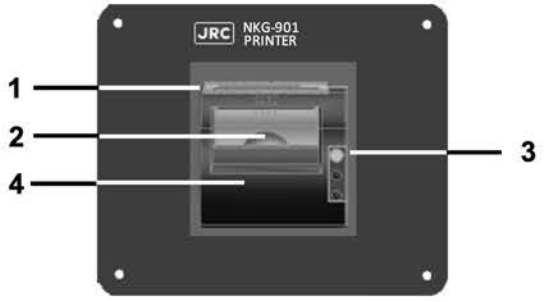
10.3 PRINTER (NKG-901)

⚠CAUTION

The thermal head of the NKG-901 printer may be very hot after printing. Do not touch the thermal head of the printer. Make sure that the thermal head is cool before replacing the paper or cleaning the thermal head.

The paper used in the NKG-901 printer is heat sensitive. Take the following precautions when using this paper.

- Store the paper away from heat, humidity, or heat sources.
- Do not rub the paper with any hard objects.
- Do not place the paper near organic solvents.
- Do not allow the paper to come in contact with polyvinyl chloride film, erasers, or adhesive tape for long periods of time.
- Keep the paper away from freshly copied diazo type or wet process copy paper.



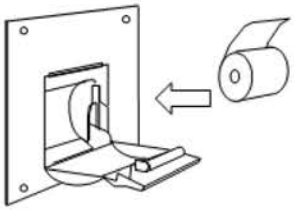
1.Paper cutter
2.Opening/Closing lever
3.Feed switch
4.Paper cover

■ Loading the printer paper ■

1. Pull the Opening/Closing lever up to release the paper cover. The paper cover will open.

2. Insert the paper as shown in the right figure.

   Leave the thermal paper edge from the printer, press the center at the top face of the paper cover until you hear it click and close it.



Note The printer will be turned on and off simultaneously with the equipment.
Press the feed switch in power on state of the printer, the printer send out the thermal paper.

10.4 Software for PC (CYC-333)

1. Preparing

1.1 Required equipment

- Personal computer

  OS:Windows7/8/10, Having the COM port(RS-232C) : built-in port or USB-COM adapter etc.

- D-SUB 9-pin straight cable (9-pin male connector and 9-pin female connector)
- Software file (NAVTEX PC.exe)

1.2 Copy the software file (NAVTEX PC.exe) to the arbitrary holder of the personal computer.

1.3 Open the cover of PRINTER/MAINTENANCE connector of the NAVTEX receiver NCR-333.

1.4 Connect the D-SUB 9-pin straight cable between the PRINTER/MAINTENANCE connector of the NAVTEX receiver NCR-333 and COM port (RS-232C) of the personal computer.

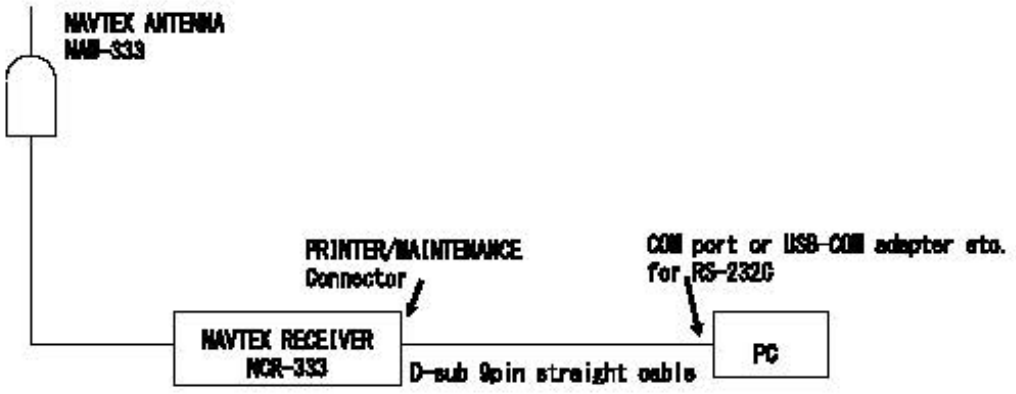


Fig 10.4.1 connection diagram

1.5 Turn the power of the NAVTEX receiver NCR-333 on. In the Main Menu, select [4.NAVTEX] - [5.PRINTER PROPERTY]. Setup and check the PRINTER PROPERTY as the followings.

```
5.PRINTER PROPERTY
 - DATA OUT          : AUTO
 - DATA FORMAT       : ON
 - BAUDRATE          : 4800BPS
 - FLOW CONTROL      : NONE
 - PRINT DIRECTION   : UPRIGHT
```

Fig 10.4.2 NAVTEX setting

2. Software for PC (CYC-333)

2.1 Select "COM Port" menu, and then select the connected COM port number.
The baudrate selects 4800bps. How to output receiving data to a personal computer from NAVTEX receiver NCR-333, refer to this Instruction manual "6.2.7.2 Message list1" - "f. Print messages or the information on equipment.".

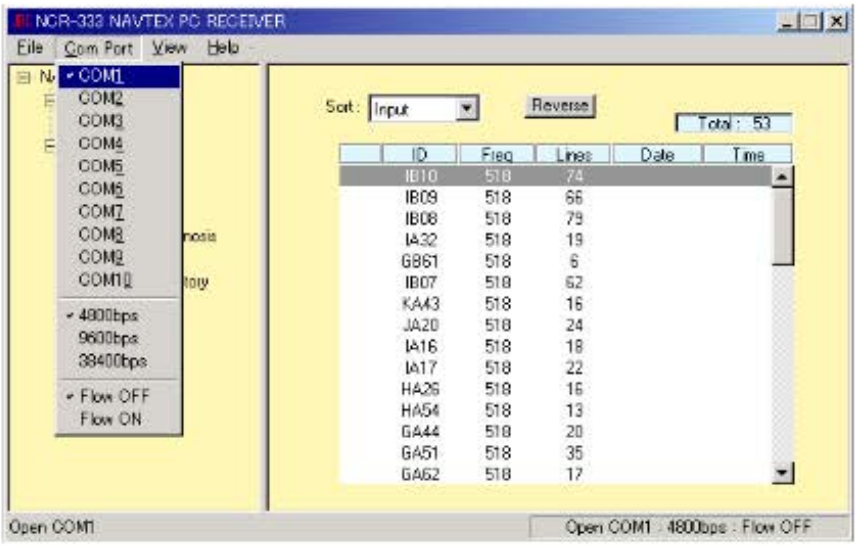


Fig 10.4.3 Display of COM port setting and baudrate setting

2.2 Display of receiving NAVTEX message

2.2.1 Click "Msg list" on the left side of the screen.

2.2.2 Select a NAVTEX message from the message list.

2.2.3 Double click the message to display the NAVTEX message.

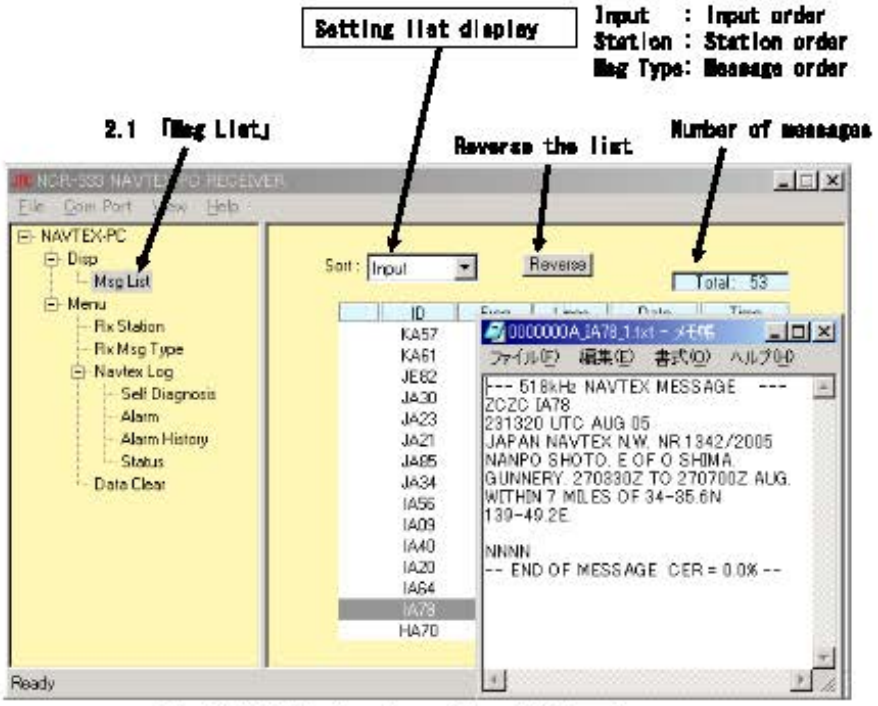


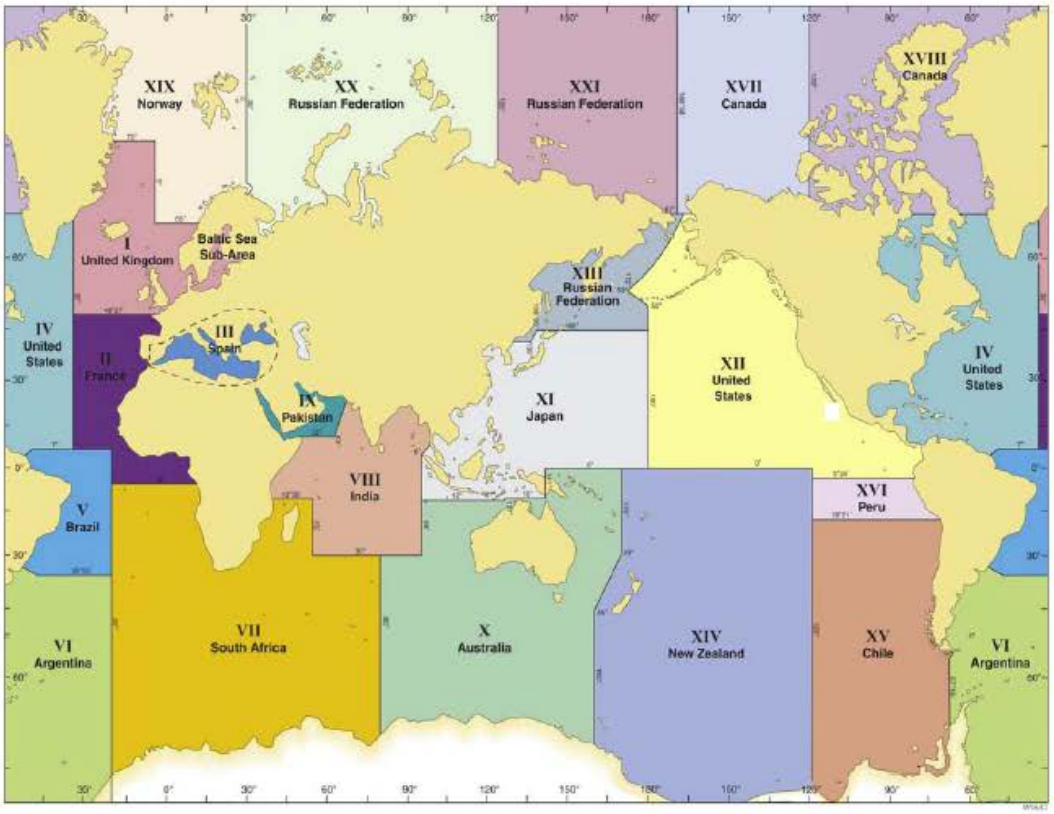
Fig 10.4.4 Display of receiving NAVTEX message

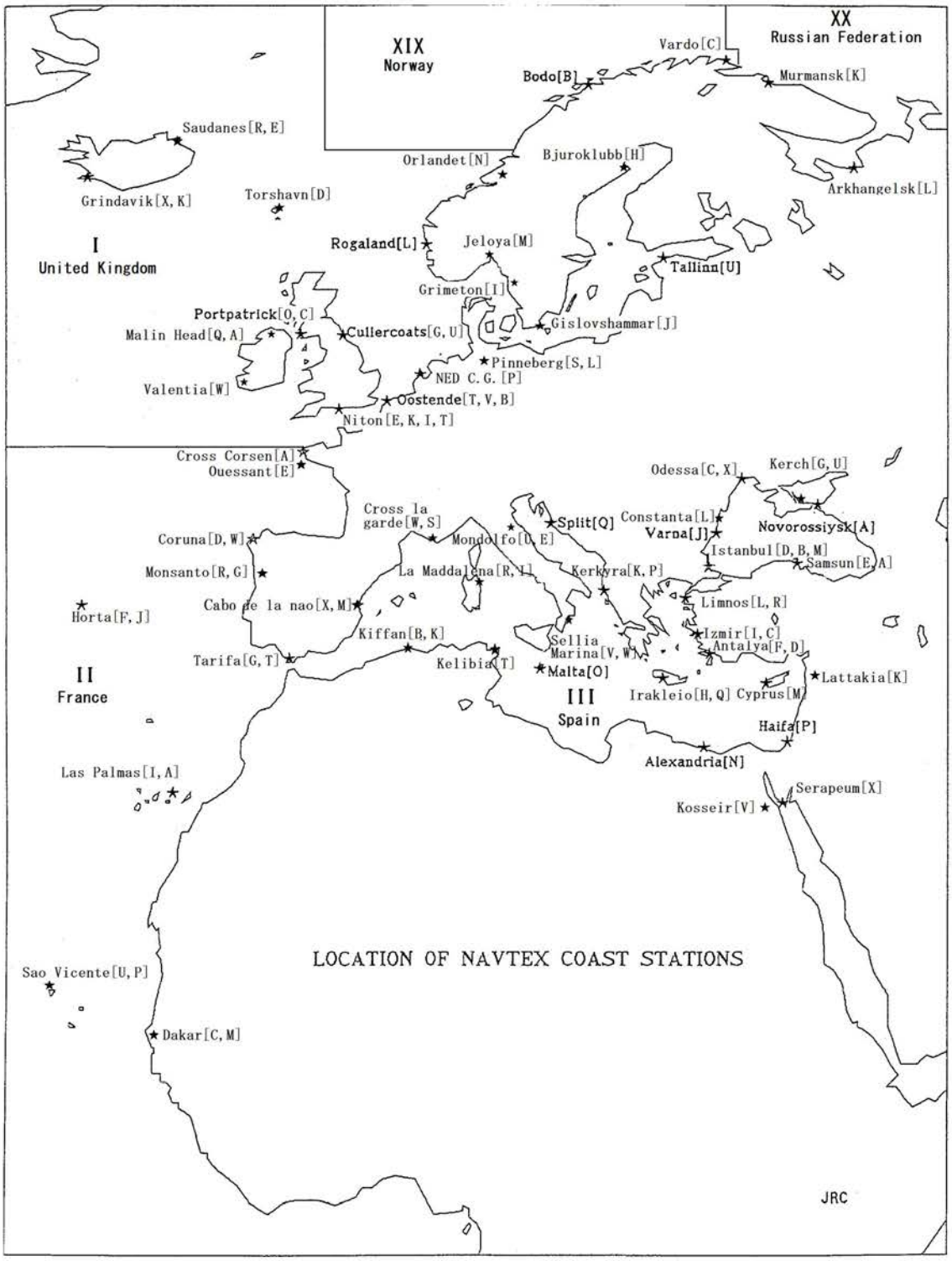
APPENDIX

LOCATION & TIME SCHEDULE FOR NAVTEX COAST STATIONS

Note: Based on status in 2012.

NAVAREA OF WORLD




XIX
Norway
XX
Russian Federation
Vardo[C]
Bodo[B]
Murmansk[K]
Saudanes[R, E]
Orlandet[N]
Bjuroklubb[H]
Arkhangelsk[L]
Grindavik[X, K]
Torshavn[D]
I
United Kingdom
Rogaland[L]
Jeloya[M]
Tallinn[U]
Grimeton[I]
Portpatrick[O, C]
Malin Head[Q, A]
Cullercoats[G, U]
Gislovshammar[J]
Pinneberg[S, L]
NED C.G.[P]
Valentia[W]
Oostende[T, V, B]
Niton[E, K, I, T]
Cross Corsen[A]
Ouessant[E]
Odessa[C, X]
Kerch[G, U]
Cross la garde[W, S]
Split[Q]
Constanta[L]
Varna[J]
Novorossiysk[A]
Coruna[D, W]
Mondolfo[U, E]
Istanbul[D, B, M]
Monsanto[R, G]
La Maddalena[R, I]
Kerkyra[K, P]
Samsun[E, A]
Horta[F, J]
Cabo de la nao[X, M]
Limnos[L, R]
Kiffan[B, K]
Izmir[I, C]
Sellia Marina[V, W]
Antalya[F, D]
Tarifa[G, T]
Kelibia[T]
Malta[O]
Lattakia[K]
II
France
III
Spain
Irakleio[H, Q]
Cyprus[M]
Haifa[P]
Alexandria[N]
Las Palmas[I, A]
Serapeum[X]
Kosseir[V]
LOCATION OF NAVTEX COAST STATIONS
Sao Vicente[U, P]
Dakar[C, M]
JRC

NAVAREA Ⅰ

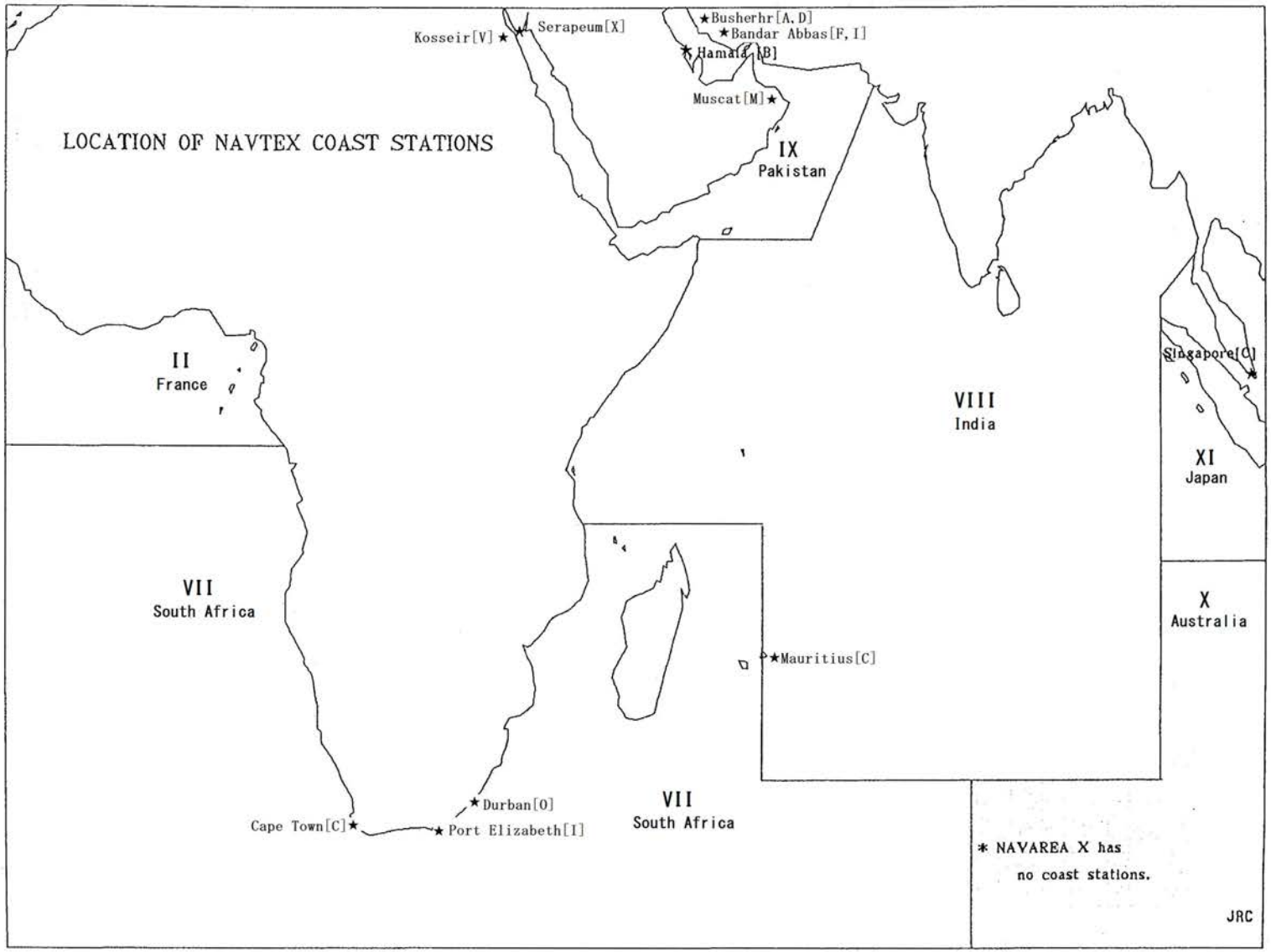
Country	Coast station	Position	Range (nm)	Freq (kHz)	ID	Tx time (UTC)
Belgium	Oostende Radio	51 11N 02 48E	55	518	I	0310,0710,1110,1510,1910,2310
				490	B	0010,0410,0810,1210,1610,2010
Belgium	Oostende	51 11N 02 48E	150	518	V	0330,0730,1130,1530,1930,2330
Estonia	Tallinn	59 27N 24 21E	250	518	U	0320,0720,1120,1520,1920,2320
France	Cross Corsen	48 28N 05 03W	300	518	A	0000,0400,0800,1200,1600,2000
Germany	Pinneberg	53 40N 09 48E	250	518	S	0300,0700,1100,1500,1900,2300
				490	L	0150,0550,0950,1350,1750,2150
Iceland	Saudanes	66 11N 18 57W	450	518	R	0250,0650,1050,1450,1850,2250
				490	E	0040,0440,0840,1240,1640,2040
Iceland	Grindavik	63 49N 22 27W	450	518	X	0350,0750,1150,1550,1950,2350
				490	K	0140,0540,0940,1340,1740,2140
Ireland	Valentia	51 56N 10 21W	400	518	W	0340,0740,1140,1540,1940,2340
Ireland	Malin Head	55 21N 07 20W	400	518	Q	0240,0640,1040,1440,1840,2240
				490	A	0000,0400,0800,1200,1600,2000
Netherlands	Ned C.G.	52 05N 04 15E	110	518	P	0230,0630,1030,1430,1830,2230
Norway	Rogaland Radio	58 38N 05 36E	450	518	L	0150,0550,0950,1350,1750,2150
Norway	Jeloya	59 26N 10 35E	200	518	M	0200,0600,1000,1400,1800,2200
Norway	Orlandet	63 39N 09 32E	450	518	N	0210,0610,1010,1410,1810,2210
Sweden	Bjuroklubb	64 27N 21 35E	300	518	H	0110,0510,0910,1310,1710,2110
Sweden	Gislovshammar	55 29N 14 18E	300	518	J	0130,0530,0930,1330, 1730,2130
Sweden	Grimeton	57 06N 12 23E	300	518	I	0120,0520,0920,1320,1720,2120
UK	Cullercoats	55 04N 01 27W	300	518	G	0100,0500,0900,1300,1700,2100
				490	U	0320,0720,1120,1520,1920,2320
UK	Portpatrick	54 50N 05 07W	300	518	O	0220,0620,1020,1420,1820,2220
				490	C	0020,0420,0820,1220,1620,2020
UK	Niton	50 35N 01 15W	300	518	E	0040,0440,0840,1240,1640,2040
				490	I	0120,0520,0920,1320,1720,2120
UK	Niton	50 35N 01 15W	300	518	K	0140,0540,0940,1340,1740,2140
				490	T	0310,0710,1110,1510,1910,2310
Faroes (Denmark)	Torshavn Radio	62 00N 06 48W	300	518	D	0030,0430,0830,1230,1630,2030

NAVAREA Ⅱ

France	Cross Corsen	48 28N 05 03W	300	518	A	0000,0400,0800,1200,1600,2000
France	Ouessant	48 28N 05 03W	300	490	E	0040,0440,0840,1240,1640,2040
Cape Verde	Sao Vicente	16 51N 25 00W	250	518	U	0320,0720,1120,1520,1920,2320
				490	P	0230,0630,1030,1430,1830,2230
Portugal	Horta	38 31N 28 37W	640	518	F	0050,0450,0850,1250,1650,2050
				490	J	0130,0530,0930,1330,1730,2130
Portugal	Monsanto	38 43N 09 11W	530	518	R	0250,0650,1050,1450,1850,2250
				490	G	0100,0500,0900,1300,1700,2100
Senegal	Dakar	14 46N 17 20W	200	518	C	0020,0420,0820,1220,1620,2020
				490	M	0200,0600,1000,1400,1800,2200
Spain	Coruna	43 22N 08 27W	400	518	D	0030,0430,0830,1230,1630,2030
				490	W	0340,0740,1140,1540,1940,2340
Spain	Tarifa	36 02N 05 33W	400	518	G	0100,0500,0900,1300,1700,2100
				490	T	0310,0710,1110,1510,1910,2310
Spain	Las Palmas	28 25N 16 20W	400	518	I	0120,0520,0920,1320,1720,2120
				490	A	0000,0400,0800,1200,1600,2000

NAVAREA III

Algeria	Kiffan	36 46N 03 15E	200	518	B	0010,0410,0810,1210,1610,2010
				490	K	0140,0540,0940,1340,1740,2140
Azerbaijan	Baku	40 19N 50 36E	200	518	R	0250,0650,1050,1450,1850,2250
				490	M	0200,0600,1000,1400,1800,2200
Bulgaria	Varna Radio	43 04N 27 47E	350	518	J	0130,0530,0930,1330,1730,2130
Croatia	Split	43 10N 16 25E	200	518	Q	0240,0640,1040,1440,1840,2240
Cyprus	Cyprus Radio	35 03N 33 17E	200	518	M	0200,0600,1000,1400,1800,2200
Egypt	Alexandria	31 12N 29 52E	350	518	N	0210,0610,1010,1410,1810,2210
France	CROSS La Garde	43 06N 05 59E	250	518	W	0340,0740,1340,1540,1940,2340
				490	S	0300,0700,1100,1500,1900,2300
Greece	Irakleio	35 20N 25 07E	400	518	H	0110,0510,0910,1310,1710,2110
				490	Q	0240,0640,1040,1440,1840,2240
Greece	Kerkyra	39 37N 19 55E	400	518	K	0140,0540,0940,1340,1740,2140
				490	P	0230,0630,1030,1430,1830,2230
Greece	Limnos	39 52N 25 04E	400	518	L	0150,0550,0950,1350,1750,2150
				490	R	0250,0650,1050,1450,1850,2250
Iran	Fereydoonkenar	36 42N 52 33E	250	518	G	0100,0500,0900,1300,1700,2100
				490	J	0130,0530,0930,1330,1730,2130
Italy	La Maddalena	41 13N 09 23E	320	518	R	0250,0650,1050,1450,1850,2250
				490	I	0120,0520,0920,1320,1720,2120
Italy	Mondolfo	43 44N 13 08E	320	518	U	0320,0720,1120,1520,1920,2320
				490	E	0040,0440,0840,1240,1640,2040
Italy	Sellia Marina	38 52N 16 43E	320	518	V	0330,0730,1130,1530,1930,2330
				490	W	0340,0740,1140,1540,1940,2340
Romania	Constanta Radio	44 06N 28 38E	400	490	L	0150,0550,0950,1350,1750,2150
Israel	RCC Haifa	32 54N 35 07E	200	518	P	0230,0630,1030,1430,1830,2230
Malta	Malta Radio	35 50N 14 29E	400	518	O	0220,0620,1020,1420,1820,2220
Russian Federation	Novorossiysk	44 36N 37 58E	300	518	A	0000,0400,0800,1200,1800,2000
Russian Federation	Astrakhan	45 47N 47 33E	250	518	W	0340,0740,1140,1540,1940,2340
Spain	Cabo de la Nao	38 43N 00 10E	400	518	X	0350,0750,1150,1550,1950,2350
				490	M	0200,0600,1000,1400,1800,2200
Tunisia	Kelibia	36 48N 11 02E	270	518	T	0310,0710,1110,1510,1910,2310
Syria	Lattakia Radio	35 32N 35 46E		490	K	0140,0540,0940,1340,1740,2140
Turkey	Istanbul	41 04N 28 57E	400	518	D	0030,0430,0830,1230,1630,2030
				490	B	0010,0410,0810,1210,1610,2010
				4209.5	M	0200,0600,1000,1400,1800,2200
Turkey	Samsun	41 23N 36 11E	400	518	E	0040,0440,0840,1240,1640,2040
				490	A	0000,0400,0800,1200,1600,2000
Turkey	Antalya	36 09N 32 26E	400	518	F	0050,0450,0850,1250,1650,2050
				490	D	0030,0430,0830,1230,1630,2030
Turkey	Izmir	38 16N 26 16E	400	518	I	0120,0520,0920,1320,1720,2120
				490	C	0020,0420,0820,1220,1620,2020
Ukraine	Odessa	46 22N 30 44E	250	518	C	0020,0420,0820,1220,1620,2020
				490	X	0350,0750,1150,1550,1950,2350
Ukraine	Kerch	45 23N 36 38E	250	518	G	0100,0500,0900,1300,1700,2100
				490	U	0320,0720,1120,1520,1920,2320


LOCATION OF NAVTEX COAST STATIONS
Kosseir[V]
Serapeum[X]
Busherhr[A,D]
Bandar Abbas[F,I]
Hamala[B]
Muscat[M]
IX
Pakistan
II
France
VII
South Africa
VIII
India
Singapore[C]
XI
Japan
X
Australia
Mauritius[C]
Durban[O]
Cape Town[C]
Port Elizabeth[I]
VII
South Africa
* NAVAREA X has
no coast stations.
JRC

NAVAREA VII

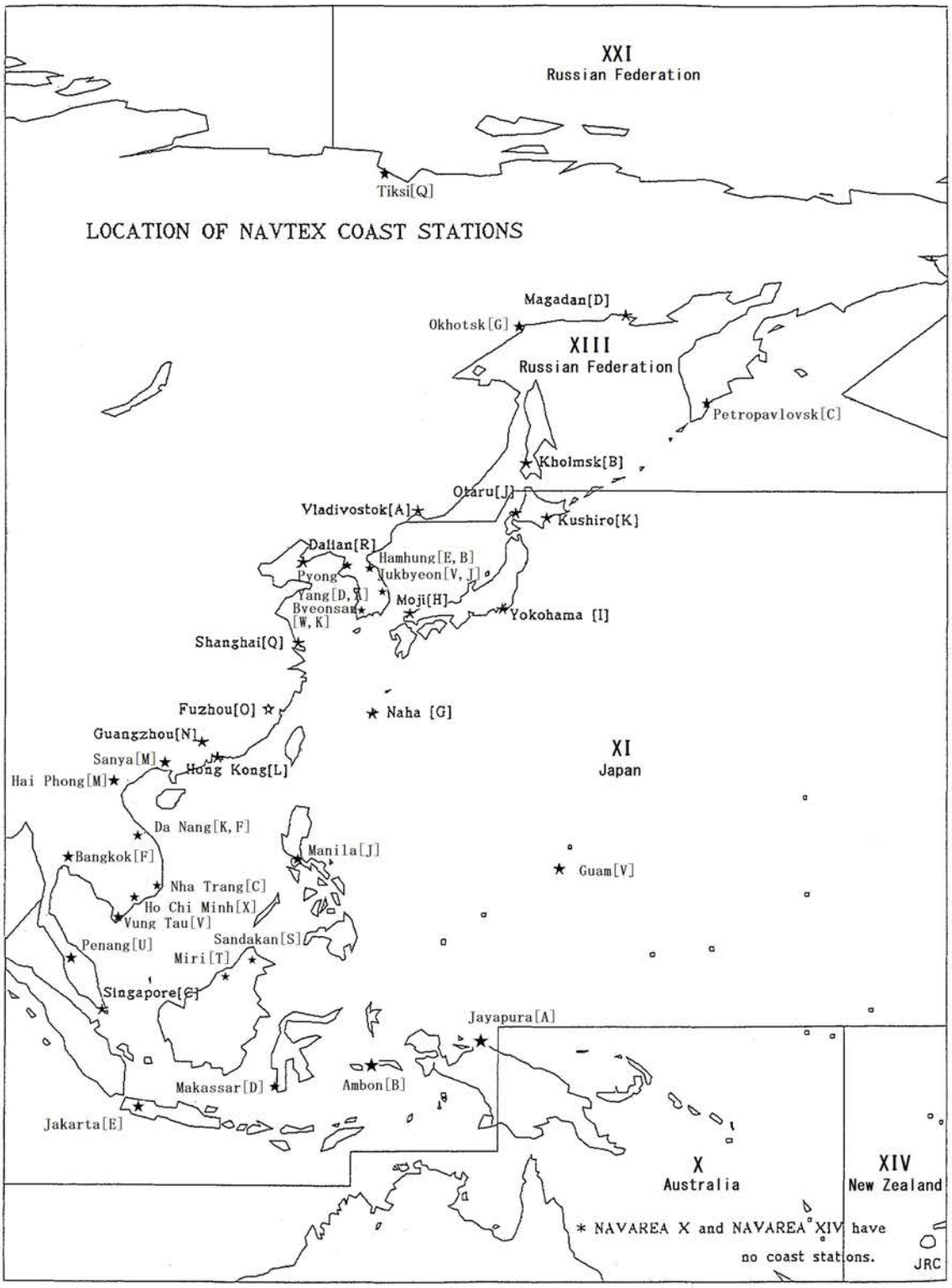
Country	Coast station	Position	Range (nm)	Freq (kHz)	ID	Tx time (UTC)
South Africa	Cape Town	33 40S 18 43E	300	518	C	0020,0420,0820,1220,1620,2020
South Africa	Port Elizabeth	34 02S 25 33E	300	518	I	0120,0520,0920,1320,1720,2120
South Africa	Durban	29 48S 30 48E	300	518	O	0220,0620,1020,1420,1820,2220

NAVAREA VIII

Mauritius	Mauritius	20 11S 57 26E	400	518	C	0020,0420,0820,1220,1620,2020

NAVAREA IX

Bahrain	Hamala	26 09N 50 28E	300	518	B	0010,0410,0810,1210,1610,2010
Egypt	Serapeum	30 28N 32 22E	400	518	X	0350,0750,1150,1550,1950,2350
				4209.5	X	0750,1150
Egypt	Kosseir	26 06N 34 17E	400	518	V	0330,0730,1130,1530,1930,2330
Iran	Busherhr	28 59N 50 49E	300	518	A	0000,0400,0800,1200,1600,2000
				490	D	0030,0430,0830,1230,1630,2030
Iran	Bandar Abbas	27 06N 56 03E	300	518	F	0050,0450,0850,1250,1650,2050
				490	I	0120,0520,0920,1320,1720,2120
Oman	Muscat	23 36N 58 30E	270	518	M	0200,0600,1000,1400,1800,2200

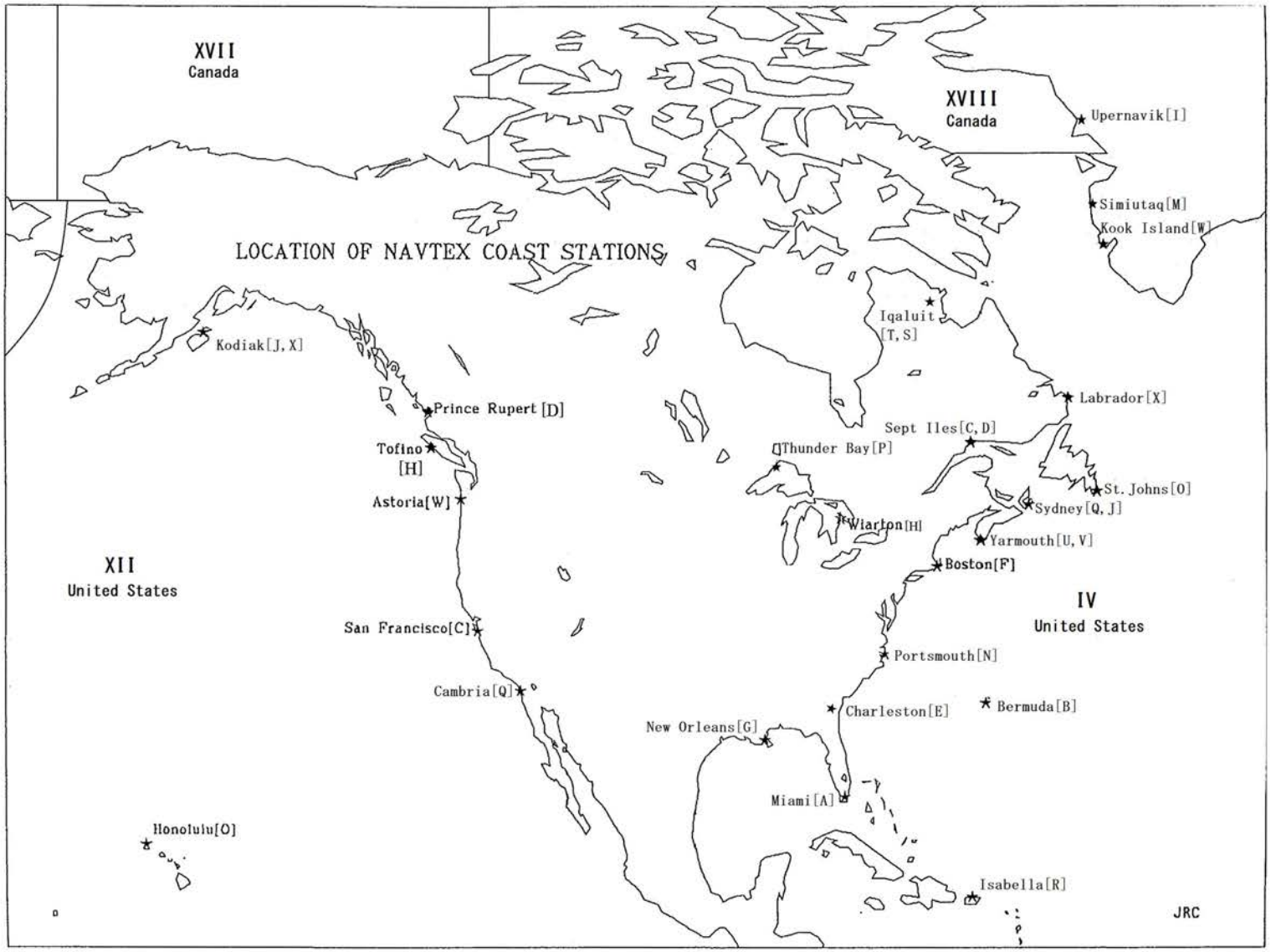

XXI
Russian Federation
Tiksi[Q]
LOCATION OF NAVTEX COAST STATIONS
Magadan[D]
Okhotsk[G]
XIII
Russian Federation
Petropavlovsk[C]
Kholmsk[B]
Otaru[J]
Vladivostok[A]
Kushiro[K]
Dalian[R]
Hamhung[E, B]
Pyong
Jukbyeon[V, J]
Tang[D, K]
Moji[H]
Byeonsan
[W, K]
Yokohama [I]
Shanghai[Q]
Fuzhou[O]
Naha [G]
Guangzhou[N]
Sanya[M]
Hong Kong[L]
Hai Phong[M]
XI
Japan
Da Nang[K, F]
Bangkok[F]
Manila[J]
Guam[V]
Nha Trang[C]
Ho Chi Minh[X]
Vung Tau[V]
Sandakan[S]
Penang[U]
Miri[T]
Singapore[C]
Jayapura[A]
Makassar[D]
Ambon[B]
Jakarta[E]
X
Australia
XIV
New Zealand
* NAVAREA X and NAVAREA XIV have
no coast stations.
JRC

NAVAREA XI

Country	Coast station	Position	Range (nm)	Freq (kHz)	ID	Tx time (UTC)
China	Sanya	18 14N 109 30E	250	518	M	0200,0600,1000,1400,1800,2200
China	Guangzhou	23 08N 113 32E	250	518	N	0210,0610,1010,1410,1810,2210
China	Fuzhou	26 01N 119 18E	250	518	O	0220,0620,1020,1420,1820,2220
China	Shanghai	31 08N 121 33E	250	518	Q	0240,0640,1040,1440,1840,2240
China	Dalian	38 52N 121 31E	250	518	R	0250,0650,1050,1450,1850,2250
Democratic People's Republic of Korea	Pyongyang	39 00N 125 43E	200	518	D	0030,0430,0830,1230,1630,2030
				490	A	0000,0400,0800,1200,1600,2000
Democratic People's Republic of Korea	Hamhung	39 50N 127 41E	200	518	E	0040,0440,0840,1240,1640,2040
				490	B	0010,0410,0810,1210,1610,2010
Indonesia	Jayapura	02 31S 140 43E	300	518	A	0000,0400,0800,1200,1600,2000
Indonesia	Ambon	03 42S 128 12E	300	518	B	0010,0410,0810,1210,1610,2010
Indonesia	Makassar	05 06S 119 26E	300	518	D	0030,0430,0830,1230,1830,2030
Indonesia	Jakarta	06 06S 106 54E	300	518	E	0040,0440,0840,1240,1640,2040
Japan	Otaru	43 19N 140 27E	400	518	J	0130,0530,0930,1330,1730,2130
				424	J	0051,0451,0851,1251,1651,2051
Japan	Kushiro	42 57N 144 36E	400	518	K	0140,0540,0940,1340,1740,2140
				424	K	0108,0508,0908,1308,1708,2108
Japan	Yokohama	35 14N 139 55E	400	518	I	0120,0520,0920,1320,1720,2120
				424	I	0034,0434,0834,1234,1634,2034
Japan	Moji	34 01N 130 56E	400	518	H	0110,0510,0910,1310,1710,2110
				424	H	0017,0417,0817,1217,1617,2017
Japan	Naha	26 05N 127 40E	400	518	G	0100,0500,0900,1300,1700,2100
				424	G	0000,0400,0800,1200,1600,2000
Malaysia	Penang	05 26N 100 24E	350	518	U	0320,0720,1120,1520,1920,2320
Malaysia	Miri	04 28N 114 01E	350	518	T	0310,0710,1110,1510,1910,2310
Malaysia	Sandakan	05 54N 118 00E	350	518	S	0300,0700,1100,1500,1900,2300
Philippines	Manila	14 30N 121 04E	320	518	J	0130,0530,0930,1330,1730,2130
Korea	Jukbyeon	37 03N 129 26E	200	518	V	0330,0730,1130,1530,1930,2330
				490	J	0130,0530,0930,1330,1730,2130
Korea	Byeonsan	35 36N 126 29E	200	518	W	0340,0740,1140,1540,1940,2340
				490	K	0140,0540,0940,1340,1740,2140
Singapore	Singapore	01 21N 103 59E	400	518	C	0020,0420,0820,1220,1620,2020
Thailand	Bangkok Radio	13 34N 100 39E	200	518	F	0050,0450,0850,1250,1650,2050
USA	Guam	13 29N 144 50E	250	518	V	0330,0730,1130,1530,1930,2330
Vietnam	Ho Chi Minh	10 23N 107 08E	400	518	X	0350,0750,1150,1550,1950,2350
Vietnam	Vung Tau Radio	10 23N 107 08E	400	490	V	0330,0730,1130,1530,1930,2330
Vietnam	Nha Trang	12 13N 109 10E		4209.5	C	0020,0420,0820,1220,1620,2020
Vietnam	Da Nang	16 03N 108 12E	400	518	K	0140,0540,0940,1340,1740,2140
				490	F	0050,0450,0850,1250,1650,2050
Vietnam	Hai Phong	20 50N 106 41E	400	490	M	0200,0600,1000,1400,1800,2200
				4209.5	M	0200,0600,1000,1400,1800,2200
China	Hong Kong	22 12N 114 15E	400	518	L	0150,0550,0950,1350,1750,2150

NAVAREA XIII

Russia	Vladivostok	43 23N 131 54E	230	518	A	0000,0400,0800,1200,1600,2000
Russia	Kholmsk	47 02N 142 03E	300	518	B	0010,0410,0810,1210,1610,2010
Russia	Magadan	59 41N 150 09E	120	518	D	0030,0430,0830,1230,1630,2030
Russia	Petropavlovsk	53 00N 158 40E	300	518	C	0020,0420,0820,1220,1620,2020
Russia	Okhotsk	59 22N 143 12E	300	518	G	0100,0500,0900,1300,1700,2100

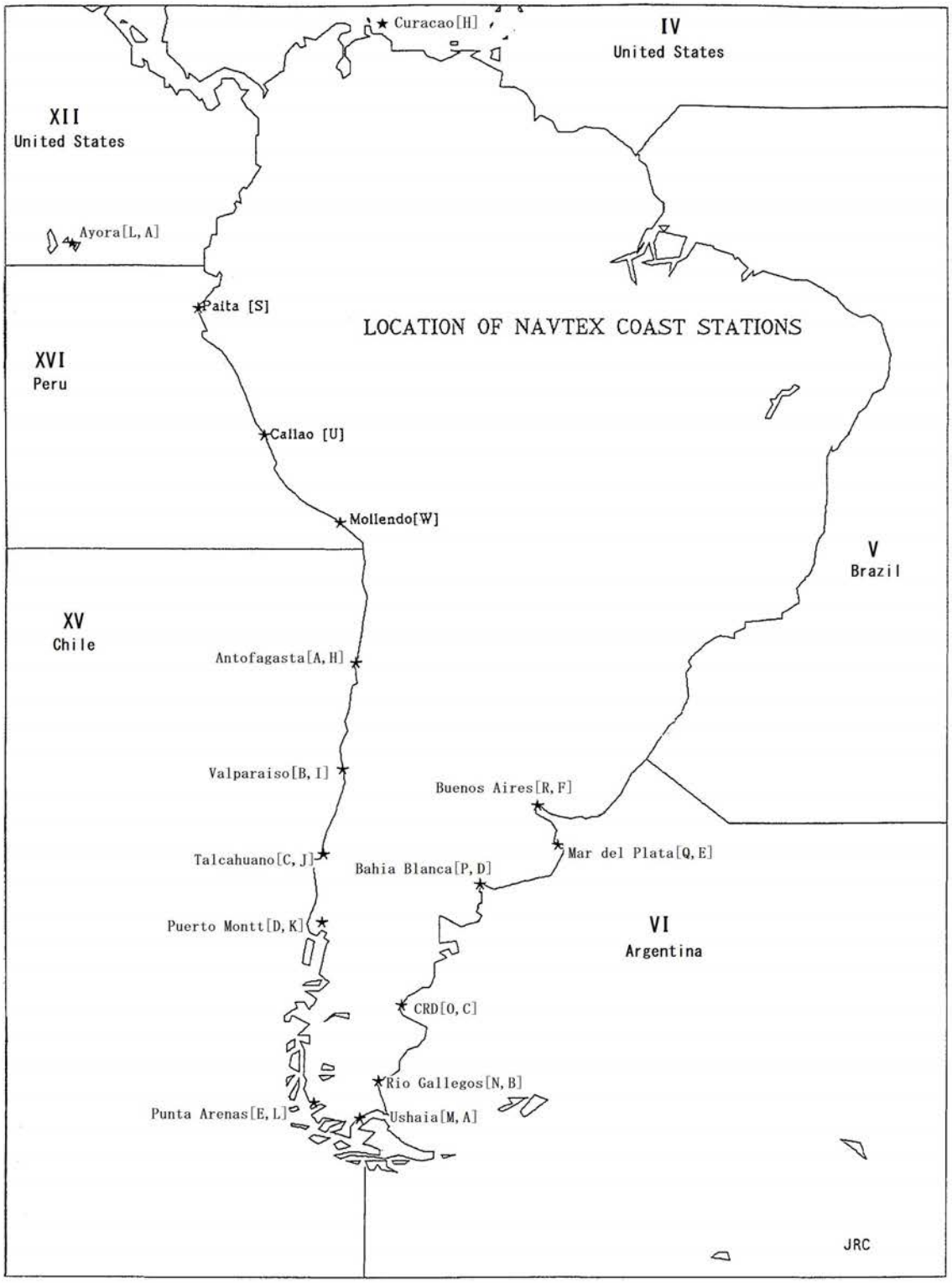

XVII
Canada
XVIII
Canada
LOCATION OF NAVTEX COAST STATIONS
Upernavik[I]
Simiutaq[M]
Kook Island[W]
Iqaluit
[T,S]
Kodiak[J,X]
Labrador[X]
Prince Rupert [D]
Sept Iles[C,D]
Tofino
[H]
Thunder Bay[P]
St. Johns[O]
Astoria[W]
Sydney[Q,J]
Wiarton[H]
Yarmouth[U,V]
XII
United States
Boston[F]
IV
United States
San Francisco[C]
Portsmouth[N]
Cambria[Q]
Charleston[E]
Bermuda[B]
New Orleans[G]
Miami[A]
Honolulu[O]
Isabella[R]
JRC

NAVAREA Ⅳ

Country	Coast station	Position	Range (nm)	Freq (kHz)	ID	Tx time (UTC)
UK	Bermuda	32 21N 64 39W	280	518	B	0010,0410,0810,1210,1610,2010
Canada	Sept-Iles	50 11N 66 06W	300	518	C	0020,0420,0820,1220,1620,2020
				490	D	0030,0430,0830,1230,1630,2030
Canada	Wiarton	44 56N 81 14W	300	518	H	0110,0510,0910,1310,1710,2110
Canada	St. John's	47 36N 52 40W	300	518	O	0220,0620,1020,1420,1820,2220
Canada	Thunder Bay	48 33N 88 39W	300	518	P	0230,0630,1030,1430,1830,2230
Canada	Sydney	46 11N 59 53W	300	518	Q	0240,0640,1040,1440,1840,2240
				490	J	0130,0530,0930,1330,1730,2130
Canada	Yarmouth	43 44N 66 07W	300	518	U	0320,0720,1120,1520,1920,2320
				490	V	0330,0730,1130,1530,1930,2330
Canada	Labrador	53 42N 57 01W	300	518	X	0350,0750,1150,1550,1950,2350
Canada	Iqaluit	63 43N 68 32W	300	518	T	0310,0710,1110,1510,1910,2310
				490	S	0300,0700,1100,1500,1900,2300
Netherlands	Curacao	12 10N 68 51W	400	518	H	0110,0510,0910,1310,1710,2110
Greenland (Denmark)	Kook Island	64 04N 52 01W	300	518	W	0340,0740,1140,1540,1940,2340
Greenland (Denmark)	Simiutaq	60 41N 46 35W	300	518	M	0200,0600,1000,1400,1800,2200
USA	Miami	25 37N 80 23W	240	518	A	0000,0400,0800,1200,1600,2000
USA	Boston	41 43N 70 30W	200	518	F	0050,0450,0850,1250,1650,2050
USA	New Orleans	29 53N 89 57W	200	518	G	0100,0500,0900,1300,1700,2100
USA	Portsmouth	36 43N 76 00W	280	518	N	0210,0610,1010,1410,1810,2210
USA	Charleston	32 08N 81 42W	200	518	E	0040,0440,0840,1240,1640,2040
USA	Isabella	18 28N 67 04W	200	518	R	0250,0650,1050,1450,1850,2250

NAVAREA Ⅹ Ⅱ

Canada	Prince Rupert	54 18N 130 24W	300	518	D	0030,0430,0830,1230,1630,2030
Canada	Tofino	48 55N 125 32W	300	518	H	0110,0510,0910,1310,1710,2110
Ecuador	Ayora Radio	00 43S 90 19W	400	518	L	0150,0550,0950,1350,1750,2150
				490	A	0000,0400,0800,1200,1600,2000
USA	San Francisco	37 55N 122 44W	350	518	C	0020,0420,0820,1220,1620,2020
USA	Kodiak	57 46N 152 34W	200	518	J	0130,0530,0930,1330,1730,2130
USA	Kodiak	57 46N 152 34W	200	518	X	0350,0750,1150,1550,1950,2350
USA	Honolulu	21 22N 158 09W	350	518	O	0220,0620,1020,1420,1820,2220
USA	Cambria	35 31N 121 03W	350	518	Q	0240,0640,1040,1440,1840,2240
USA	Astoria	46 10N 123 49W	216	518	W	0340,0740,1140,1540,1940,2340


LOCATION OF NAVTEX COAST STATIONS
Curacao[H]
IV
United States
XII
United States
Ayora[L, A]
Paita [S]
XVI
Peru
Callao [U]
Mollendo[W]
V
Brazil
XV
Chile
Antofagasta[A, H]
Valparaiso[B, I]
Buenos Aires[R, F]
Mar del Plata[Q, E]
Talcahuano[C, J]
Bahia Blanca[P, D]
Puerto Montt[D, K]
VI
Argentina
CRD[O, C]
Rio Gallegos[N, B]
Punta Arenas[E, L]
Ushaia[M, A]
JRC

NAVAREA VI

Country	Coast station	Position	Range (nm)	Freq (kHz)	ID	Tx time (UTC)
Argentina	Ushuaia	54 48S 68 18W	280	518	M	0200,0600,1000,1400,1800,2200
				490	A	0000,0400,0800,1200,1600,2000
Argentina	Rio Gallegos	51 37S 69 13W	280	518	N	0210,0610,1010,1410,1810,2210
				490	B	0010,0410,0810,1210,1610,2010
Argentina	CRD	45 50S 67 28W	280	518	O	0220,0620,1020,1420,1820,2220
				490	C	0020,0420,0820,1220,1620,2020
Argentina	Bahia Blanca	38 52S 62 06W	280	518	P	0230,0630,1030,1430,1830,2230
				490	D	0030,0430,0830,1230,1630,2030
Argentina	Mar del Plata	38 03S 57 32W	280	518	Q	0240,0640,1040,1440,1840,2240
				490	E	0040,0440,0840,1240,1640,2040
Argentina	Buenos Aires	35 23S 57 10W	280	518	R	0250,0650,1050,1450,1850,2250
				490	F	0050,0450,0850,1250,1650,2050

NAVAREA XV

Chile	Antofagasta	23 40S 070 25W	300	518	A	0400,1200,2000
				518	H	0000,0800,1600
Chile	Valparaiso	32 48S 071 29W	300	518	B	0410,1210,2010
				518	I	0010,0810,1610
Chile	Talcahuano	36 42S 073 06W	300	518	C	0420,1220,2020
				518	J	0020,0820,1620
Chile	Puerto Montt	41 30S 072 58W	300	518	D	0430,1230,2030
				518	K	0030,0830,1630
Chile	Punta Arenas	53 09S 070 58W	300	518	E	0440,1240,2040
				518	L	0040,0840,1640
Chile	Isla de Pascua	27 09S 109 25W	300	518	F	0450,1250,2050
				518	G	0050,0850,1650

NAVAREA XVI

Peru	Paita	05 06S 81 07W	250	518	S	0300,0700,1100,1500,1900,2300
Peru	Callao	12 04S 77 09W	250	518	U	0320,0720,1120,1520,1920,2320
Peru	Mollendo	17 00S 72 02W	250	518	W	0340,0740,1140,1540,1940,2340

NAVAREA XVII

Country	Coast station	Position	Range (nm)	Freq (kHz)	ID	Tx time (UTC)
Greenland	Upernavik	72 47N 56 09W	300	518	I	0120,0520,0920,1320,1720,2120

NAVAREA XIX

Norway	Svalbard	78 03N 13 36E	450	518	A	0000,0400,0800,1200,1600,2000
Norway	Bodo	67 16N 14 23E	450	518	B	0010,0410,0810,1210,1610,2010
Norway	Vardo	70 22N 31 06E	450	518	C	0330,0730,1130,1530,1930,2330

NAVAREA XX

Russia	Murmansk	68 46N 32 58E	300	518	K	0140,0540,0940,1340,1740,2140
Russia	Arkhangelsk	64 51N 40 17E	300	518	L	0150,0550,0950,1350,1750,2150

NAVAREA XXI

Russia	Tiksi	71 38N 128 50E	300	518	Q	0240,0640,1040,1440,1840,2240

JRC Japan Radio Co., Ltd.

电子信息产品有害物资申明
日本无线株式会社

Declaration on toxic & hazardous substances or elements
of Electronic Information Products
Japan Radio Company Limited

有毒有害物质或元素的名称及含量
(Names & Content of toxic and hazardous substances or elements)

形式名(Type): NCR-333　　名称(Name): NAVTEX receiver

部件名称 (Part name)	有毒有害物质或元素 (Toxic and Hazardous Substances and Elements)					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr^{6+})	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
天线 (Antenna)	×	○	×	×	×	×
船内装置 (Inboard Unit)	×	○	×	×	×	×
外部设备(Peripherals) ·选择(Options) ·打印机(Printer) ·电线类(Cables) ·手册(Documennts)	×	○	×	×	×	×

○:表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T11306-2006 标准规定的限量要求以下。
(Indicates that this toxic, or hazardous substance contained in all of the homogeneous materials for this part is below the requirement in SJ/T11363-2006.)

×:表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T11363-2006 标准规定的限量要求。
(Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in SJ/T 11363-2006.)

RE: 中华人民共和国电子信息产品污染控制管理办法
Management Methods on Control of Pollution from Electronics Information Products of the People's Republic of China

アスベストは使用しておりません
Not use the asbestos

For further information,contact:

JRC Japan Radio Co., Ltd.
Since 1915

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One-call : +81-50-3786-9201

ISO 9001, ISO 14001 Certified

CODE No.7ZPJD0304E MAR. 2020 Edition 1