JMR-7230-S3/S
JMR-7225-7X3/9X3/6X/9X/6XH
JMR-7210-6X/6XH
JMR-7272-S
JMR-7282-S/SH
JMR-9230-S3/S
JMR-9225-7X3/9X3/6X/9X/6XH
JMR-9210-6X/6XH
JMR-9272-S
JMR-9282-S/SH

Marine Radar Equipment
Quick Operation Guide

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JRC Japan Radio Co., Ltd.

1 Introduction

1.1 Read Before Use

About the Quick Operation Guide

For more details, please read the Operation Manual.

Please keep this Quick Operation Guide in an easily accessible place.

About the Radar

Use the radar solely as a navigation aid. Also, the final decision of maneuvering must be made by the person who maneuvers the ship. If the final decision on maneuvering is solely made based on the information displayed by the radar, it may cause accidents such as collision and running aground.

About sea clutter suppression

Do not adjust the sea clutter suppression function until all sea clutters are erased in the close distance range.

Otherwise, targets such as vessels and dangerous objects will be suppressed in addition to echoes from waves, causing to interfere detection.

When using the sea clutter suppression function, always perform optimum suppression adjustment.

About rain/snow clutter suppression

Do not adjust the rain/snow suppression function excessively. Otherwise, targets such as vessels and dangerous objects will be suppressed in addition to echoes from rain and snow, causing to interfere detection.

When using the rain/snow clutter suppression function, always perform optimum suppression adjustment.

About the target tracking function

Use the target tracking function solely as a navigation aid. Also, the final decision of maneuvering must be made by the person who maneuvers the ship. If the final decision on maneuvering is solely made based on the information acquired from the target tracking function, it may cause accidents.

Vectors, target numeric data, alarms and other information displayed by the target tracking function may contain errors. Note that targets which cannot be detected by the radar can neither be acquired nor tracked.

If the final decision on maneuvering is solely made based on the information displayed by the radar, it may cause accidents such as collision and running aground.

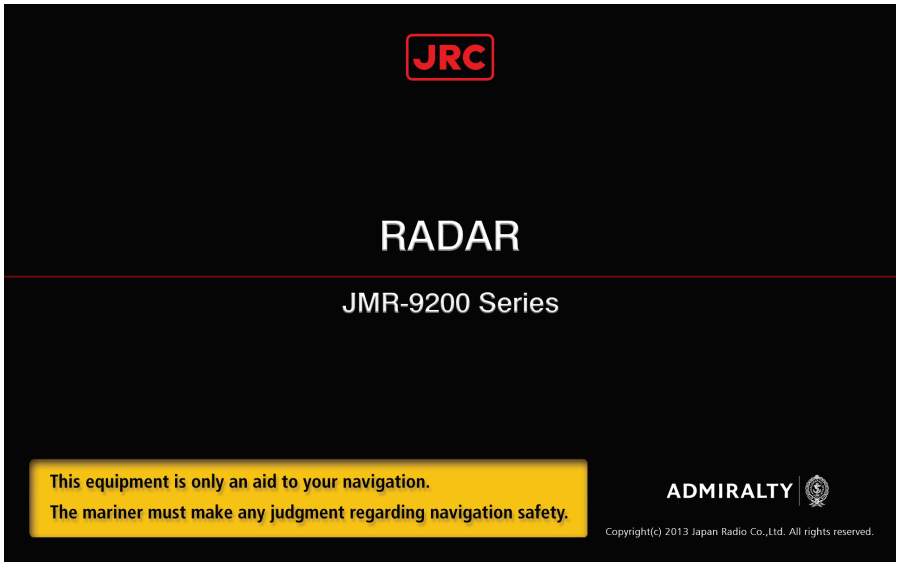
2 Basic Operations

2.1 Powering On and Starting

1 **Make sure that the ship's power is on.**

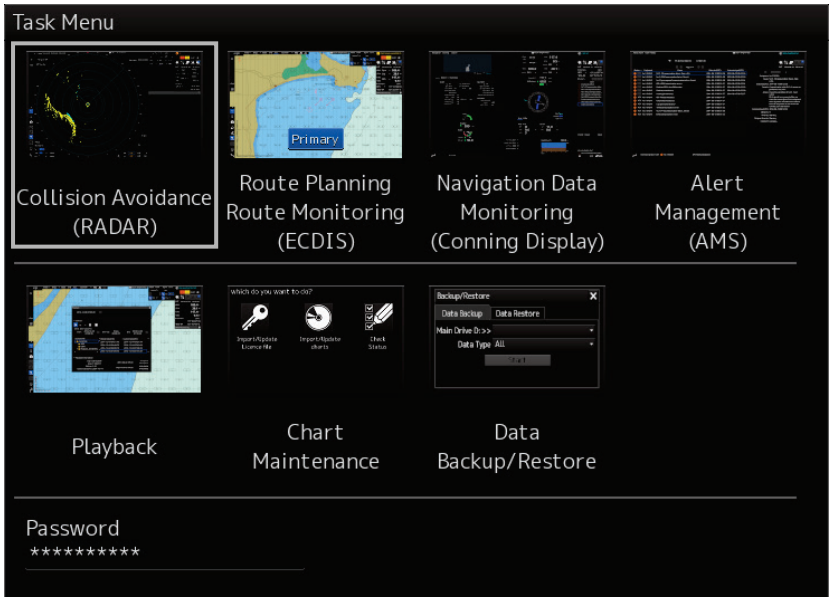
2 **Press the Power button on the operation unit.**

The Power button illuminates and the Start screen appears.



After the Start screen appears, the Task menu appears next after a while.

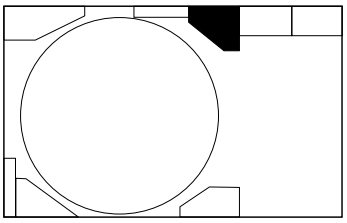
3 **Click the "Collision Avoidance (RADAR)" button on the Main menu.**



The RADAR screen appears.

When a magnetron radar antenna is connected, the preheat time is displayed in the center of the screen.

The standby/transmission changeover button of the radar system information is switched to "Preheat".



Standby/transmission changeover button

Standby/transmission changeover button

When a magnetron radar antenna is connected

Standby/transmission changeover button

When a fixed radar antenna is connected

4 **Wait until preheating completes.**

When the preheat time expires, the Preheat Time screen disappears and the standby/transmission changeover button of the radar system information is switched from "Preheat" to "Standby".

5 **Click the standby/transmission changeover button.**

Radar transmission starts and the radar antenna rotates.

The display of the standby/transmission changeover button is switched from "Standby" to "Transmit".

2.2 Finishing and Stopping Operation

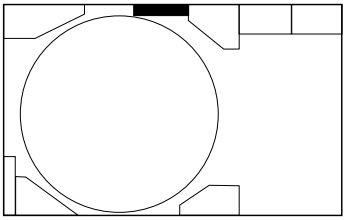
1 **Click the standby/transmission changeover button of the radar signal information.**
Radar transmission stops and the rotation of the radar antenna stops.
The display of the standby/transmission changeover button is switched from "Transmit" to "Standby".

2 **Press the Power button on the operation unit.**
The power to this equipment stays off.

2.3 Adjusting Screen Brightness

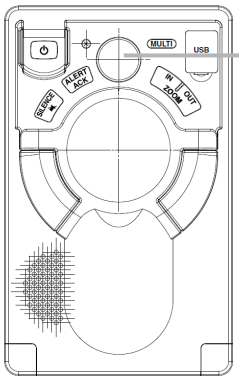
Adjust the screen to an easy to view state by operating the "MULTI" dial.

2.3.1 When "DISP Brightness" is being displayed in the Key Assignment Indication Area (key allocation display area)



Key Assignment Indication Area
(key allocation display area)

1 **Adjust the screen brightness by rotating the "MULTI" dial to the right or left.**



"MULTI" dial

The entire screen becomes brighter when the dial is rotated to the right.
The entire screen becomes darker when the dial is rotated to the left.

2.3.2 When "DISP Brightness" is not being displayed in the Key Assignment Indication Area (key allocation display area)

1 **Press the “MULTI” dial for a long time.**

The Display Brightness function will be assigned to the “MULTI” dial.

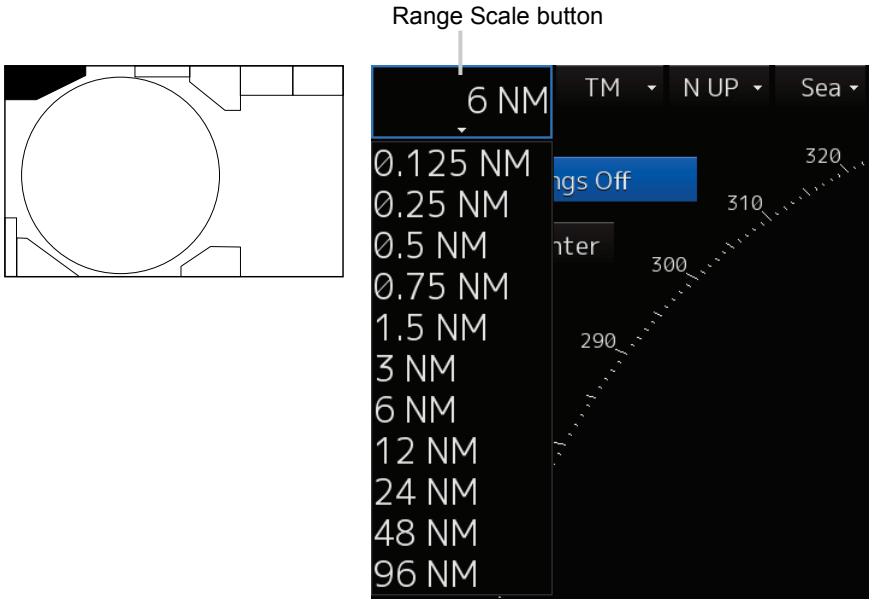
2 **Adjust the screen brightness by turning the “MULTI” dial to the left or right.**

The entire screen becomes brighter when the dial is rotated to the right.

The entire screen becomes darker when the dial is rotated to the left.

2.4 Changing the Observation Range

1 Click the Range Scale button of the presentation and mode information, and then select a range from the pop-up menu that appears.



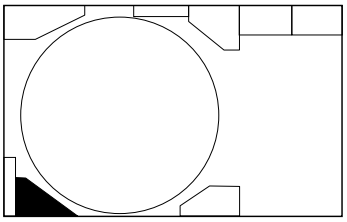
A wider range can be observed by widening the observation range.

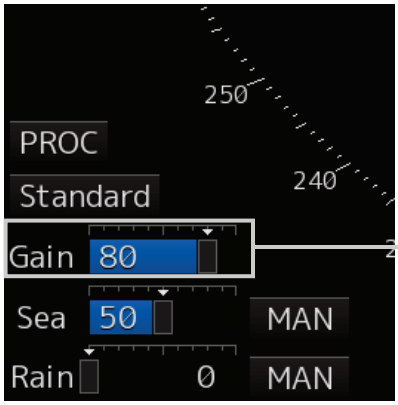
When the observation range is narrowed down, the area near own ship can be observed by enlarging it.

2.5 Adjusting Gain

1 Continue clicking the slider of the "Gain" slider control of the radar signal information, and specify the gain by rotating the trackball.

If there is the optional keyboard operation unit, the operation of the "GAIN" dial is also possible.





Moving the slider to the right increases the gain.
Moving the slider to the left decreases the gain.

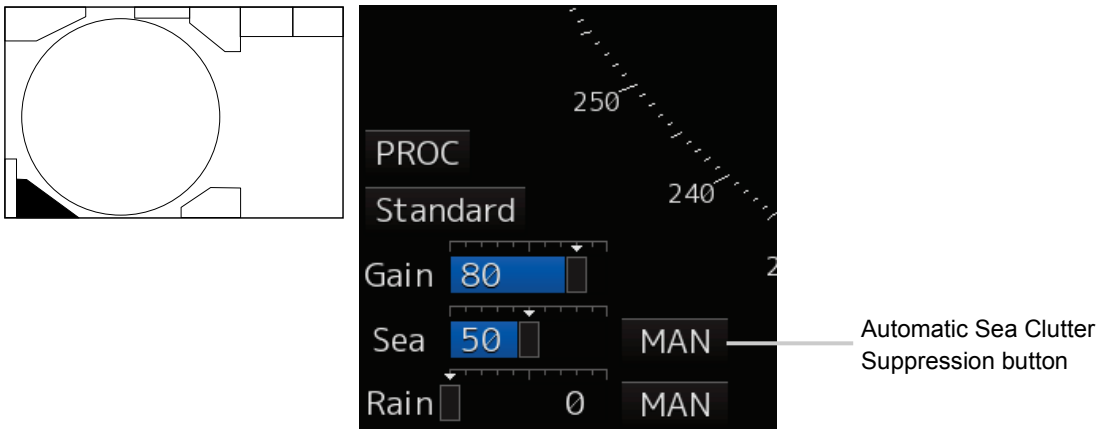
When the gain is increased, the distance where radar images can be observed is widened.

2.6 Removing Sea Clutters

2.6.1 When Using the Manual Sea Clutter Suppression Function

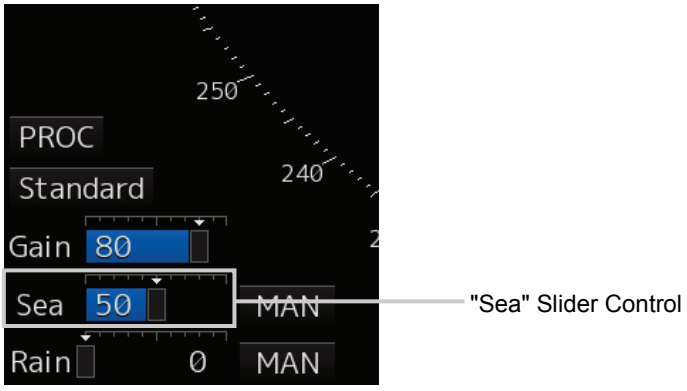
1 Click the Automatic Sea Clutter Suppression button.

The display of the Automatic Sea Clutter Suppression button changes to "MAN" (Manual).



2 Continue clicking the slider of the "Sea" slider control of the radar signal information, and adjust the amount of images displayed from reflections of sea clutters on the screen by rotating the trackball to facilitate observation.

If there is the optional keyboard operation unit, the operation of the "SEA" dial is also possible.



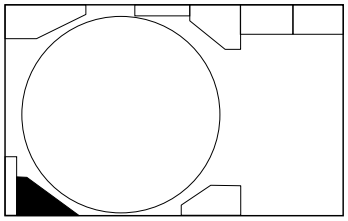
Moving the slider to the right decreases the amount of images reflected from sea clutters.
Moving the slider to the left increases the amount of images reflected from sea clutters.

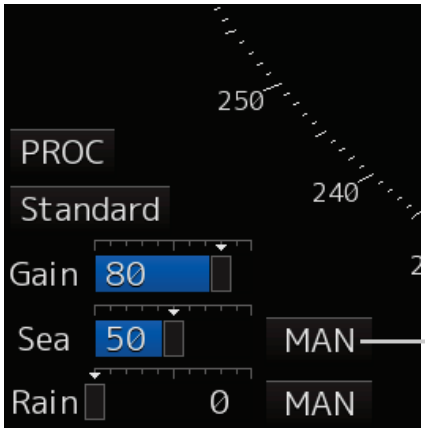
The sea clutter suppression function decreases the amount of images reflected from sea clutters by lowering the gain in short distances.

2.6.2 When Using the Automatic Sea Clutter Suppression Function

1 Click the Automatic Sea Clutter Suppression button.

The display of the Automatic Sea Clutter Suppression button changes to "AUTO" (Automatic).





Automatic Sea Clutter Suppression button

2 Click the slider of the "Sea" slider control, and adjust the amount of images displayed from reflections of sea clutters on the screen by rotating the trackball.

If there is the optional keyboard operation unit, the operation of the "SEA" dial is also possible.

Even during automatic sea clutter suppression, fine adjustment of the amount of images can be performed manually.

Canceling Automatic Sea Clutter Suppression

1 Click the Automatic Sea Clutter Suppression button.

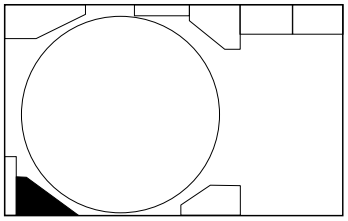
The display of the Automatic Sea Clutter Suppression button changes to "MAN" (Manual).

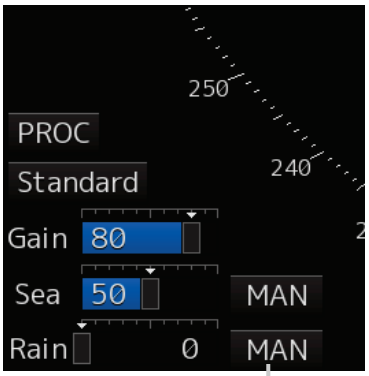
2.7 Removing Rain/Snow Clutters

2.7.1 When Using the Manual Rain/Snow Clutter Suppression Function

1 Click the Automatic Rain Clutter Suppression button.

The display of the Automatic Rain Clutter Suppression button changes to "MAN" (Manual).

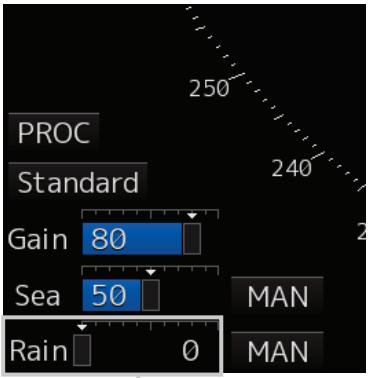




Automatic Rain Clutter Suppression button

2 Continue clicking the slider of the "Rain" slider control of the radar signal information, and adjust the amount of images displayed from reflections of rain/snow clutters on the screen by rotating the trackball to facilitate observation.

If there is the optional keyboard operation unit, the operation of the "RAIN" dial is also possible.



"Rain" Slider Control

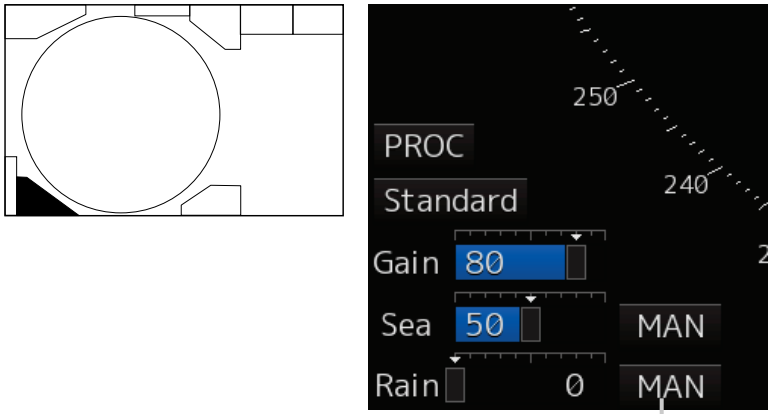
Moving the slider to the right decreases the amount of images reflected from rain/snow clutters.
Moving the slider to the left increases the amount of images reflected from rain/snow clutters.

The rain/snow clutter suppression function decreases the amount of images reflected from rain/snow clutters.
Since this function also has an effect to reduce reflections from sea clutters, it is effective to use it together with the sea clutter suppression function.

2.7.2 When Using the Automatic Rain/Snow Clutter Suppression Function

1 Click the Automatic Rain/Snow Clutter Suppression button.

The display of the Automatic Rain Clutter Suppression button changes to "AUTO" (Automatic).



Automatic Rain Clutter Suppression button

2 Click the slider of the "Rain" slider control, and adjust the amount of images displayed from reflections of rain/snow clutters on the screen by rotating the trackball.

Even during automatic rain/snow clutter suppression, fine adjustment of the amount of images can be performed manually.

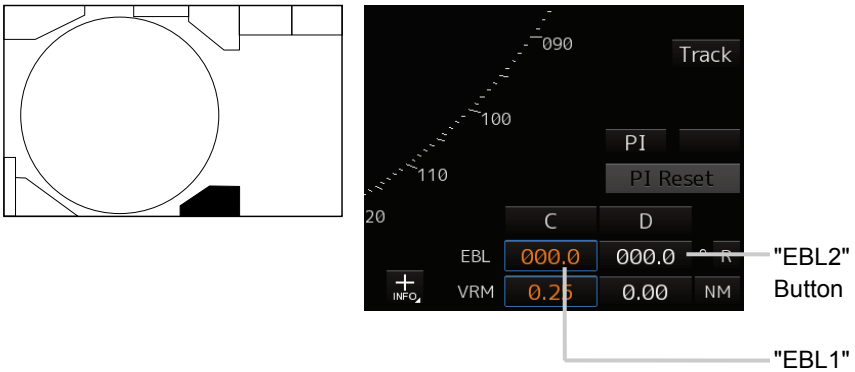
Canceling Automatic Rain/Snow Clutter Suppression

1 Click the Automatic Rain/Snow Clutter Suppression button.

The display of the Automatic Rain Clutter Suppression button changes to "MAN" (Manual).

2.8 Using the Electronic Cursor (EBL1/EBL2)

1 **Click either the "EBL1" or "EBL2" button of the Navigation Tools.**
Either EBL1 or EBL2 is placed in the operating mode and the display of the button changes from "OFF" to the azimuth position.



2 **Move the cursor to the azimuth you want to set up inside the PPI.**
The EBL moves according to the movement of the cursor and the button's azimuth position display also changes.

3 **Click.**
The EBL is fixed in position.

To move the measurement reference point of the EBL

1 **Click the EBL button you want to set up and activate the operating state.**
The display of the EBL button you clicked changes from "OFF" to the azimuth position display of the measurement reference point.

2 **Click one of the Measurement Reference Point buttons for the EBL in the operating state, and set the measurement reference point to either "C" or "D".**

3 **Click on a point where you want to set as the measurement reference point of the EBL.**
The measurement reference point of the EBL you selected is confirmed.

To return the measurement reference point of the EBL to Own Ship's Position

1 **Click the EBL button you want to set up and activate the operating state.**
The display of the EBL button you clicked changes from "OFF" to the azimuth position display of the measurement reference point.

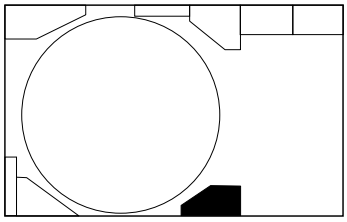
2 **Click one of the Measurement Reference Point buttons for the EBL in the operating state, and set the measurement reference point to "blank".**

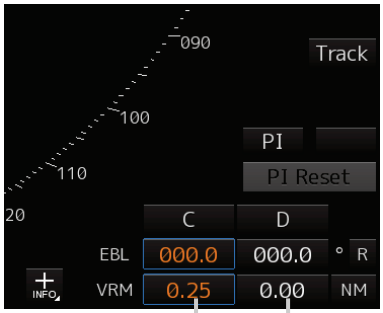
3 **Click on a point where you want to set as the measurement reference point of the EBL.**
The measurement reference point of the EBL you selected becomes own ship's position.

2.9 Using Variable Range Marker (VRM1/VRM2)

1 Click either the "VRM1" or "VRM2" button of the Navigation Tools.

Either VRM1 or VRM2 is placed in the operating mode and the display of the button you clicked changes from "OFF" to the distance position display.





"VRM1" "VRM2"

2 Move the cursor to the distance you want to set up inside the PPI.

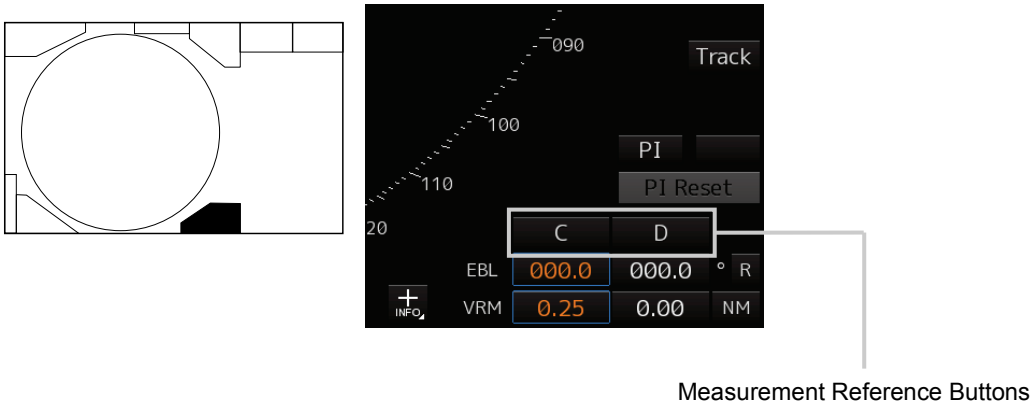
The VRM moves according to the movement of the cursor and the button's distance position display also changes.

3 Click.

The VRM is fixed in position.

2.10 Setting Up the Measurement Reference Point of the Electronic Bearing Line and Variable Range Marker

The measurement reference point of this equipment's electronic bearing line (EBL) and variable range marker (VRM) can be selected from the following three types. Set up a measurement reference point according to usage.



Measurement Reference Buttons

Blank (CCRP): Sets a measurement reference point at own ship's position (CCRP).
C (Carried): Fixes a measurement point on the screen.
D (Dropped): Fixes a measurement point with longitude and latitude.

2.10.1 Moving the measurement reference point of the EBL/VRM

1 **Click the EBL or VRM button you want to set up and activate the operating state.**

The display of the VRM button you clicked changes from "OFF" to the azimuth position display and range display of the measurement reference point.

2 **Click one of the Measurement Reference Point buttons for the EBL/VRM in the operating state, and set the measurement reference point to either "C" or "D".**

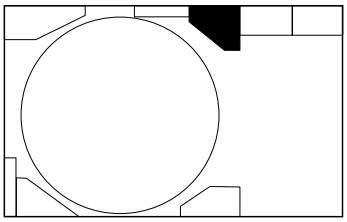
3 **Click on a point where you want to set as the measurement reference point of the EBL/VRM after moving the cursor inside the PPI.**
The measurement reference point of the EBL/VRM you selected is confirmed.

2.10.2 Returning the measurement reference point of the VRM to Own Ship's Position

1 **Click one of the Measurement Reference Point buttons for the EBLVRM in the operating state, and set the measurement reference point to "blank".**
The measurement reference point of the EBL/VRM you selected becomes own ship's position.

2.11 Switching the Transmission Pulse Length

1 Click the transmission pulse witch changeover button of the radar system information.



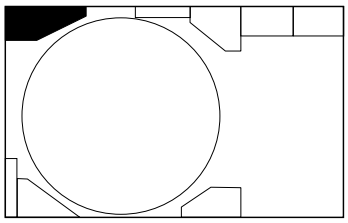
Transmission Pulse Width Changeover Button

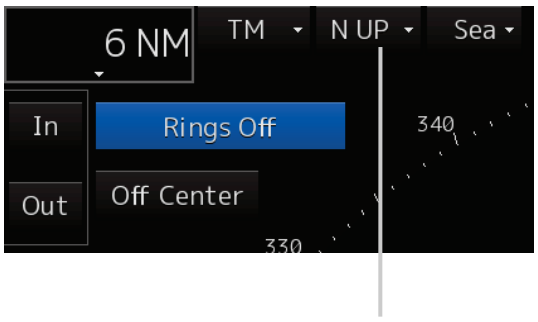
Each time the button is clicked, the transmission pulse witch changes.

Example: "MP1"→"MP2"→"LP1"→"LP2"

2.12 Switching the Azimuth Mode

1 Click the Azimuth Mode button of the presentation and mode information.





Azimuth Mode Button

2 Select the azimuth mode from "N UP", "H UP", "C UP", "C UP(Angle Setting)" and "W UP".

The azimuth mode switches.

* [W UP] is in a state in which to load the route,

motion mode is displayed only in the case of [RM (T)] or [RM (R)].

2.13 Setting the Motion Mode

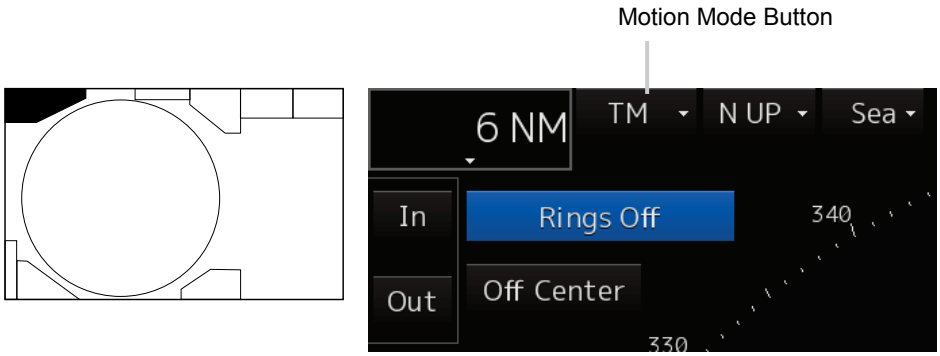
2.13.1 Switching the Motion Mode

1 Select the motion mode from "TM", "RM(T)", and "RM(R)".

The motion mode switches.

2.13.2 Setting Up Own Ship's Position in the "TM" (True Motion) Mode

1 Click the Motion Mode button of the presentation and mode information.



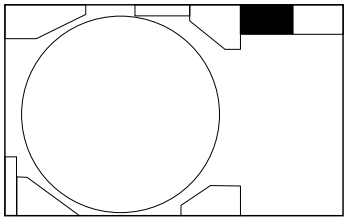
2 Select "TM Reset" from the list of motion modes.

Own ship's position is reset in the same way as when switching from relative motion display to true motion display, and own ship starts moving from that position.

2.14 Displaying Radar Trail

2.14.1 Changing the Trail Length

1 Click the Radar Trail Length Changeover button.

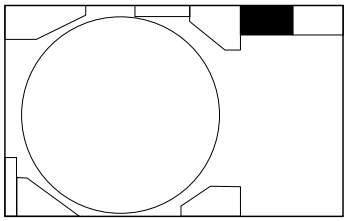


Radar Trail Length Changeover Button

2 Select a radar trail length.

2.14.2 Erasing a Radar Trail

1 Click the "CLR" (Clear Radar Trails) button.



"CLR" (Clear Radar Trails) Button

A confirmation dialog box appears.

2 Click the "OK" button.

All the trails are erased and drawing of trails start from the initial state.

2.14.3 Changing the display Mode of Radar Trails

1 Click the radar trail true/relative changeover button.

Each time the button is clicked, the radar trail display mode switches between "T" and "R".

"T": (True motion trail)

"R": (Relative motion trail)

3 Operation of Target Tracking

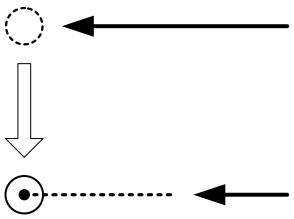
3.1 Acquiring a Target

1 Click the cursor mode selection button of the Left Tool Bar.

2 Position the cursor on the target you want to acquire and then click.

The target is acquired and an initial acquisition symbol is displayed.

A vector is displayed within 1 min.



Manually acquired target

An initial acquisition symbol is displayed.

Target after 1 min has elapsed

An acquisition symbol and a vector are displayed.

3.2 Displaying the Information of Tracking Targets

1 Click the cursor mode selection button of the Left Tool Bar.

2 Click the tracking target whose numeric values you want to display.

The numerical value data of the specified target is displayed in the right part of the screen.

3.3 Erasing Tracked Targets

3.3.1 Erasing One Target At A Time

1 **Right click after moving the cursor above the tracked target to be erased.**
The context menu will be displayed.

2 **Click "Cancel TT" on the Context menu.**
The vector symbol of the tracking target disappears and only radar images remain.

3.3.2 Erasing All Targets

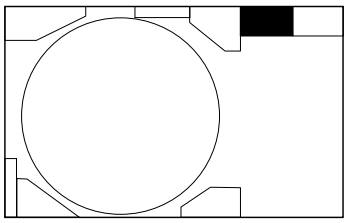
1 **Right click after moving the cursor above the tracked target to be erased.**

2 **Click "Cancel all TT" on the Context menu.**
The vector symbols of all the tracking targets disappear and only radar images remain.

4 AIS Operation

4.1 Setting Up the AIS Display Function

1 Click the "AIS" button.



The button is turned on and the AIS function takes effect.

On display: AIS

The received AIS information is displayed on the screen.

4.2 Activating an AIS Target

1 Right click after moving the cursor above the tracked target to be erased.

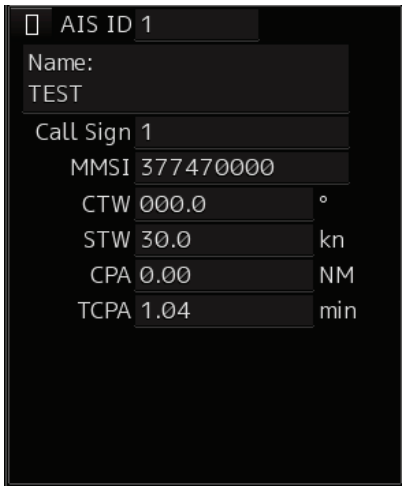
2 Position the cursor on the AIS symbol in the inactive state which you want to activate and then click.

The selected AIS target will be activated, and the vector will be displayed.

4.3 Displaying the AIS Information

1 **Set the cursor mode to the AUTO mode.**

2 **Position the cursor on the activated AIS target of which you want to display AIS target information and then click.**
The information of the selected AIS target will be displayed in the right part of the screen.



4.4 Deactivating an AIS Target

1 **Right click after moving the cursor over the AIS activated target to be deactivated.**
The context menu will be displayed.

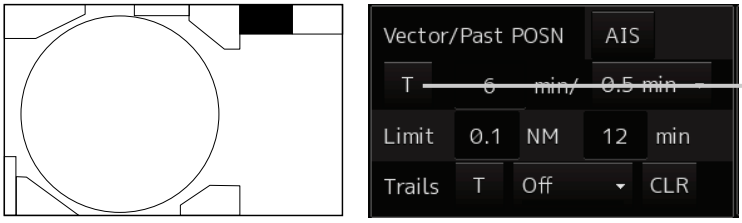
2 **Click “Deactivate” in the context menu.**
The selected activated AIS target will be deactivated.

5 Operation Common to Target Tracking and AIS

5.1 Setting Up Vectors

5.1.1 Setting Up the Vector Mode

1 Click the Vector/Past Position True/Relative changeover button.



Every time this button is clicked, the TT/AIS vector mode is switched between "T" and "R".

5.1.2 Setting Up the Vector Length

Set up the vector length in a range between 1 and 120 min in units of 1 min.

1 Click the Vector Length entry box.

The software keyboard is displayed.

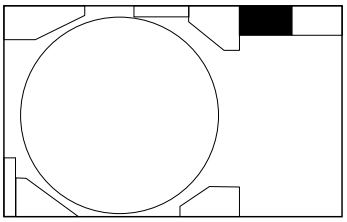
2 Enter the vector length.

For the input method, please see "6.2 Operating with the Software Keyboard".

5.2 Setting Up the Collision Determining Condition

5.2.1 Setting Up the CPA Limit

1 Click the CPA Limit Value entry box.



CPA Limit Value Entry Box

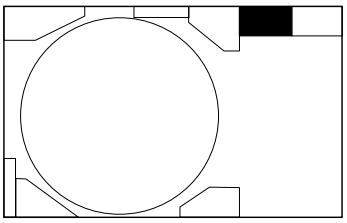
The software keyboard is displayed.

2 Enter a CPA limit value.

For the input method, please see "6.3 Operating with the Software Keyboard".

5.2.2 Setting Up the TCPA Limit

1 Click the TCPA Limit Value entry box.



TCPA Limit Value Entry Box

The software keyboard is displayed.

2 Enter a TCPA limit value.

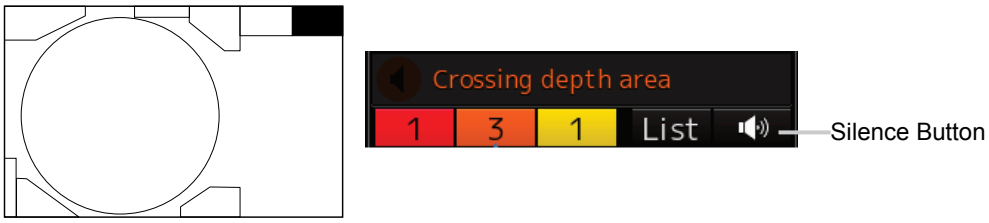
For the input method, refer to the section "6.3 Operation with the Software Keyboard".

6 Other Operations

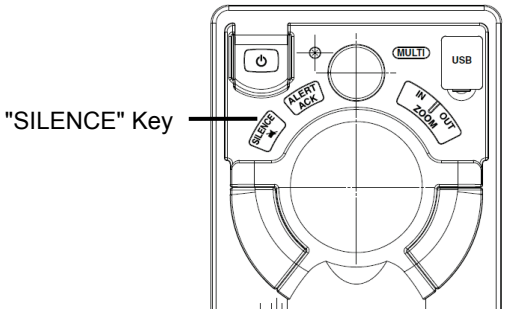
6.1 Stopping an Alert

1 Click the Silence button in the Alert Notification Area or press the "SILENCE" key on the trackball operation unit.

Operation on the Screen



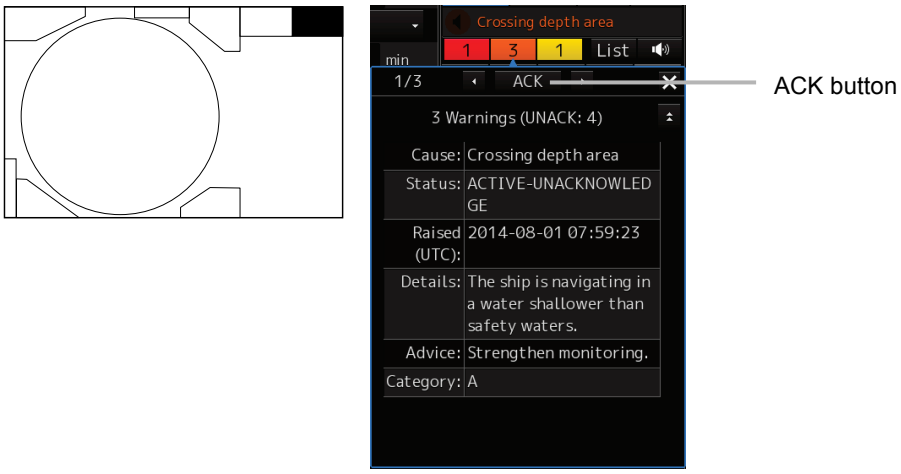
Operation on the Track Ball Operation Unit



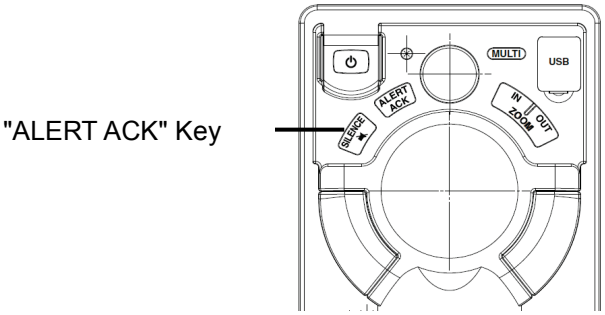
6.2 Acknowledging an Alert

The displayed alert is acknowledged either by clicking the “ACK” button in the detailed display dialog box of the alert, or by pressing the “ALERT ACK” button of the track ball operating unit.

Operation on the Screen



Operation on the Track Ball Operation Unit



6.3 Operation with the Software Keyboard

1 **Click the numeric key you want to enter.**

2 **Verify that the value you specified is correct and then click the "Enter" key.**
The entry is accepted.

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