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
JAN-7201
JAN-9201
JAN-7202
JAN-9202

MARINE RADAR EQUIPMENT/ECDIS/ CONNING DISPLAY

INSTRUCTION MANUAL

<FUNCTION2>

JRC Japan Radio Co., Ltd.

Glossary

AIO	:	Admiralty Information Overlay published by United Kingdom Hydrographic Office (UKHO).
AIS	:	Automatic Identification System
ARCS	:	Admiralty Raster Chart Service. A raster chart published by UKHO
Autosail	:	The system automatically navigates to keep the scheduled route. Same as automatic sailing.
AZ	:	Acquisition/Activation zone
Anti-clutter rain	:	Rain/snow clutter suppression
Anti-clutter sea	:	Sea clutter suppression
AZI	:	AZImuth stabilization mode
Base CD	:	Chart CD containing a complete chart data
BCR/BCT	:	Bow Crossing Range/Bow Crossing Time
Bow crossing symbol	:	The symbol displayed at the edge of the OZT. If own ship avoids OZT on this symbol side, it will pass in front of the bow of another ship.
Cell Permit	:	A file containing an encryption key for S-63 chart. Supplied by UKHO, PRIMAR STAVANGER, and Hydrographic and Oceanographic Department of Japan Coast Guard.
Chart Maintenance	:	Software to manage the charts. Imports and updates the charts.
C-MAP Ed.3	:	C-MAP Edition 3. A digital chart format by Jeppesen (formerly, C-MAP, Norway)
C-MAP	:	Digital chart data by Jeppesen (formerly, C-MAP, Norway)
CTS	:	Course To Steer. Heading command.
COG	:	Course Over the Ground
C UP	:	Course up. Own ship’s course is pointed to the top center of the radar display.
CCRP	:	Consistent Common Reference Point. The own ship position, to which all horizontal measurements such as target range, bearing, relative course, relative speed, CPA or TCPA are referenced, typically the conning position of the bridge.

CORREL	:	CORRELation
CPA/TCPA	:	Distance to the Closest Point of Approach/Time to the Closest Point of Approach.
CTW	:	Course Through Water. The direction of the ship's movement through the water
Data Server	:	Organization providing S-63 chart
DIST	:	Distance
DR	:	Dead Reckoning
Dynamic License	:	Dynamic licensing of C-Map chart license by Jeppesen
DNV	:	Det Norske Veritas
DRIFT	:	The current velocity for manual correction or the current speed on the horizontal axis of the 2-axis log is displayed.
EBL	:	Electronic Bearing Line
ECDIS	:	Electronic Chart Display and Information System
ENC	:	Electronic Navigation Chart. Meaning S-57 and S-63.
ETA	:	Estimated Time of Arrival
ETD	:	Estimated Time of Departure
ENH	:	Enhance
F.ETA	:	Final Estimated Time of Arrival. Estimated time of arrival to the last WPT
GC	:	Great Circle
GPS	:	Global Positioning System
HDG	:	Heading. Ship’s heading
HL	:	Heading Line
HSC	:	High Speed Craft. Vessels which comply with the definition in SOLAS for high speed craft
H UP	:	Head up. Own ship’s heading line is always pointed to the top center of the radar display.
IHO	:	International Hydrographic Office
IMO	:	International Maritime Organization

IR	:	Radar Interference Rejecter
ISW	:	InterSWitch unit
LMT	:	Local Mean Time
LON	:	Longitude
LAT	:	Latitude
LP	:	Long Pulse
MED	:	Marine Equipment Directive. Request standard for standardization of marine equipment within the EU region
MFD	:	Abbreviation of this equipment name. The formal name is Multi Function Display. The navigation support functions such as radar, ECDIS, CID, and AMS with this equipment can be executed by switching.
MMSI	:	Maritime Mobile Service Identity
MOB	:	Man Over Board
MON	:	Performance MOnitor
MP	:	Medium Pulse
NM	:	Nautical Mile 1 nm=1852 m
N UP	:	The north is always pointed to the top center of the radar display. (North up)
OZT	:	Obstacle Zone by Target. It is displayed when the Safety Zone Viewer function is turned on. It is effective for avoidance maneuvers because it indicates a zone where there is a high risk of collision with other ships.
P0N	:	Unmodulated pulse, which is a type of transmission radio wave. While it is a type of radio wave usually used by radars equipped with magnetrons, radio waves with a short pulse length are used also by solid-state radars for short-range detection.
PRIMAR STAVENGER	:	A Norwegian company supplying charts. Publisher of encrypted charts, S-63
PI	:	Parallel Index line
Past positions	:	Equally time-spaced past position marks of a tracked or AIS target and the own ship.
POSN	:	POSitioN

PRF	:	Pulse Repetition Frequency. The number of radar pulses transmitted each second.
PROC	:	PROCess. Radar signal processing function
Q0N	:	A type of radio wave with intra-pulse frequency modulation. It is used for solid-state pulse compression radars.
RL	:	Rhumb Line
RR	:	Range Rings
Relative vector	:	A predicted movement of a target relative to own ship’s motion
RM	:	Relative Motion. A display on which the position of own ship remains fixed, and all targets move relative to own ship.
RM(R)	:	Relative Motion. Relative Trails
RM(T)	:	Relative Motion. True Trails
ROT	:	Rate Of Turn. Change of heading per time unit
Route	:	A set of waypoints
S-57	:	IHO Transfer Standard for Digital Hydrographic Data
S-63	:	IHO Data Protection Scheme
SA Certificate file	:	An electronic file certifying the supplier of S-63 chart. Required for import/ update of S-63 chart.
Safe passing distance	:	Safe distance between own ship and the other ship to avoid a collision. In the Safety Zone Viewer function, it is used as an area around the other ship that own ship should not invade.
SENC	:	System Electronic Navigational Chart
SOG	:	Speed Over the Ground
SART	:	Search And Rescue Transponder
SET	:	The current direction for manual correction or the current speed on the horizontal axis of the 2-axis log is displayed.
SP	:	Short Pulse
STAB	:	STABilization
STW	:	Speed Through Water
SZV	:	Safety Zone Viewer function
TCS	:	Track Control Systems

TCPA	:	Time to Closest Point of Approach to own ship
TM	:	True Motion. A display across which the own ship and targets move with their own true motions.
To WPT	:	To Waypoint (To WPT)
Trails	:	Tracks displayed by the radar echoes of targets in the form of an afterglow
Trial maneuver	:	A graphical simulation facility used to assist the operator to perform a proposed maneuver for navigation and collision avoidance purposes
True vector	:	A vector representing the predicted true motion of a target, as a result of input of the course and speed of the own ship
TT	:	Target Tracking
TTG	:	Time To Go. Time to next waypoint.
TXRX	:	Transmitter-Receiver Unit
UKHO	:	United Kingdom Hydrographic Office
Update CD	:	Chart CD containing the chart data updated from Base CD. This can be used when Base CD data has been imported.
USER CODE	:	A user-specific code assigned by JRC. Required in using ARCS and S-63 charts.
UTC	:	Universal Time, Coordinated
VRM	:	Variable Range Marker
VDR	:	Voyage Data Recorder
WOL	:	Wheel Over Line
WOP	:	Wheel Over Point
WPT	:	Waypoint
WPT-WPT	:	The division of the leg specified by two points. Displays data between two consecutive waypoints.
XTD	:	Cross Track Distance
XTL	:	Cross Track Limit
Activated target	:	A target representing the automatic or manual activation of a sleeping AIS target for the display of additional information
Associated target	:	A target simultaneously representing a tracked target and a AIS target which are decided as the same

Chirp	:	A type of transmission waveform with intra-pulse frequency modulation used by solid-state radars. Its radio wave type is classified as Q0N.
Clutter	:	Unwanted reflections on a radar screen, from sea surface, rain or snow.
Display	:	Screen displayed on the LCD
Frequency deviation range	:	The range of variation of the Q0N frequency used for transmission waves of a solid-state radar. Generally, the greater the frequency deviation range, the higher the resolution in the range direction.

Hydrographic and Oceanographic Department :

Hydrographic and Oceanographic Department of Japan Coast Guard. Publisher of ENC

Import (Chart Maintenance)	:	A procedure of enabling the chart supplied by Base CD to be displayed on ECDIS
Interswitch Unit	:	A device to switch over two or more radar display units and two or more radar antennas
Leg	:	Line between two consecutive waypoints
Lost AIS target	:	A target symbol representing the last valid position of an AIS target before the reception of its data was lost, or its last dead-reckoned position.
Lost tracked target	:	One for which target information is no longer available due to poor, lost or obscured signals.
Power amplifier	:	A radio frequency amplifier circuit consisting of semiconductor elements used for solid-state radars. It employs a high frequency, high power FET.
Primary	:	Main positioning sensor
Pulse compression	:	Correlation processing performed when a transmitted chirp signal is received by a solid-state radar after reflecting off the target. This processing gain enables the radar to have necessary detection capability even when a transmission power is low.
Radar beacon	:	A navigation aid which responds to the radar transmission and generates radio wave
Range	:	An area of the chart displayed on the screen. Represented by one half of the length of the chart display screen.
Range side lobe	:	False image that is generated as a result of pulse compression processing in the solid-state radar when there is a large target such as a large ship in the vicinity.

Reference target	:	A fixed target specified to calculate the speed over the ground
Report	:	User report to be issued periodically for using the Dynamic License method of Jeppesen continuously
Rubber band	:	Border that indicates the selected range.
Scale	:	The display scale
Sea state	:	The average height of the wave expressed by dividing into several classes.
Ship-avoiding operation	:	To operate the ship in order to avoid obstacles during automatic navigation, regardless of the scheduled route
Sleeping AIS target	:	A target indicating the presence and orientation of a vessel equipped with AIS
Spot depth	:	Numeric representation of depth
SSR: Solid State Radar	:	Radar that uses semiconductor elements instead of magnetron, which requires periodic replacement. It is built with a system that ensures necessary detection capability even when a transmission output is low, by using chirp signals with a long pulse length upon transmission and performing pulse compression upon reception
Update (Chart Maintenance)	:	A procedure of reflecting the update data supplied by Update CD on the imported chart.

Contents

1.1 Monitoring a Route by Receiving Route Data from GPS [RADAR]

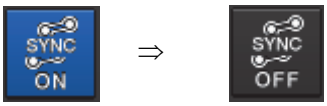
By sharing currently active route data among multiple task stations, simultaneous route monitoring is enabled.
Each task station receives the shared route data by connecting with GPS through LAN. The network setting is required for the task stations that monitor the route in advance to receive the route data. (Select [System Configuration] - [Network] dialog in the Service menu.)

Note
When route monitoring is performed by synchronizing task stations, this monitoring function cannot be executed. Set the task station to the asynchronous state by clicking the [SYNC] button on the Left Tool Bar to set the synchronization to OFF (Refer to "1.5.1 Starting route monitoring by using a shared route file".)

1.1.1 Starting route monitoring

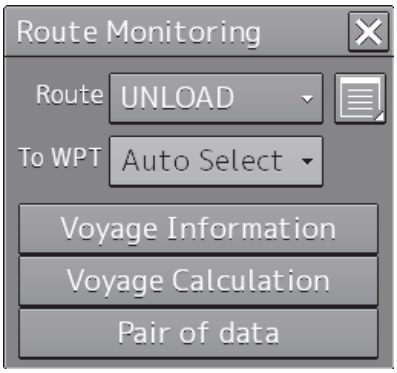
1 **Click on the [Menu] button on the Left Tool Bar.**
A menu is displayed.

2 **Set the [SYNC] (synchronization) button on the Left Tool Bar to OFF to set the task station to the asynchronous state**



Synchronous Asynchronous

3 **Click on the [Route Monitoring] button.**
The [Route Monitoring] dialog is displayed.



4 **Select a route file from the [Route] combo box.**
1) Click on the [Route] combo box.
2) Click on [Active Route].

1.1.2 Ending route monitoring

1 **Click on the [Menu] button on the Left Tool Bar.**
A menu is displayed.

2 **Click on the [Route Monitoring] button in the menu.**
The [Route Monitoring] dialog is displayed.

3 **Click on the [Route] combo box.**

4 **Click on [UNLOAD].**

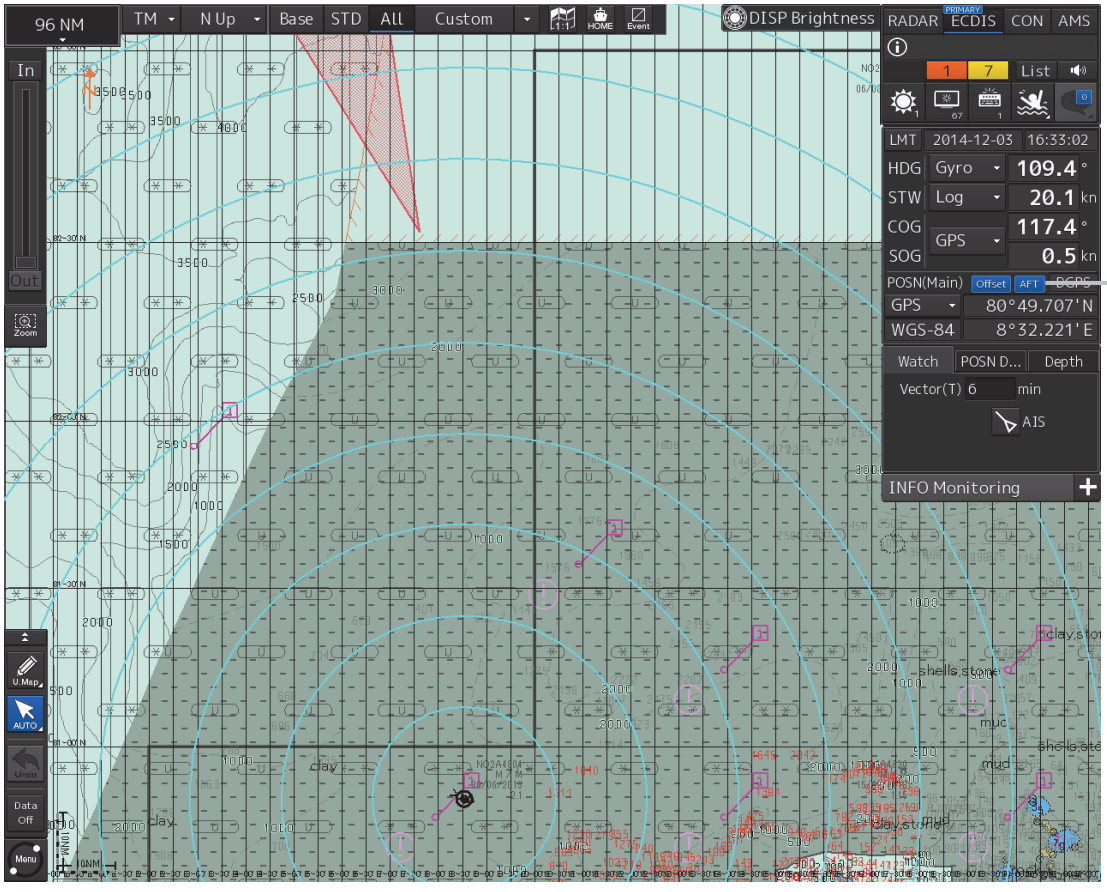
1.2 Performing AFT Navigation by Selecting an Operation Mode [ALL]

An operation mode for AFT navigation can be selected.
The following three operation modes are available corresponding to the type and installation of the ship.

- Two-headed boat
- OSV (Offshore Service Vessel)
- Dual-ACT

Set the operation mode to [Off] when AFT navigation is not performed. (To select an operation mode, select [Settings] – [AFT Operation] dialog in the Service menu.)

When any of the operation modes other than [Off] is selected, a badge is displayed at the position of Own Ship Information, indicating that AFT navigation is being performed.



1.2.1 Using the Two-headed boat mode

The sensor values change from those of the normal sailing time as follows.

RADAR screen

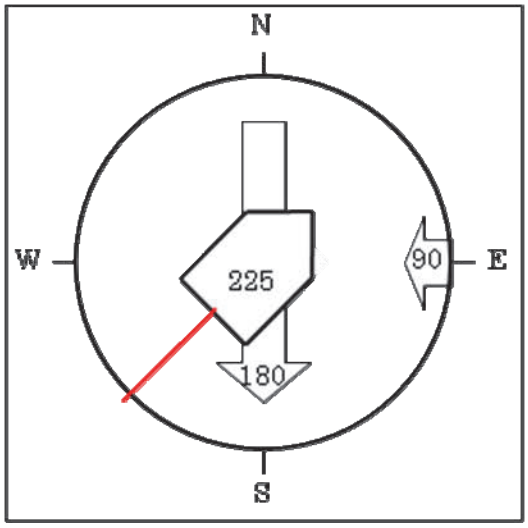
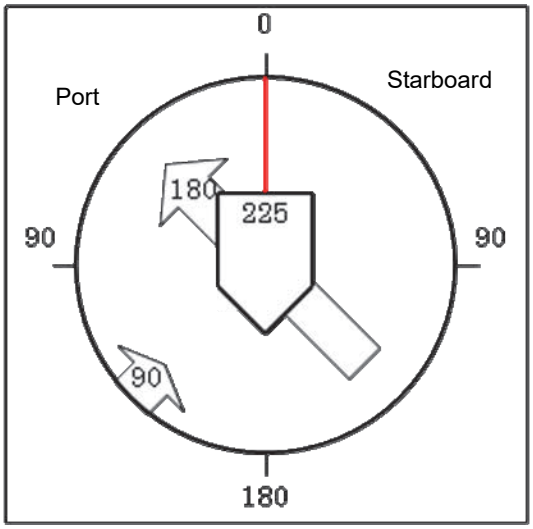
Function	Difference at AFT navigation
Left Tool Bar	SternUP operation is performed at RM-Hup. The ship's heading line (HL) is displayed on the stern side.
EBL	Since HDG reference is applied at [R] (relative) measurement, the value determined by adding 180.0° to the input value is used as the reference bearing.
PI	The value determined by adding 180.0° to the input value is used as the reference bearing of Heading Link and Reference Bearing.
Cursor Readout	Since HDG reference is applied at [R] (relative) measurement, the value determined by adding 180.0° to the input value is used as the reference bearing.
Common information window (Wave Analysis)	For Direction and spectrum display (matching with the echo), the value determined by adding 180.0° to the input value is used as the reference bearing at relative measurement.
Menu - Route Monitoring - Pair of data	For Act.HDG, the value determined by adding 180.0° to the input value is used as the reference bearing.
Menu - AIS/TT - Trial Maneuver	In the case of Sea stabilization, since the trial starting bearing is applied as the heading reference, the value determined by adding 180.0° to the input value is used as the reference bearing.
Menu - Tools - PI	The value determined by adding 180.0° to the input value is used as the reference bearing of Heading Link and Reference Bearing.
Menu - Tools - EBL Maneuver	To create Maneuver in the ship's heading direction, the value determined by adding 180.0° to the input value is used as the starting bearing.
Menu - Tools - Manual Position Fix	TPL default HDG: The value determined by 180.0° to the input value is used. TPL default STW: The SOG value is used since STW cannot be used.
Menu - View - Options - Gyro/Rudder Graph	The value determined by adding 180.0° to the input value is used for HDG.
Menu - Alert - New Target Alarm	The value determined by adding 180.0° to the input value is used as the AZ reference bearing.

Function	Difference at AFT navigation
Menu - Alert - Track Control	A course difference alert is issued as a result of the comparison with HDG. The value determined by adding 180.0° to the input value is used as the reference bearing.
Radar Echo	To maintain integrity with the drawing, the value determined by adding 180.0° to the input value is used as the reference bearing.
Echo Trail	To maintain integrity with the drawing, the value determined by adding 180.0° to the input value is used as the reference bearing.
Menu - Settings - Filter	The value determined by adding 180.0° to the input value is used as the Sector Filter reference bearing.
Menu - Settings - Temporary Route	The value determined by adding 180.0° to the input value is used as the Temporary Route creation reference bearing.
Menu - Settings - (Nav Equipment) General	True bearing is applied for GYRO Setting.
Menu - Maintenance - Sensor Selection/Status	No correction of HDG/STW selection at manual setting.
Menu - Service - Installation - System Configuration - CCRP	The antenna is set to the normal position.

ECDIS screen

Function	Difference at AFT navigation
Common information window (Wave Analysis)	For Direction and spectrum display (matching with the echo), the value determined by adding 180.0° to the input value is used as the reference bearing at relative measurement.
Menu - Autosail	Menu invalid
Menu - Logbook	Recorded HDG: The value determined by adding 180.0° to the input value is used. Recorded STW: The SOG value is used since STW cannot be used.
Menu - View - Options - Gyro/Rudder Graph	The value determined by adding 180.0° to the input value is used as HDG.
Menu - Maintenance - Sensor Selection/Status	The values are corrected as follows in cases other than manual setting. HDG: The value determined by adding 180.0° to the input value is used. STW: The SOG value is used since STW cannot be used.

CONNING screen

Function	Difference at AFT navigation
Basic information area - Heading information - Ship's heading	The value determined by adding 180.0° to the input value is used.
Basic information area -Time/COG/ship speed information - COG	The value determined by adding 180.0° to the input value is used.
Basic information area- Wind direction/Wind speed information (N Up)-Wind direction Basic information area- Wind direction/Wind speed information (H Up)-Wind direction Basic information area- Wind direction/Wind speed information (H Up)-Wind direction mark Basic information area - Current information (N Up) - Current set Basic information area - Current information (H Up) - Current set Basic information area - Current information (H Up) - Current set mark Basic information area - Wind / Current meter (N Up) - Wind direction Basic information area - Wind / Current meter (N Up) - Current set Basic information area - Wind / Current meter (N Up) - Ship's heading Basic information area - Wind / Current meter (N Up) - COG Basic information area - Wind / Current meter (H Up) - Wind direction Basic information area - Wind / Current meter (H Up) - Current set Basic information area - Wind / Current meter (H Up) - Ship's heading Basic information area - Wind / Current meter (H Up) - COG	Example where the sensor input values are as follows; Gyro: 45.0° Current: 180.0° Wind direction: 90.0° HDG: 225°  
Navigation - 3D Navigation - COG	Non display
Navigation - 3D Navigation - Own ship	The boat form is inverted.
Navigation - 3D Navigation - CTS	Non display

Function	Difference at AFT navigation
Navigation - Ship speed information - Ship speed through water	The SOG value is used since STW cannot be used.
Docking-Ship block- boat form	The boat form is inverted.
Docking- Propeller/engine information - Propeller information (FPP) - Propeller rotation direction	The value determined by inverting the operation direction is used.
Custom - Ship's heading + Rudder angle graph	The value determined by adding 180.0° to the input value is used.
Menu - Maintenance - Sensor Selection/Status	The values are corrected as follows in cases other than manual setting. HDG: The value determined by adding 180.0° to the input value is used. STW: The SOG value is used since STW cannot be used.

1.2.2 Using the OSV (Offshore Service Vessel) mode

The sensor values change from those of normal navigation as follows.

RADAR screen

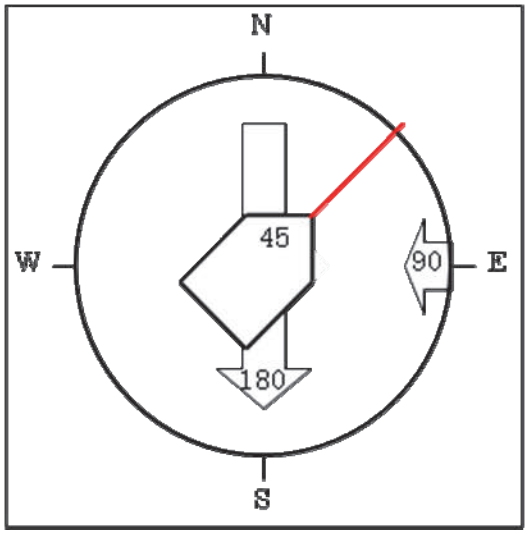
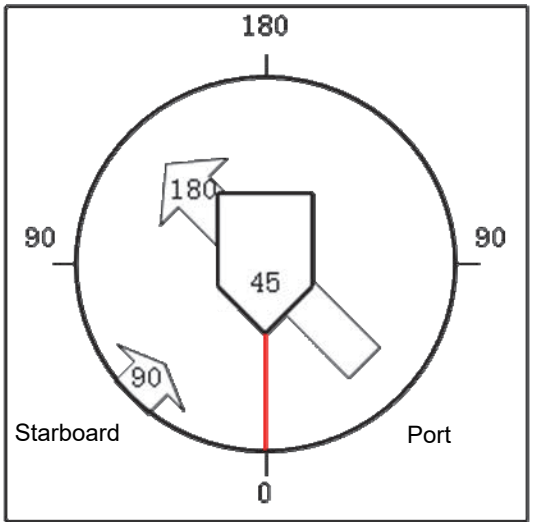
Function	Difference at AFT navigation
Left Tool Bar	SternUP operation is performed at RM-Hup. The ship's heading line (HL) is displayed on the stern side.
EBL	Since HDG reference is applied at [R] (relative) measurement, the value determined by adding 180.0° to the input value is used as the reference bearing.
PI	The value determined by adding 180.0° to the input value is used as the reference bearing of Heading Link and Reference Bearing.
Cursor Readout	Since HDG reference is applied at [R] (relative) measurement, the value determined by adding 180.0° to the input value is used as the reference bearing.
Common information window (Wave Analysis)	For Direction and spectrum display (matching with the echo), the value determined by adding 180.0° to the input value is used as the reference bearing at relative measurement.
Menu - Route Monitoring - Pair of data	For Act.HDG, the value determined by adding 180.0° to the input value is used as the reference bearing.

Function	Difference at AFT navigation
Menu - AIS/TT - Trial Maneuver	In the case of Sea stabilization, since the trial starting bearing is applied as the heading reference, the value determined by adding 180.0° to the input value is used as the reference bearing.
Menu - Tools - PI	The value determined by adding 180.0° to the input value is used as the reference bearing of Heading Link and Reference Bearing.
Menu - Tools - EBL Maneuver	To create Maneuver in the ship's heading direction, the value determined by adding 180.0° to the input value is used as the starting bearing.
Menu - Tools - Manual Position Fix	TPL default HDG: The value determined by 180.0° to the input value is used.
Menu - View - Options - Gyro/Rudder Graph	The value determined by adding 180.0° to the input value is used as HDG.
Menu - Alert - New Target Alarm	The value determined by adding 180.0° to the input value is used as the AZ reference bearing.
Menu - Alert - Track Control	A course difference alert is issued as a result of the comparison with HDG. The value determined by adding 180.0° to the input value is used as the reference bearing.
Radar Echo	To maintain integrity with the drawing, the value determined by adding 180.0° to the input value is used as the reference bearing.
Echo Trail	To maintain integrity with the drawing, the value determined by adding 180.0° to the input value is used as the reference bearing.
Menu - Settings - Filter	The value determined by adding 180.0° to the input value is used as the Sector Filter reference bearing.
Menu - Settings - Temporary Route	The value determined by adding 180.0° to the input value is used as the Temporary Route creation reference bearing.
Menu - Settings - (Nav Equipment) General	True bearing is applied for GYRO Setting.
Menu - Maintenance - Sensor Selection/Status	No correction of HDG/STW selection at manual setting.
Menu - Service - Installation - System Configuration - CCRP	The antenna is set to the normal position.

ECDIS screen

Function	Difference at AFT navigation
Top screen (chart)	SternUP operation is performed at RM-Hup. The ship's heading line (HL) is displayed on the stern side.
Common information window (Wave Analysis)	For spectrum display (matching with the echo), the value determined by adding 180.0° to the input value is used as the reference bearing at relative measurement.
Menu - Autosail	Menu invalid
Menu - Logbook	Recorded HDG: The value determined by adding 180.0° to the input value is used.
Menu - View - Options - Own ship	For HL, relative to ground vector/relative to water vector, running around monitoring vector/sector, AIS filter, and AZ bearing, the values determined by adding 180.0° to the values displayed on the FWD navigation are used.
Menu - View - Options - Gyro/Rudder Graph	The value determined by adding 180.0° to the input value is used as HDG.
Menu - Maintenance - Sensor Selection/Status	The values are corrected as follows in cases other than manual setting. HDG: The value determined by adding 180.0° to the input value is used.

CONNING screen

Function	Difference at AFT navigation
Basic information area- Wind direction/Wind speed information (N Up)-Wind direction Basic information area- Wind direction/Wind speed information (H Up)-Wind direction Basic information area- Wind direction/Wind speed information (H Up)-Wind direction mark Basic information area - Current information (N Up)- Current set Basic information area - Current information (H Up)- Current set Basic information area - Current information (H Up)- Current set mark Basic information area - Wind / Current meter (N Up) - Wind direction Basic information area - Wind / Current meter (N Up) - Current set Basic information area - Wind / Current meter (N Up) - Ship's heading Basic information area - Wind / Current meter (N Up) - COG Basic information area - Wind / Current meter (H Up) - Wind direction Basic information area - Wind / Current meter (H Up) - Current set Basic information area - Wind / Current meter (H Up) - Ship's heading Basic information area - Wind / Current meter (H Up) - COG	Example where the sensor input value are as follows; Gyro: 45.0° Current: 180.0° Wind direction: 90.0° HDG: 45.0°  
Docking-Ship Boat form	The boat form is inverted.
Menu - Maintenance - Sensor Selection/Status	The values are corrected as follows in cases other than manual setting. HDG: The value determined by adding 180.0° to the input value is used.

1.2.3 Using the Dual-ACT Mode

The sensor values change from those of normal navigation as follows.

RADAR screen

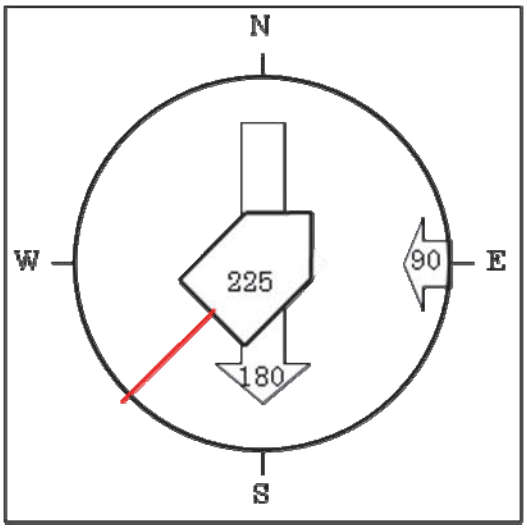
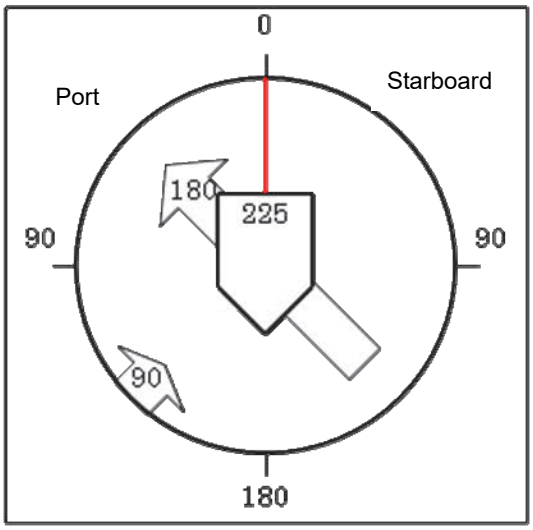
Function	Difference at AFT navigation
Left Tool Bar	SternUP operation is performed at RM-Hup. The ship's heading line (HL) is displayed on the stern side.
EBL	Since HDG reference is applied at [R] (relative) measurement, the value determined by adding 180.0° to the input value is used as the reference bearing.
PI	The value determined by adding 180.0° to the input value is used as the reference bearing of Heading Link and Reference Bearing.
Cursor Readout	Since HDG reference is applied at [R] (relative) measurement, the value determined by adding 180.0° to the input value is used as the reference bearing.
Common information window (Wave Analysis)	For Direction and spectrum display (matching with the echo), the value determined by adding 180.0° to the input value is used as the reference bearing at relative measurement.
Menu - Route Monitoring - Pair of data	For Act.HDG, the value determined by adding 180.0° to the input value is used as the reference bearing.
Menu - AIS/TT - Trial Maneuver	In the case of Sea stabilization, since the trial starting bearing is applied as the heading reference, the value determined by adding 180.0° to the input value is used as the reference bearing.
Menu - Tools - PI	The value determined by adding 180.0° to the input value is used as the reference bearing of Heading Link and Reference Bearing.
Menu - Tools - EBL Maneuver	To create Maneuver in the ship's heading direction, the value determined by adding 180.0° to the input value is used as the starting bearing.
Menu - Tools - Manual Position Fix	TPL default HDG: The value determined by adding 180.0° to the input value is used. TPL default STW: The value determined by inverting the code of the input value is used.
Menu - View - Options - Gyro/Rudder Graph	The value determined by adding 180.0° to the input value is used for HDG.
Menu - Alert - New Target Alarm	The value determined by adding 180.0° to the input value is used as the AZ reference bearing.
Menu - Alert - Track Control	A course difference alert is issued as a result of the comparison with HDG. The value determined by adding 180.0° to the input value is used as the reference bearing.

Function	Difference at AFT navigation
Radar Echo	To maintain integrity with the drawing, the value determined by adding 180.0° to the input value is used as the reference bearing.
Echo Trail	To maintain integrity with the drawing, the value determined by adding 180.0° to the input value is used as the reference bearing.
Menu - Settings - Filter	The value determined by adding 180.0° to the input value is used as the Sector Filter reference bearing.
Menu - Settings - Temporary Route	The value determined by adding 180.0° to the input value is used as the Temporary Route creation reference bearing.
Menu - Settings - (Nav Equipment) General	True bearing is applied for GYRO Setting.
Menu - Maintenance - Sensor Selection/Status	No correction of HDG/STW selection at manual setting.
Menu - Service - Installation - System Configuration - CCRP	The antenna is set to the normal position.

ECDIS screen

Function	Difference at AFT navigation
Common information window (Wave Analysis)	For Direction and spectrum display (matching with the echo), the value determined by adding 180.0° to the input value is used as the reference bearing at relative measurement.
Menu - Autosail	Menu invalid
Menu - Logbook	Recorded HDG: The value determined by adding 180.0° to the input value is used. Recorded STW: The value determined by inverting the code of the input value is used.
Menu - View - Options - Own ship	For HL, relative to water vector, AIS filter, and AZ bearing, the values determined by adding 180.0° to the values displayed on the FWD navigation are used.
Menu - View - Options - Gyro/Rudder Graph	The value determined by adding 180.0° to the input value is used as HDG.
Menu - Maintenance - Sensor Selection/Status	The values are corrected as follows in cases other than manual setting. HDG: The value determined by adding 180.0° to the input value is used. STW: The value determined by inverting the code of the input value is used.

CONNING screen

Function	Difference at AFT navigation
Basic information area - Heading information - Ship's heading	The value determined by adding 180.0° to the input value is used.
Basic information area -Time/COG/ship speed information - COG	The value determined by adding 180.0° to the input value is used.
Basic information area- Wind direction/Wind speed information (N Up)-Wind direction	Example where the sensor input values are as follows; Gyro: 45.0° Current: 180.0° Wind direction: 90.0° HDG: 225°  
Basic information area- Wind direction/Wind speed information (H Up)-Wind direction	
Basic information area- Wind direction/Wind speed information (H Up)-Wind direction mark	
Basic information area - Current information (N Up)- Current set	
Basic information area - Current information (H Up)- Current set	
Basic information area - Current information (H Up)- Current set mark	
Basic information area - Wind / Current meter (N Up) - Wind direction	
Basic information area - Wind / Current meter (N Up) - Current set	
Basic information area - Wind / Current meter (N Up) - Ship's heading	
Basic information area - Wind / Current meter (N Up) - COG	
Basic information area - Wind / Current meter (H Up) - Wind direction	
Basic information area - Wind / Current meter (H Up) - Current set	
Basic information area - Wind / Current meter (H Up) - Ship's heading	
Basic information area - Wind / Current meter (H Up) - COG	
Navigation - 3D Navigation - COG	Non display
Navigation - 3D Navigation - Own ship	The boat form is inverted.
Navigation - 3D Navigation - CTS	Non display

Function	Difference at AFT navigation
Navigation - Ship speed information - Ship speed through water	The value determined by inverting the code of the input value is used.
Docking-Ship block- boat form	The boat form is inverted.
Docking- Propeller/engine information - Propeller information (FPP) - Propeller rotation direction	The value determined by inverting the operation direction is used.
Custom - Ship's heading + Rudder angle graph	The value determined by adding 180.0° to the input value is used.
Menu - Maintenance - Sensor Selection/Status	The values are corrected as follows in cases other than manual setting. HDG: The value determined by adding 180.0° to the input value is used. STW: The value determined by inverting the code of the input value is used.

1.3 Setting the LRIT Function by INMARSAT C to On/Off [ECDIS] [RADAR]

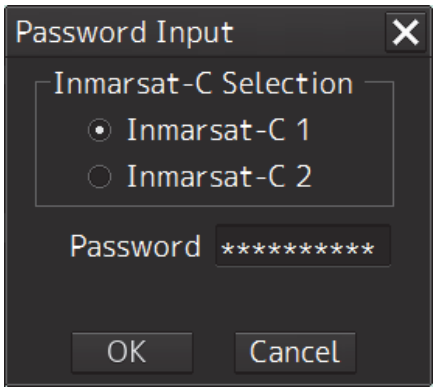
When INMARSAT C terminal JUE-87 is used as the LRIT (Long Range Identification and Tracking) equipment, the LRIT function can be set to On/Off at the task station.
Select JUE-87 as the equipment and assign an IP address. (Select [System Configuration] – [Subsystem Installation] dialog and [Settings] – [Inmarsat-C] dialog in the Service menu.)

1.3.1 Displaying the [Inmarsat-C DNID (for LRIT)] dialog

By displaying the [Inmarsat-C DNID (for LRIT)] dialog by using the Inmarsat-C DNID (for LRIT) (INMARSAT C LRIT DNID) menu, the LRIT function can be set to On/Off for each DNID (Data Reporting and Polling Closed Network ID).
Prepare a password for logging into the [Inmarsat-C DNID (for LRIT)] dialog.

1 **Click on the [Menu] button on the Left Tool Bar.**
A menu is displayed.

2 **Select [Maintenance] - [Inmarsat-C DNID (for LRIT)] in the menu.**
The [Password Input] dialog is displayed.

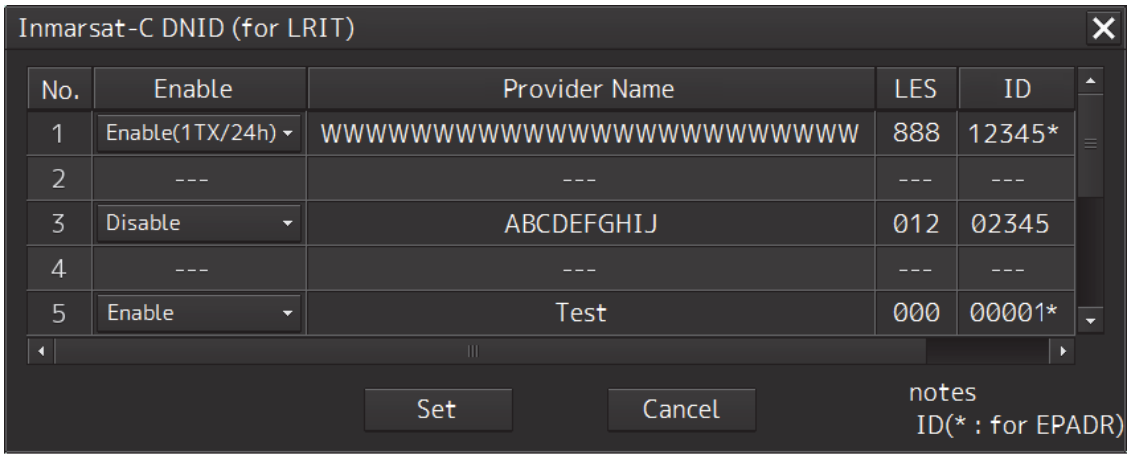


3 **When two units of JUE-87 are installed, select a terminal by clicking on the [Inmarsat-C1] or [Inmarsat-C2] button.**

4 **Enter a password in the [Password] input box to log into the [Inmarsat-C DNID (for LRIT)] dialog of the terminal that was selected in Step 3.**

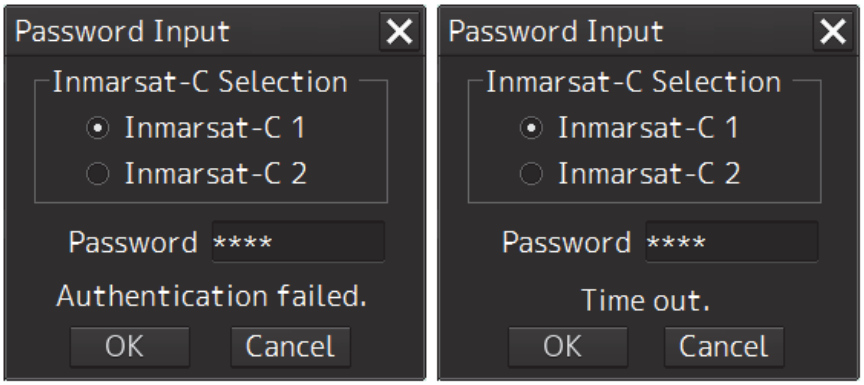
5 **Click on the [OK] button.**
To stop login processing, close the dialog by clicking on the [Cancel] button or the [X] button.
When the [OK] button is clicked on, “Processing…” is displayed in the dialog and password authentication starts. The login processing can be stopped during authentication by clicking on the [Cancel] button or the [X] button.

When authentication is completed, the [Inmarsat-C DNID (for LRIT)] dialog is displayed.



Failing logging into the [Inmarsat-C DNID(for LRIT)] dialog

When password authentication fails or authentication takes too long, an error message is displayed in the [Password Input] dialog.

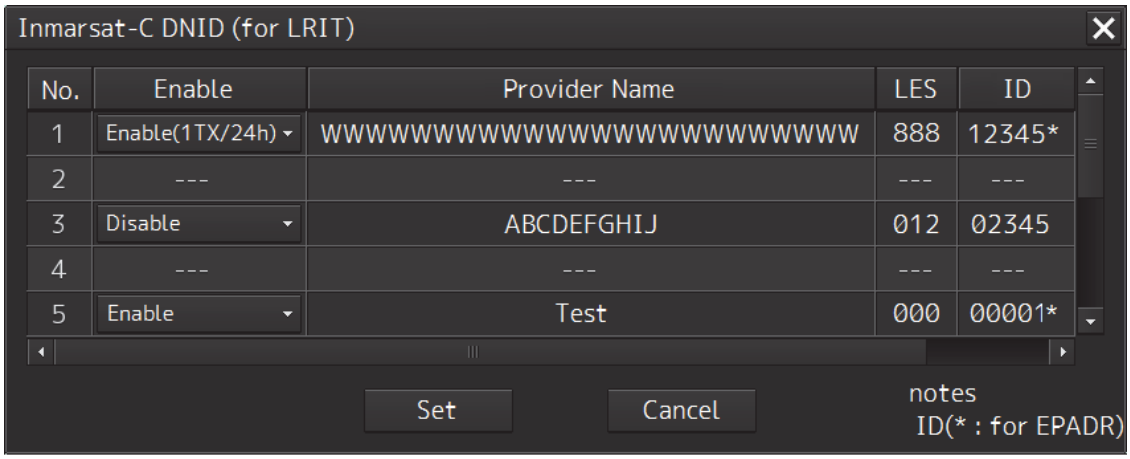


Failing password authentication　Password authentication takes too long

To re-input a password, close the dialog by clicking on the [Cancel] button or the [X] button.
To re-execute authentication, click on the [OK] button.

1.3.2 Setting the LRIT function to On/Off

In the [Inmarsat-C DNID (for LRIT)] dialog, a DNID list for LRIT that is set in the terminal that is selected at login is displayed.
Select any DNID and set the LRIT function to On/Off.

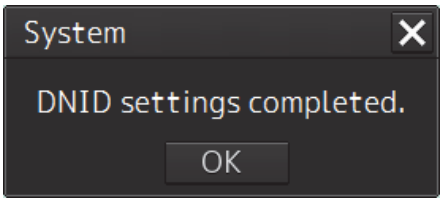


1 **Open the combo box of the ID for which the LRIT function is to be set to On/Off in the [Enable] column.**

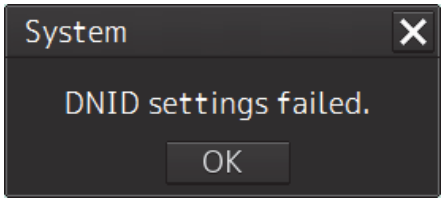
2 **Select [Enable] (On) or [Disable] (Off) in the combo box.**

3 **Click on the [Set] button.**
To cancel the setting of On/Off, close the dialog by clicking on the [Cancel] button or the [X] button.
When the [Set] button is clicking on, the “Processing…” is displayed in the dialog and DIND setting authentication starts.

When authentication is completed, the following message is displayed.



When the setting cannot be changed to On/Off, the following error message is displayed.



In either case, close the dialog by clicking on the [OK] button or the [X] button.

1.4 Displaying Current Layer Data [ECDIS]

Display of a current track together with the own track became possible. Five current tracks corresponding to the water depths can be displayed concurrently or individually. Current tracks are recorded as layer current data and can be played back in playback mode.

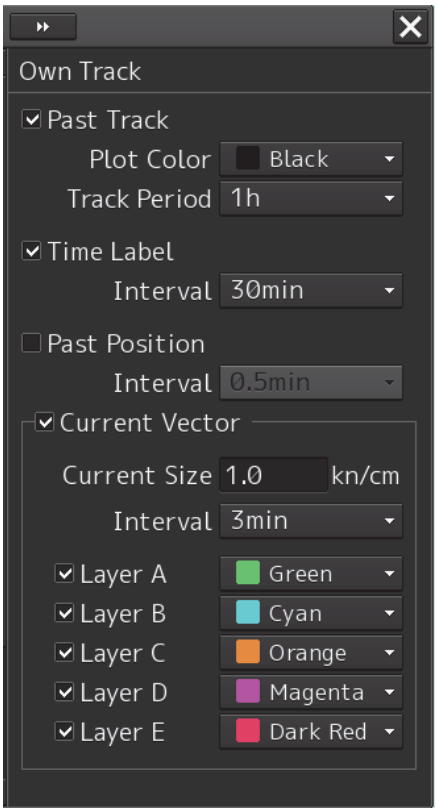
1.4.1 Displaying current tracks

In the [Own track] dialog of the View menu, select enable/disable current track display, display interval, layer of the current track, and display color.

1 **Click on the [Menu] button on the Left Tool Bar.**
A menu is displayed.

2 **Select [View] – [Options] in the menu.**
The [View – Options] dialog is displayed.

3 **Select [Own Track] in the classification pane.**
The [Own Track] dialog is displayed.



4 To display a current track, check the [Current Vector] check box.

Note

When the [Past Track] check box is unchecked, the [Current Vector] check box cannot be checked.

Specifying a size of the current vector

Enter a value in the [Current Size] box.

Selecting a current track display interval

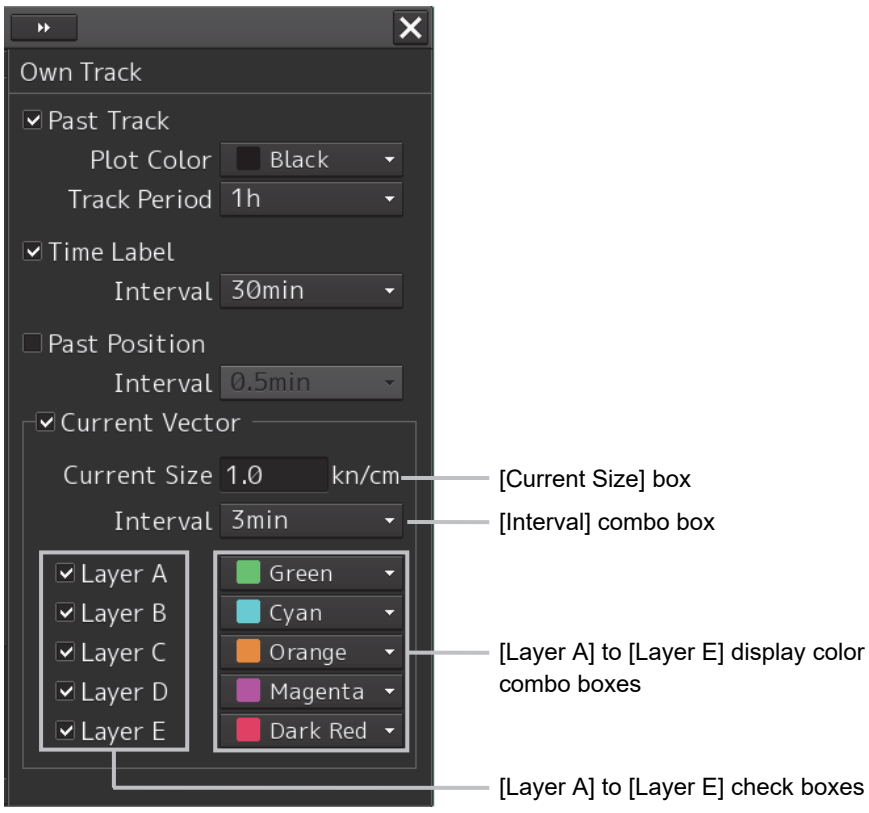
Select a value in the [Interval] (current display interval) combo box.

Selecting a layer of the current track to be displayed

Of the check boxes, [Layer A] to [Layer E], check the check box of the layer in which the track is to be displayed.

Selecting a current track display color

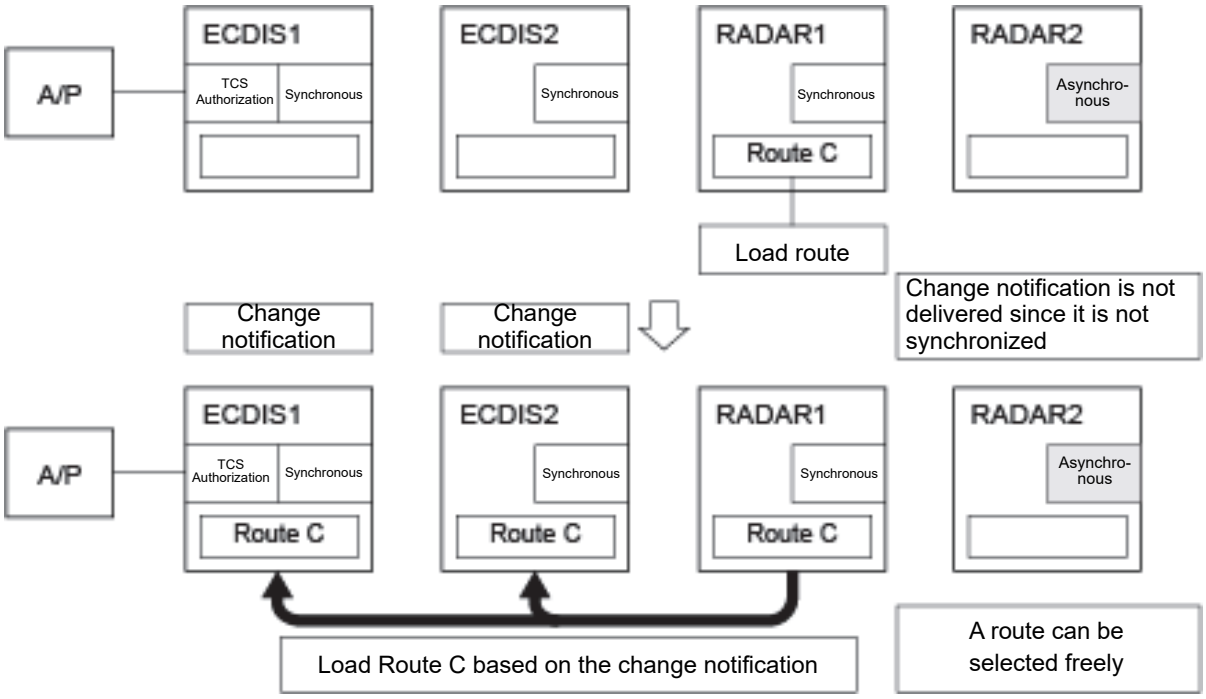
Select a color used for indicating the current track of each layer in the display color combo box corresponding to any of [Layer A] to [Layer E].



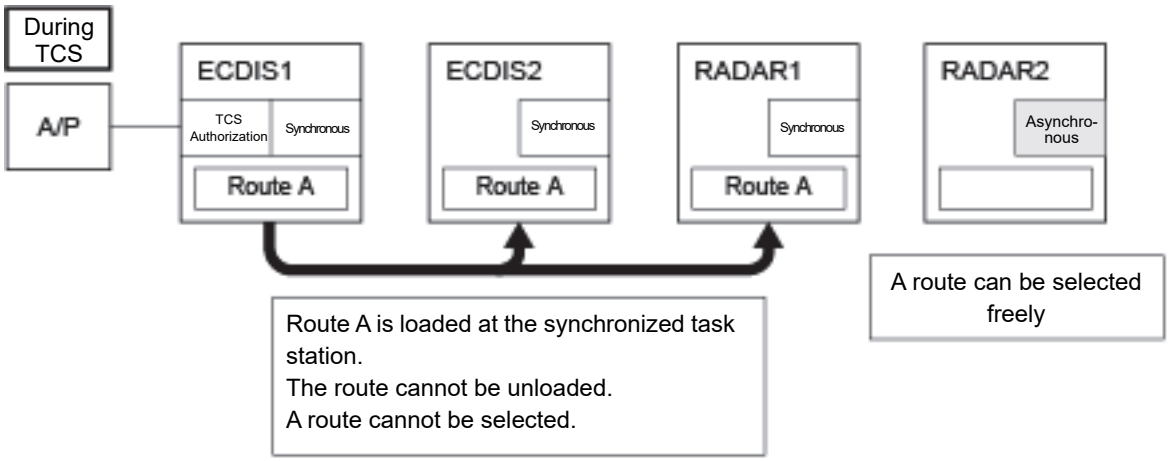
1.5 Monitoring a Route by Sharing a Route File [ECDIS] [RADAR]

A route can be monitored by multiple synchronous task stations by sharing one route file.
When route monitoring is started or the route or WPT is changed by any of the task stations, the information is notified to other task stations and each task station follows. However, during TCS, the route selection initiative is granted to the task station with TCS authorization and other task stations follow.

- **Example of the route monitoring system that does not perform TCS**

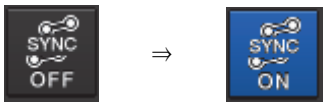


- **Example of the route monitoring system during TCS execution**



1.5.1 Starting route monitoring by using a shared route file

1 **Synchronize a task station by clicking on the [SYNC] (synchronization) button on the Left Tool Bar.**



Asynchronous Synchronous

2 **Click on the [Menu] button on the Left Tool Bar in any synchronized task station.**
A menu is displayed.

3 **Click on the [Route Monitoring] button in the menu.**
The [Route Monitoring] dialog is displayed.

4 **Select a route file from the [Route] combo box.**
Route monitoring starts.
Start of route monitoring is notified to another task menu and the route file to be used is copied.

5 **Click on the [Menu] button on the Left Tool Bar at each task station.**
A menu is displayed.

6 **Click on the [Route Monitoring] button in the menu.**
The [Route Monitoring] dialog is displayed.

7 **Select an [Active Route] file of the [Route] combo box.**
Route monitoring starts at each task station.

1.5.2 Notes on monitoring a route by using a shared route file

Note the following points when a route is monitored by multiple task stations by sharing a route file.

- When route monitoring is performed by sharing the route data that is received from GPS, this monitoring function cannot be executed. End the route monitoring by GPS. (Refer to "1.1.2 Ending route monitoring".)
- When a task station in asynchronous state changes to the synchronous state, the route file for monitoring is automatically downloaded. Therefore, if the route file of the same name exists, the file is overwritten.
- TCS starts and the task station with the TCS authorization is changed to the synchronous state even if it is in the asynchronous state at the start of TCS. The [SYNC] button on the Left Tool Bar is disabled, thereby disabling the synchronous/asynchronous switching.
- When a route that is changed is not notified due to the occurrence of a communication error during monitoring, the route change is stored as change information. When communication is restored, the updated route file is automatically downloaded to each task station.

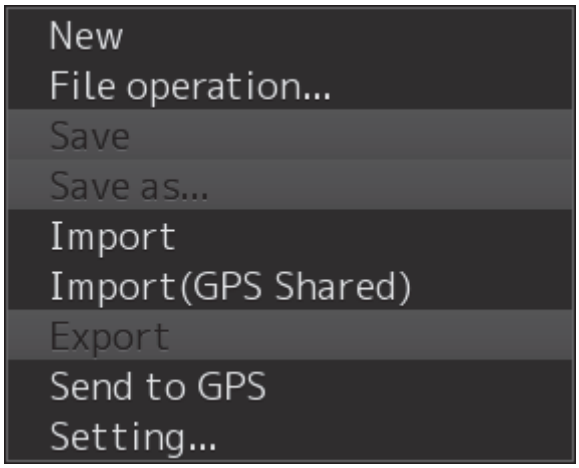
1.6 Sending/Receiving Route Files to/from GPS [ECDIS]

1.6.1 Importing the route file that is received from GPS

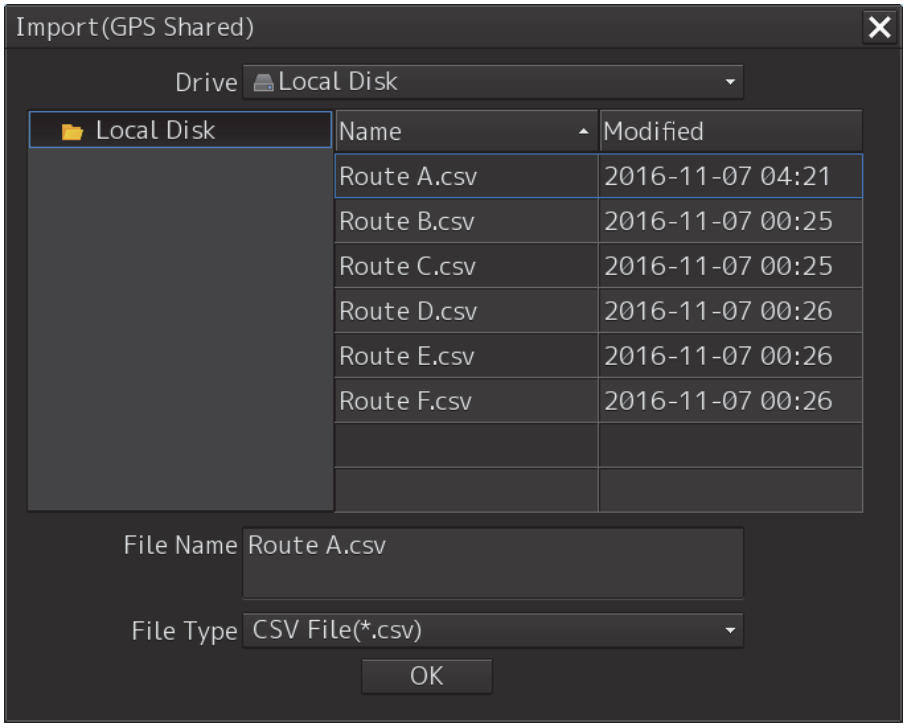
1 **Click on the [Menu] button on the left tool bar.**

2 **Click on [Route Planning] on the menu.**
The [Route Planning] dialog is displayed.

3 **Click on the [Route Plan Menu (▼)] button.**



4 **Select [Import (GPS Shared)] from the route plan menu.**



5 **Select a drive containing route files in the [Import (GPS Shared)] dialog.**

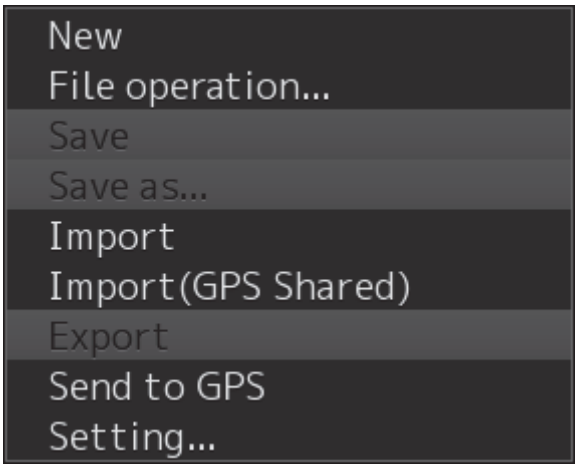
6 **Select a route file and click on the [OK] button.**

1.6.2 Transmitting a route file to GPS

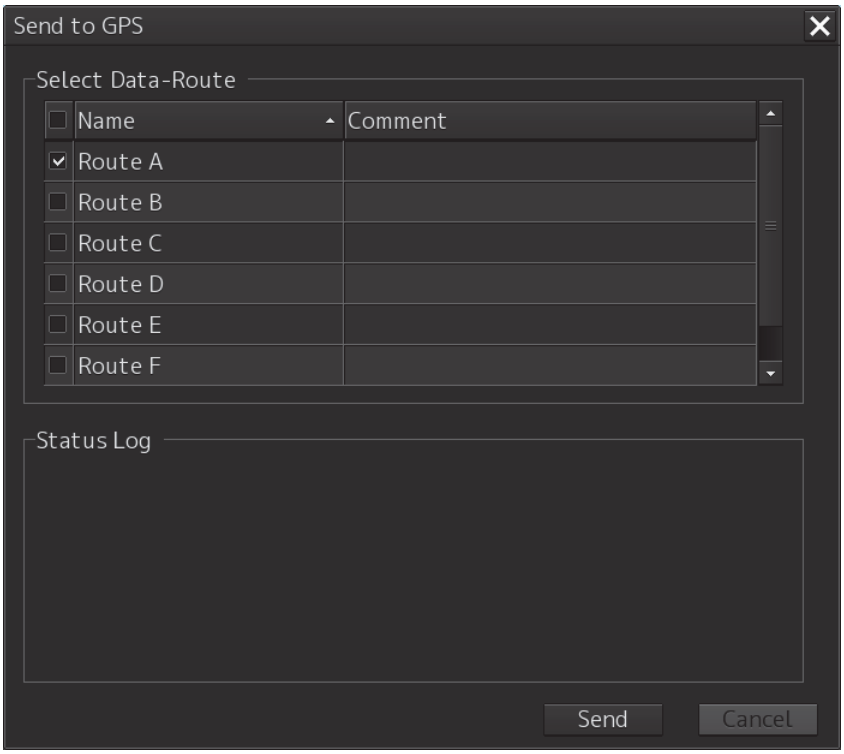
1 **Click on the [Menu] button on the left tool bar.**

2 **Click on the [Route Planning] button on the menu.**
The [Route Planning] dialog is displayed.

3 **Click on the [Route Plan Menu (▼)] button.**



4 **Select [Send to GPS] from the route plan menu.**
The [Send to GPS] dialog is displayed.



5 **Check the check box of the route to be transmitted from [Select Data Route].**

6 **Click on the [Send] button.**

Status Log

Contents that are displayed in [Status Log]

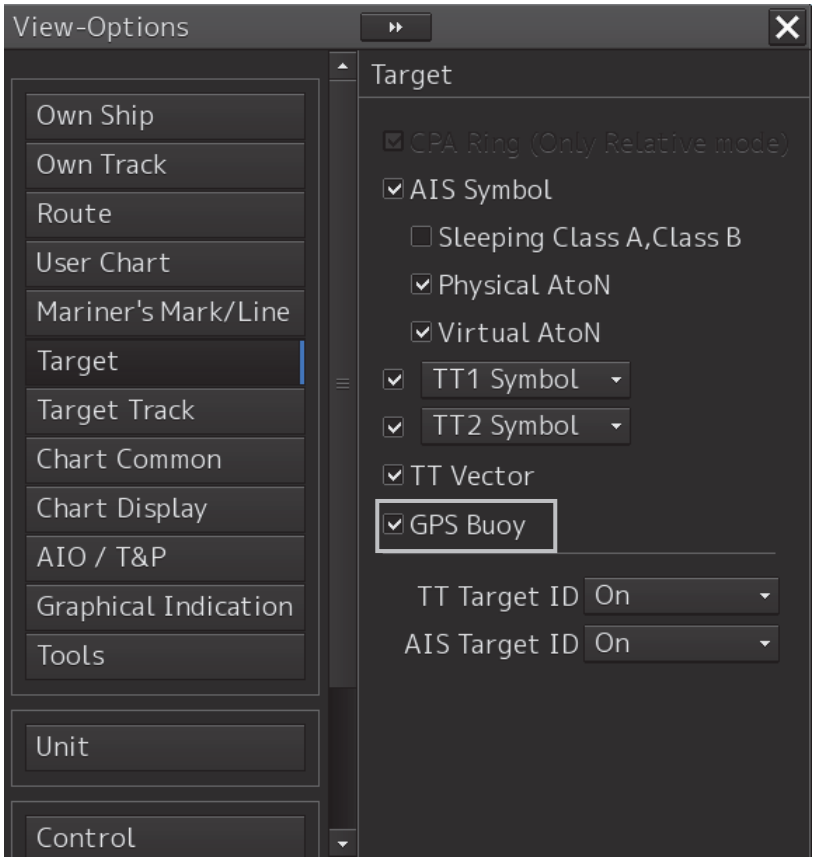
Status		Contents
Transmission	Cancel	[Send] Route % Canceld(count = %d/3)
	Successfully transmitted	[Send] Route % Success(count = %d/3)
	Transmission failed	[Send] Route % Failure(count = %d/3)

1.7 Display the GPS Buoy symbol
[ECDIS] [RADAR]

Receive GPS buoys information and display symbols.

In order to enable GPS buoys, it is necessary to turn on the GPS Buoy checkbox in [Service] - [Device Installation] of the equipment setting.

Also, in the [Target] dialog of [Menu] - [View] - [Options], turn on the GPS Buoy check box.



The shape of the displayed GPS buoy symbol (xxx is the buoy number)

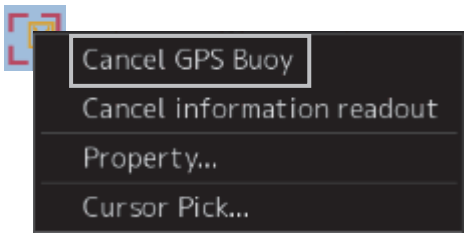
Sleeping Lost

The color of the GPS buoy symbol can be changed in [Menu] - [Settings] - [Color and Brightness].

※Please refer to “Setting up Color and Brightness” of the ECDIS Manual.

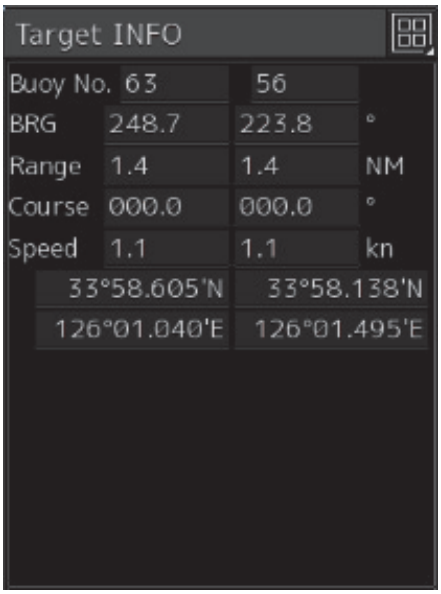
Delete the symbol

Right-click on the GPS buoy symbol and select **Cancel GPS Buoy** from the context menu, you can delete the target symbol.

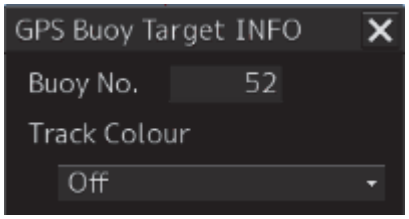


Numerical value display screen (Target INFO)

When you left-click on the GPS buoy symbol, the target symbol information is displayed in Target INFO.



Right click on the GPS buoy symbol and select **Property...** from the context menu to display the properties of the target symbol.



Note

The maximum number of GPS buoy symbols displayed at one time is 20 pieces.
More than that, it will not be displayed even if it is received.

1.8 Display the NMEA destination
[ECDIS] [RADAR]

Receive the NMEA destination and display the destination.
In order to enable the NMEA destination, it is necessary to turn on the Plotter checkbox in [Service] - [Device Installation] of the equipment setting.

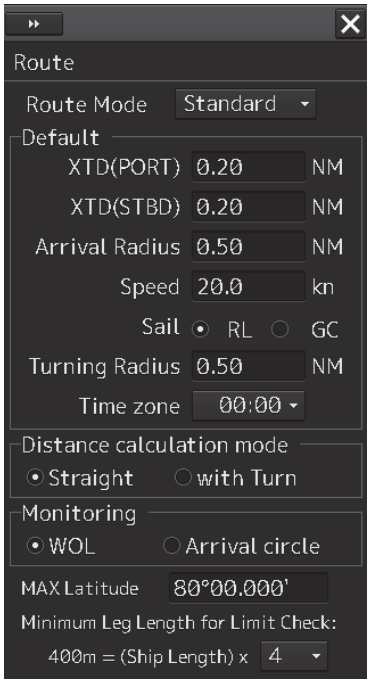
1 Click on the [Menu] button on the left tool bar.

The menu is displayed.

2 Click on the [Settings] button on the menu.

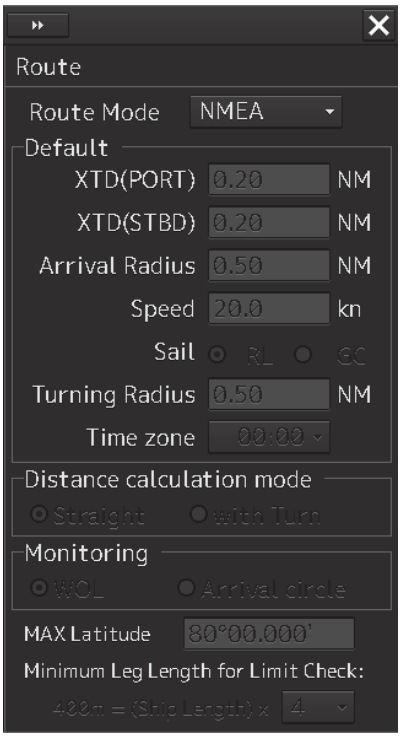
The settings dialog is displayed.

3 Select [Route] in the classification pane.



4 Select [NMEA] from [Route Mode] combo box.

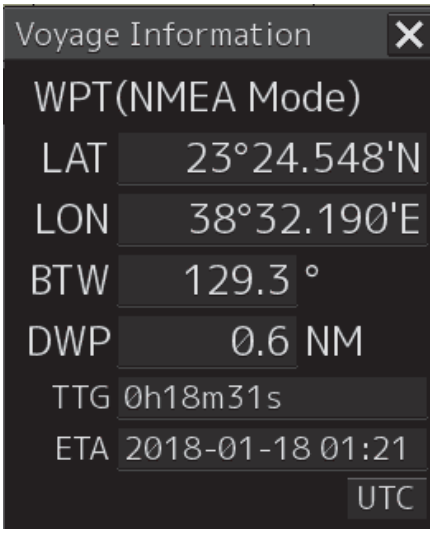
When [Route Mode] is slected [NMEA], Other items are displayed as Disabled.



When [Route Mode] is slected [NMEA], [Menu] – [Route Planning] is also displayed as Disabled.

5 Click on the [Route Monitoring] button on the menu.

[Voyage Information] is displayed.



6 When ordinary ECDIS route is used, return [Standard] from [Route Mode] combo box.

1.9 Operate remotely the Marine VHF Radiotelephone (JHS-800S) [ALL]

Channel settings and DSC call of VHF Radiotelephone (JHS-800S) can be operated from taskstation, it can be communicated from a distance place by wireless speaker microphone. ADDRESS(MMSI code) for DSC call of JHS-800S can be take from AIS target on ECDIS chart, or on RADAR PPI.

Note
For more details of VHF Radiotelephone JHS-800S, please refer to instruction manual of JHS-800S.

1.9.1 Select VHF Radiotelephone (JHS-800S) for use [ALL]

First of all, select the JHS-800S.

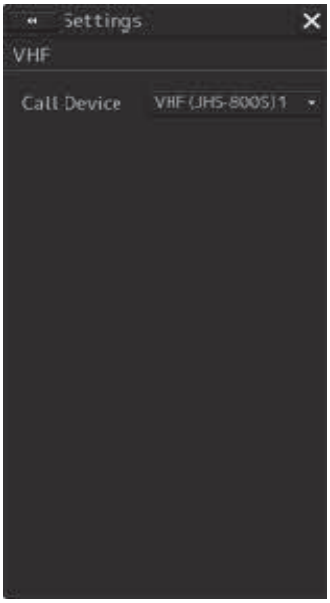
1 **Click on the [Menu] button on the left tool bar.**

The menu is displayed.

2 **Click on the [Settings] button on the menu.**

The settings dialog is displayed.

3 Select [VHF] in the classification pane.



4 Select JHS-800S on the [Call Device] combo box for VHF communication.

The target JHS-800S can be selected from up to 3 equipments, depending on the installation.

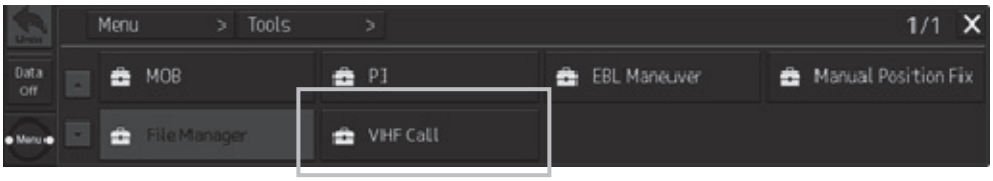
1.9.2 Display VHF Radiotelephone status from menu-bar [ALL]

For confirming/changing a JHS-800S communication channel, open the JHS-800S window from menu-bar. And also, DSC call is available on the window by input parameters such as ADDRESS (MMSI code).

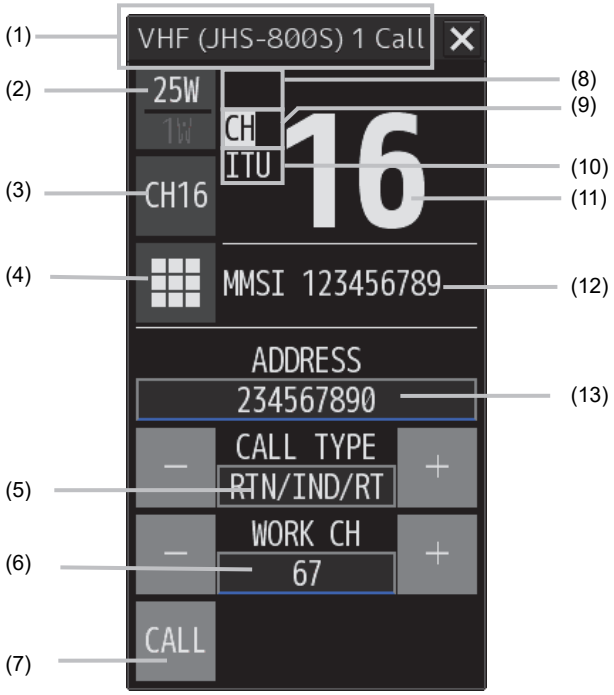
1 Click on the [Menu] button on the left tool bar.

The menu is displayed.

2 Click on the [Tools] – [VHF Call] button on the menu.



The [VHF Call] windows is displayed. Confirm the number of JHS-800S that you selected on the settings dialog is displaying on title bar of the window.



(1) Title bar

Displays selected VHF Radiotelephone (JHS-800S). You can change it on [VHF] pane on the [Settings] dialog.

(2) Output power

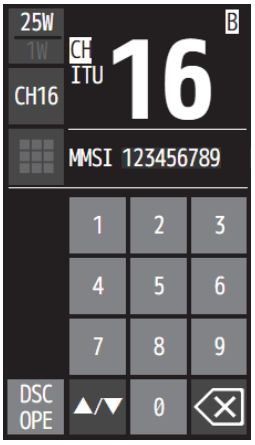
Switches transmitting power between 25 W and 1 W.

(3) [CH16] button

CH16: Sets the radiotelephone to CH16 (or another priority channel).

(4) Numeric key button for channel select

Displays the numeric key pad (input 0 to 9) for selecting channels (figure on the right). And, push "DSC OPE" button to return back to DSC edit screen.



(5) [CALL TYPE] selector

Selects type of DSC call. Note that the both of distress and urgency calls on this dialog are not allowed on this screen.

(6) [WORK CH] selector

Selects communication channel to use after DSC call. CH16 is not selectable when the category is routine.

(7) [CALL] button

Start DSC call by these inputted settings. When calling the individual station, the communication can be started by the wireless speaker microphone after received the acknowledgement.

(8) [SCAN/DW/TW]

On scanning, Indicates the current condition as follows. And its displayed only scanning mode.

- Scanning : 
- Dual Watch : 
- During triple watch : 

(9) [CH]

Indicates the channel category as follows.

- Priority channel such CH16, CH70 : 
- Other channels : 

(10) [ITU]

Indicates the type of a current channel region.

- ITU channel : ITU
- USA channel : USA
- Canada channel : CAN
- Inland waterway channel : IWW
- Private channel : P0/P1/P2

(11) Channel number

Indicates the current channel.

(12) Own ship's MMSI Code

Indicates the ship’s MMSI.

(13) [ADDRESS] input

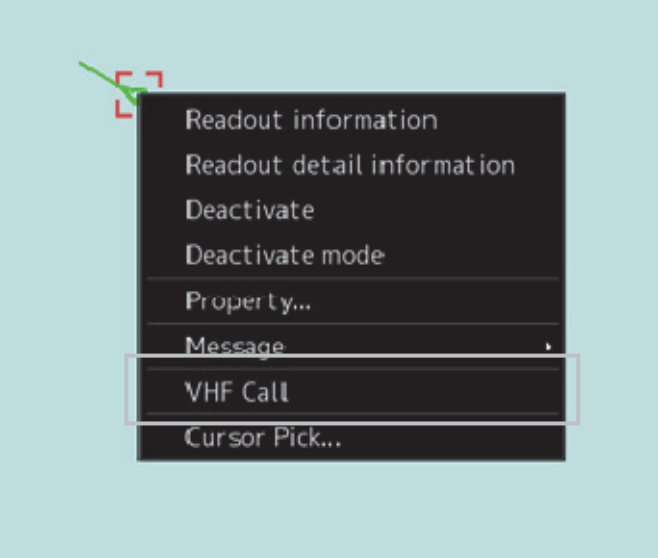
Use numeric key button if input destination ADDRESS (MMSI code) by manually. After all 9 digits are inputted it is accepted automatically.

1.9.3 DSC call for AIS target on ECDIS chart [ECDIS]

[VHF Call] dialog can be shown by right-click menu of AIS target on ECDIS chart.
If the taskstation already received MMSI code of the AIS target, the MMSI code is shown on the [VHF Call] dialog. The MMSI code on the [VHF] dialog is available for the VHF DSC calls.

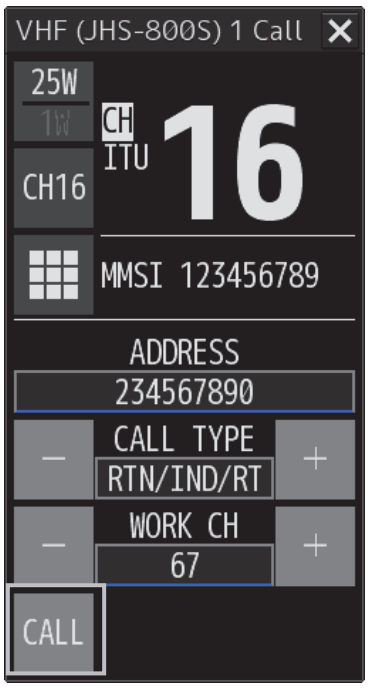
1 Right-Click the AIS target on the ECDIS chart.

The context menu is displayed.



2 Click the [VHF Call] menu on the context menu.

The [VHF Call] dialog is displayed.



3 Click the [CALL] button on [VHF Call] dialog.

Selected VHF Radiotelephone (JHS-800S) starts DSC call.
When calling the individual station, the communication can be started by the wireless speaker microphone after received the acknowledgement.

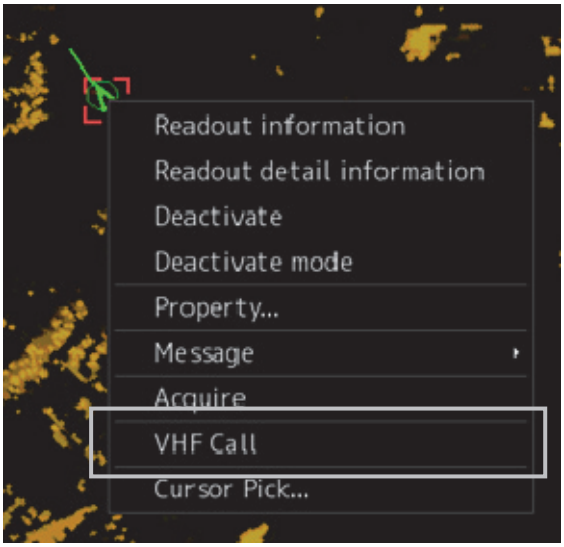
In the example case above, the DSC call including ADDRESS(MMSI) as 234567890 and the communication channel as CH67 is sent to the vessel. Additionally, "CALL TYPE" and "WORK CH" can be changed if needed.

1.9.4 DSC call for AIS target on RADAR PPI [RADAR]

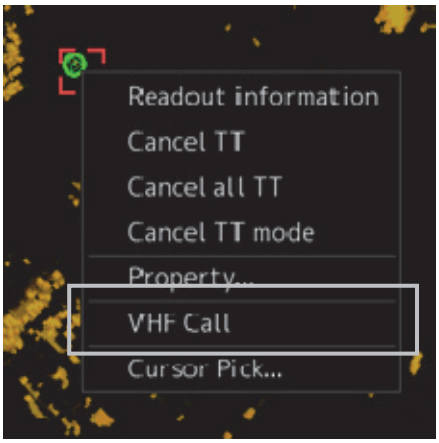
[VHF Call] dialog can be shown by right-click menu of AIS target on RADAR PPI.
If the task station already received MMSI code of the AIS target, the MMSI code is shown on the [VHF Call] dialog. The MMSI code on the [VHF] dialog is available for the VHF DSC calls.

1 Right-Click the AIS target on the RADAR PPI.

The context menu is displayed.

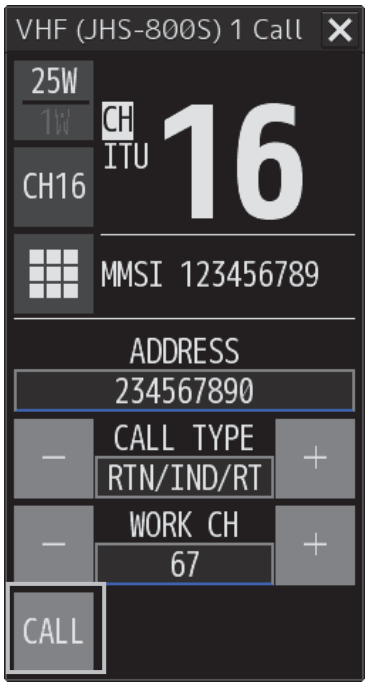


Also, the [VHF Call] context menu is displayed on TT simbol that is associated with AIS information.



2 Click the [VHF Call] menu on the context menu.

The [VHF Call] dialog is displayed.



3 Click the [CALL] button on [VHF Call].

Selected VHF Radiotelephone (JHS-800S) will start DSC call.
When calling the individual station, the communication can be started by the wireless speaker microphone after received the acknowledgement.

In the example case above, the DSC call including ADDRESS(MMSI) as 234567890 and the communication channel as CH67 is sent to the vessel. Additionally, "CALL TYPE" and "WORK CH" can be changed if needed.

1.10 Import a file that created on the J-Marine NeCST(JAN-470) [ECDIS][RADAR]

A route file and a user chart file that created on the J-Marine NeCST are imported by simple operation.

Note

After starting the J-Marine NeCST(JAN-470),start this equipment(JAN-7200/9200).

If the equipment(JAN-7200/9200) has been started first, the function may not work correctly.

1.10.1 Import a route file [ECDIS]

1 Click on the [Menu] button on the left tool bar.

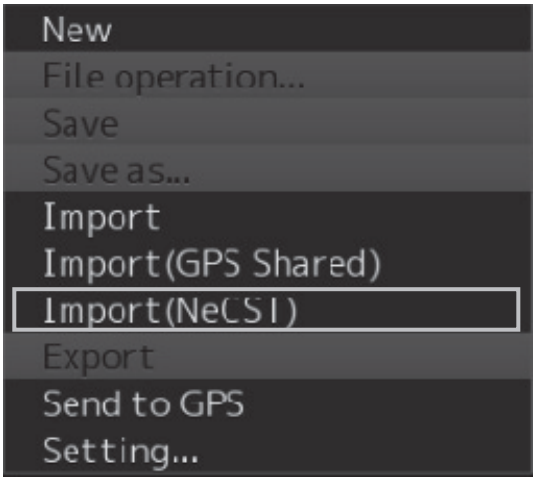
The menu is displayed.

2 Click on the [Route Planning] on the menu.

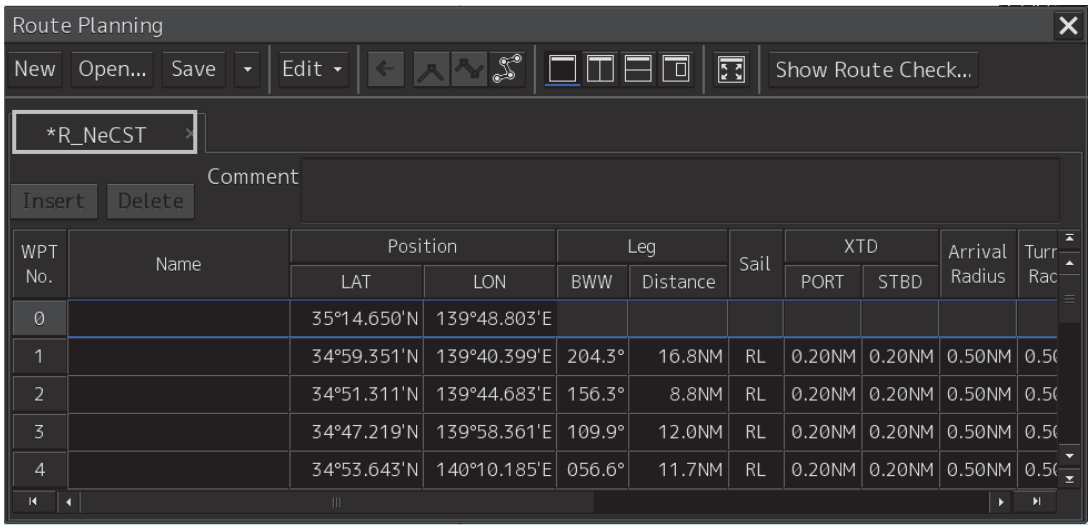
The [Route Planning] dialog is displayed.

3 Click on the [Route Plan Menu (▼)] button.

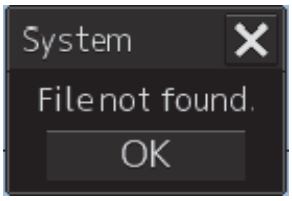
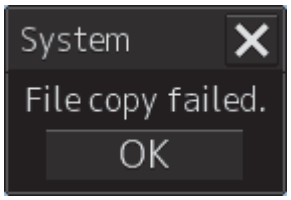
4 Click on the [Import (NeCST)] from the route plan menu.

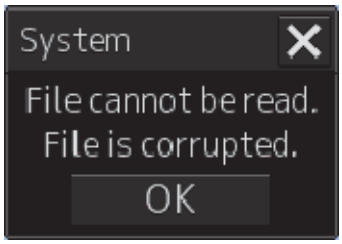
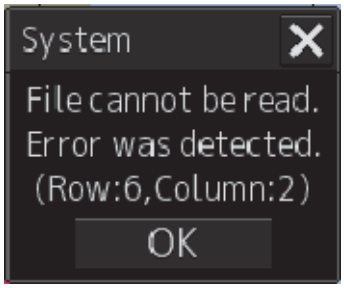
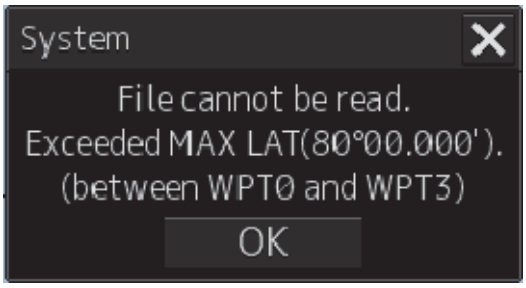


The route file is imported as “*R_NeCST” from the J-Marine NeCST.



If not imported correctly, the following error message is displayed.

Error message	Cause/Action
	- If there is not a route file on the J-Marine NeCST. After create a new route in the J-Marine NeCST, please Import again.
	**- If a communication error occurs between the J-Marine NeCST and this equipment(JAN-7200/9200).** Please check the connection between the J-Marine NeCST and this equipment. If the equipment(JAN-7200/9200) has been started first, the function may not work correctly.
	**- If file copy failed from the J-Marine NeCST.** Please check the connection between the J-Marine NeCST and this equipment and import again.

<table>
<tr><th>Error message</th><th>Cause/Action</th></tr>
<tr><td> 
</td><td rowspan="2">- If a route file that created on the J-Marine NeCST is corrupted.
After create a new route on the J-Marine NeCST, please Import again.</td></tr>
<tr><td> 
</td></tr>
<tr><td> 
</td><td>- If the latitude of a route file that created on the J-Marine NeCST is out of the setting range of this equipment(JAN-7200/9200).
After create a new route within the setting range of this equipment on the J-Marine NeCST, please import again.

Please confirm the setting of the maximum latitude on [Menu]-[Setting]-[Route]dialog.</td></tr>
</table>

5 Click the [Save] button or the [Save as…]button.

The route file is saved.
Also, when a route file has been imported, a route file name is "R_NeCST".
Click the [Save as…] button for change a file name.

1.10.2 Import a user chart file [ECDIS][RADAR]

1 Click on the [Menu] button on the left tool bar.

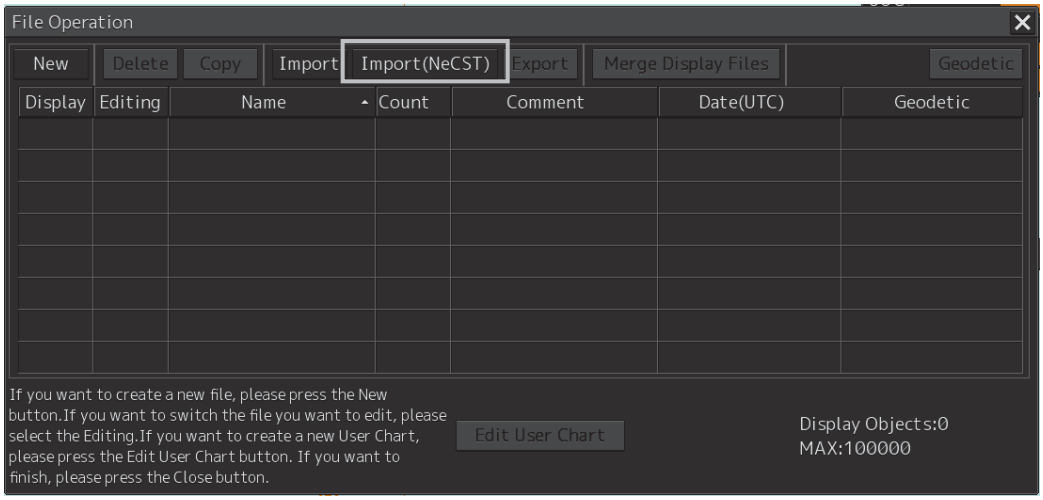
The menu is displayed.

2 Click on the [User Chart] on the menu.

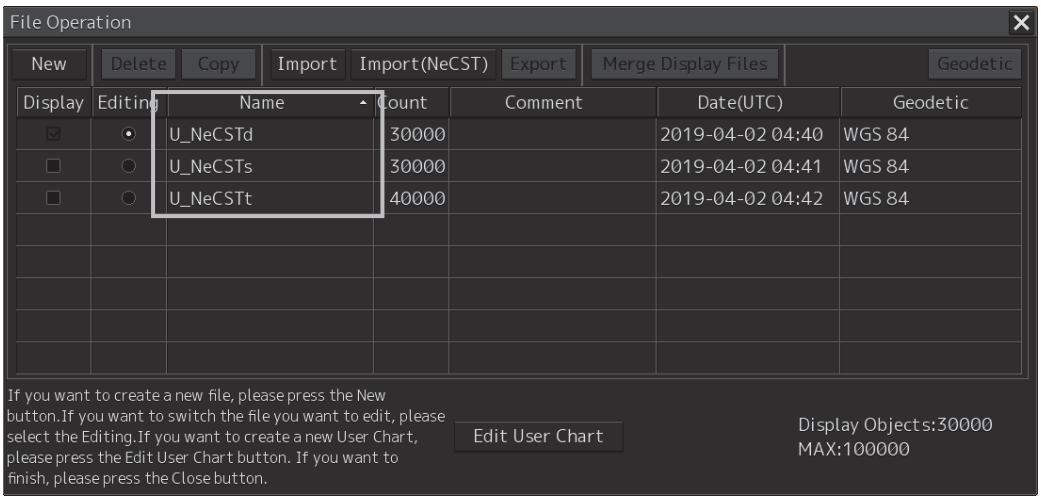
3 Click on the [File Operation] button on the submenu.

The [File Operation] operation dialog box appears.

4 Click on the [Import(NeCST)]button.



The user chart file is saved.

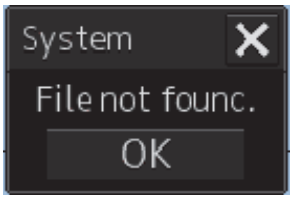
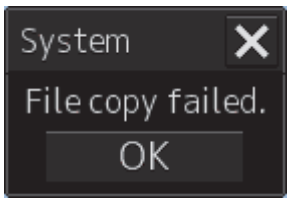
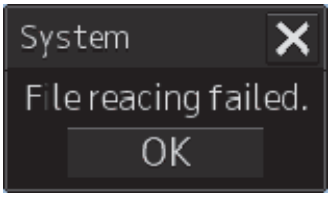


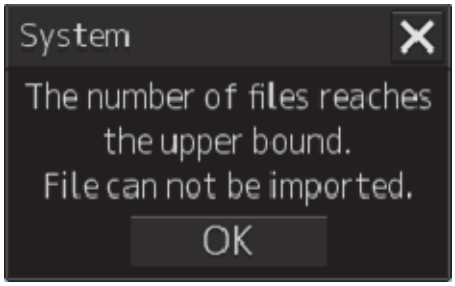
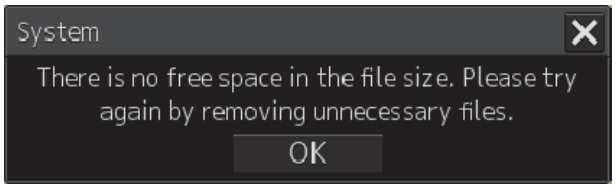
Also, A file name is saved the following according to the type of data that created on the J-Marine NeCST.
Click the [Save as…] button for change a file name.

The following a user chart file types are saved.

File name	Type of data
U_NeCSTd	A handwritten data created on “Draw” function of the J-Marine NeCST.
U_NeCSTs	A sticker data created on “Template” function of the J-Marine NeCST.
U_NeCSTt	A template data created on “Template” function of the J-Marine NeCST.

If not imported correctly, the following error message is displayed.

<table>
<tr><th>Error message</th><th>Cause/Action</th></tr>
<tr><td rowspan="2"> 
</td><td>- If there is not a user chart file on the J-Marine NeCST.
After create a user chart in J-Marine NeCST, please Import again.</td></tr>
<tr><td>- If a communication error occurs between the J-Marine NeCST and this equipment(JAN-7200/9200).
Please check the connection between the J-Marine NeCST and this equipment.
If the equipment(JAN-7200/9200) has been started first, the function may not work correctly.</td></tr>
<tr><td> 
</td><td>- If file copy failed from the J-Marine NeCST.
Please check the connection between the J-Marine NeCST and this equipment and import again.</td></tr>
<tr><td> 
</td><td>- If a user chart file created on the J-Marine NeCST is corrupted.
After create a user chart file in the J-Marine NeCST, please Import again.</td></tr>
</table>

Error message	Cause/Action
	**- If the number of files reaches the upper bound.** This equipment can save until 500 user chart files. Please import again within the range of conditions.
	**- If there is not enough space on drive D.** After delete unnecessary files, please import again.

1.11 Check sea area that satellite communication is blocked on route [ECDIS][RADAR]

A sea area that satellite communication of Inmarsat FleetBroadband (JUE-251 / JUE-501) and Inmarsat Global Xpress (JUE-60GX) is blocked on a route can be checked. A phenomenon or matter that a earth station can not communicate with the satellite due to the shielding of the ship structure is called Blocking.

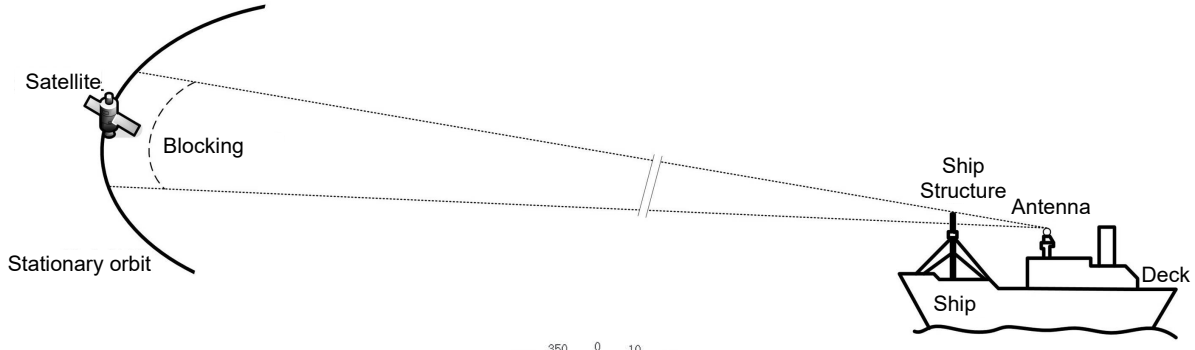
Note

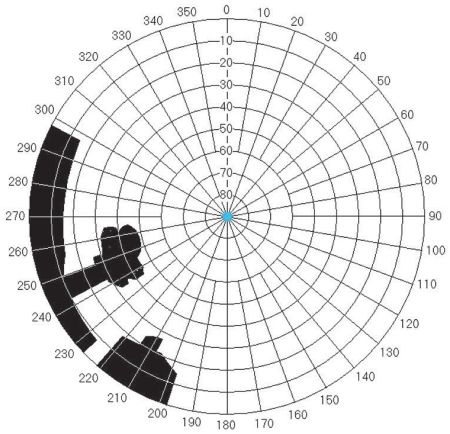
This feature predicts the existence of the hull structure between the communication antenna and the satellite by calculation. Therefore, it may be possible to communicate even it is displaying as blocked, or it may not be possible to communicate even it is displaying as unblocked.

The following factors may cause the prediction to deviate: Hull structure / satellite position / satellite operation status / heading direction / own ship position / planned route / GC(Great Circle) leg calculation accuracy / blocking chart file accuracy / data conversion accuracy of hull structure

1.11.1 Prediction of Blocking

Calculates the elevation angle and azimuth angle to the satellite using ship position. When satellite is hidden behind the ship structure, it's predicted that the satellite communications will be blocked and unable to communicate with satellite. Highlight to visualize the sea area on the route where blocking is predicted.





1.11.2 Check blocking sea area during route planning [ECDIS]

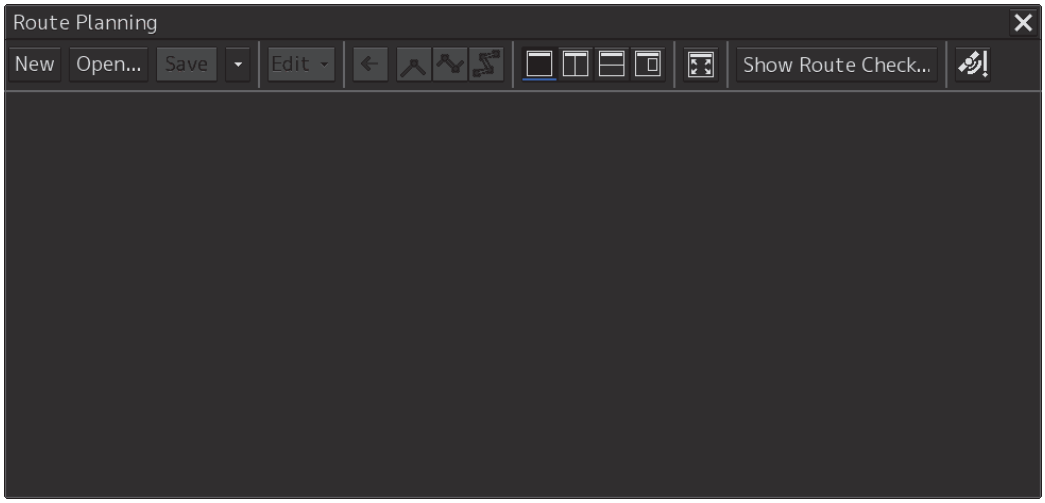
A sea area that satellite communication is blocked on a route can be checked during route planning.

1 Click the [Menu] button on the left tool bar.

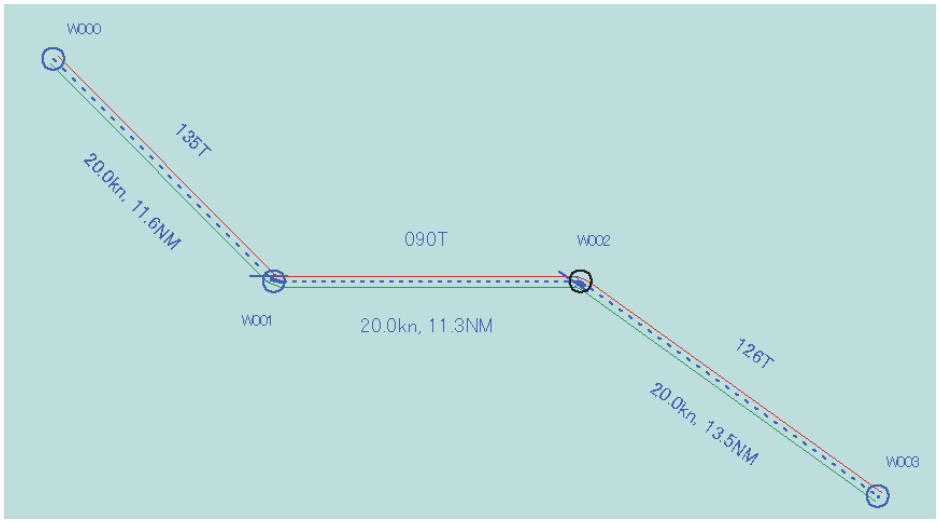
The menu is displayed.

2 Click the [Settings] button on the menu.

The Route Planning dialog is displayed.



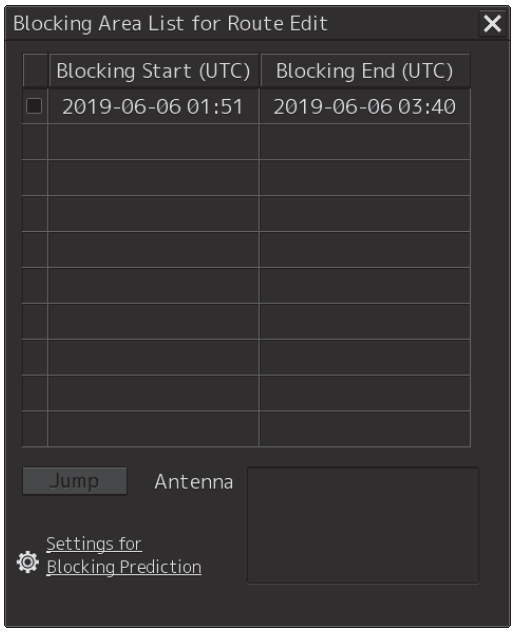
3 Create a route.



If a sea area that satellite communication is blocked is found, a badge will appear on the Route Planning dialog.

4 Click the badge on the Route Planning dialog.

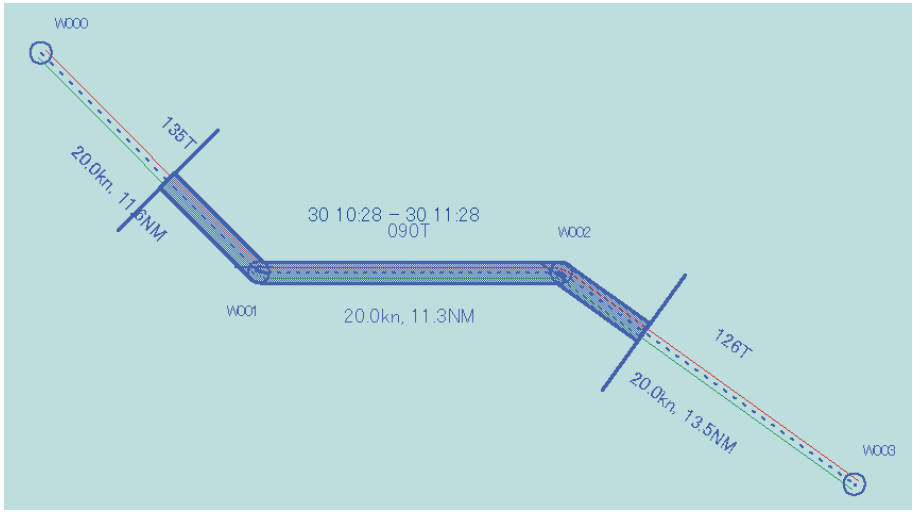
Blocking Area List for Route Edit dialog will shown, a date-time that satellite communication will be blocked could be confirm.



Note

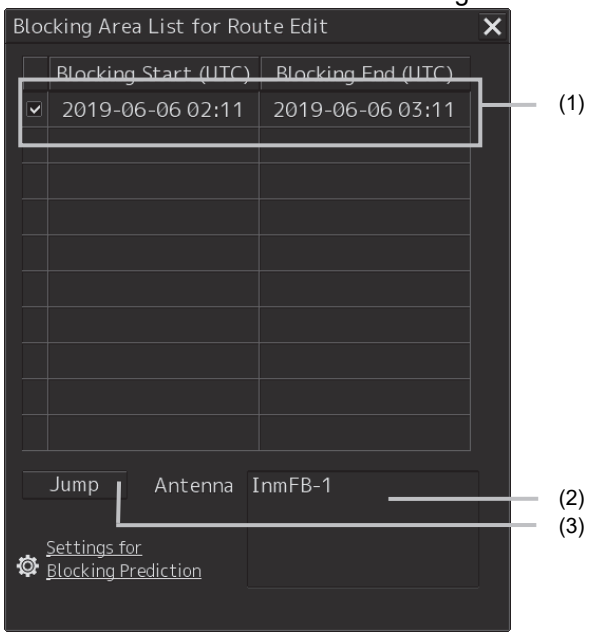
The number of displayed on the Blocking Area List for Route Edit dialog is 10 (maximum) from a sea area nearby ETA of W000. If satellite communication will not be blocked on the planning route, nothing is displayed.

A sea area that satellite communication will be blocked is highlighted during Blocking Area List for Route Edit dialog is displaying.



5 Click a date-time that satellite communication will be blocked.

A antenna name that satellite communication is blocked at the selected date-time on the list will be shown at the bottom of the dialigue.



(1) Blocking Start / Blocking End

A date-time that satellite communication is blocked will be shown in UTC. If there is no sea area that satellite communication is blocked, nothing is displayed.

(2) Antenna

An antenna name that is blocked at the selected date-time is displayed.If multiple date-time are selected, an antenna name is displayed.

Note

Name of antenna can only be changed at the installation. Its not able to change by user. If its needed to change, contact our head office, or a nearby branch or local office to request servicing.

(3) [Jump] button

A sea area that satellite communication is blocked on chart at the selected date-time will be displayed. The button can be clicked if only one Blocking Start / Blocking End date-time is selected on the list.

1.11.3 Check blocking sea area during route monitoring [ECDIS]

New blocking area is notified when the system forecasts it on route monitoring.

1 Click the [Menu] button on the left tool bar.

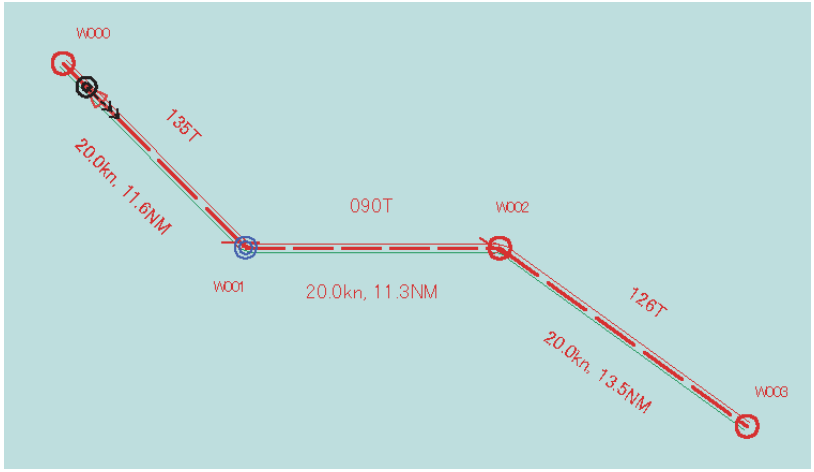
The menu is displayed.

2 Click the [Route Monitoring] button on the menu.

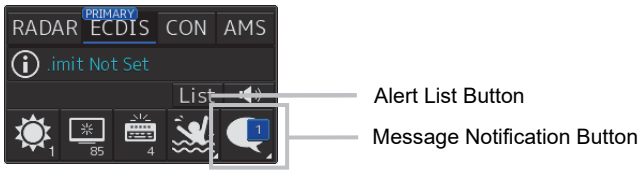
The Route Monitoring dialog is displayed.

3 Select the route file, and start monitoring.

Route monitoring is started. See instruction manual of ECDIS JAN-7201 / JAN-9201 for more details of starting route monitoring.

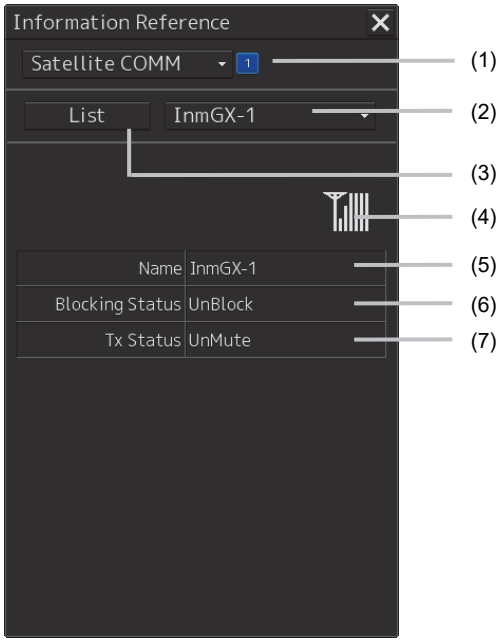


If a sea area that satellite communication is blocked is found, a unread count will count up on the Message Notification Button.



4 Click the Alert List Button or Message Notification Button.

Information Reference dialog will be shown, an unread count for satellite communication will appear on the dialog.



(1) Unread badge for satellite communication

If a new sea area that satellite communication is blocked is found, it will be added "1" as unread count. The unread count will be subtracted "1" after open Blocking Area List for Monitoring dialog by [List] button.

(2) Antenna name selector

Select antenna name to display a blocking status. This selector will be shown when the Information Reference dialog is displayed in small mode.

(3) [List] button

Open the Blocking Area List for Monitoring dialog that displays a list of satellite communication blocked on the monitoring route.

(4) Antenna RX sensitivity icon

The antenna RX sensitivity that communicate with satellite is shown as icon.

Icon	Description
	Satellite communication can work correctly
	Satellite communication can work correctly
	Satellite communication can work correctly
	Satellite communication can work correctly
	Satellite communication can work but unstable
	Satellite communication can work but unstable
	Satellite communication can not work

Note

If the icon is not shown, it may be disconnected from the satellite terminal. Confirm the connection by ethernet cable.

(5) Name

A antenna name is displayed.

Note

Name of antenna can only be changed at the installation. Its not able to change by user. If it is needed to be changed, contact our head office, or a nearby branch or local office to request servicing.

(6) Blocking Status

It will be displayed whether communication blocking has occurd between the antenna and the communication satellite.

Status	Description
UnBlock	The antenna and communication satellite are in a positional relationship where they can communicate properly
Blocking	The antenna may be shielded from communication satellite, it may not be able to communicate properly.

Note

If the antenna and comunication satellite are in a positional relationship where they can communicate properly, communication may be unstable or uncommunicatable by weather or searching satellite feature.

Note

This feature displays "UnBlock" when at least one communication satellite is visible from the antenna. However, the communication will be interrupted while the communication satellite is switched to an unshielded satellite from shielded one.

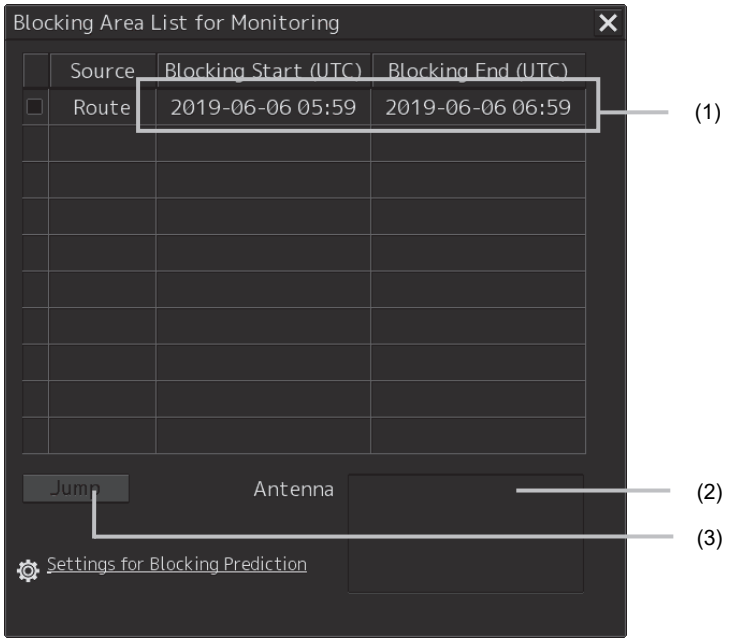
(7) Tx Status

It will be shown only for Inmarsat Global Xpress JUE-60GX. The RF radiation hazard area of the Inmarsat Global Xpress is as long as 26 meter from the antenna, JUE-60GX is able to control not to transmit radio waves to the set area. It can not communicate with the satellite while suppressing transmission of rado waves.

Status	Description
UnMute	The antenna does not point to the transmission suppression area, ant it can transmit.
Mute	The antenna points to the transmission suppression area, and suppresses the transmission.

5 Click the [List] button.

Blocking Area List for Monitoring dialog will shown, a date-time that satellite communication will be blocked could be confirm.



(1) Blocking Start / Blocking End

A date-time that satellite communication is blocked will be shown in UTC. If there is no sea area that satellite communication is blocked, nothing is displayed. These date-time is calculated ETA from current time, not a planned route.

(2) Antenna

A antenna name that is blocked at the selected date-time is displayed.If multiple date-time are selected, a antenna name is displayed.

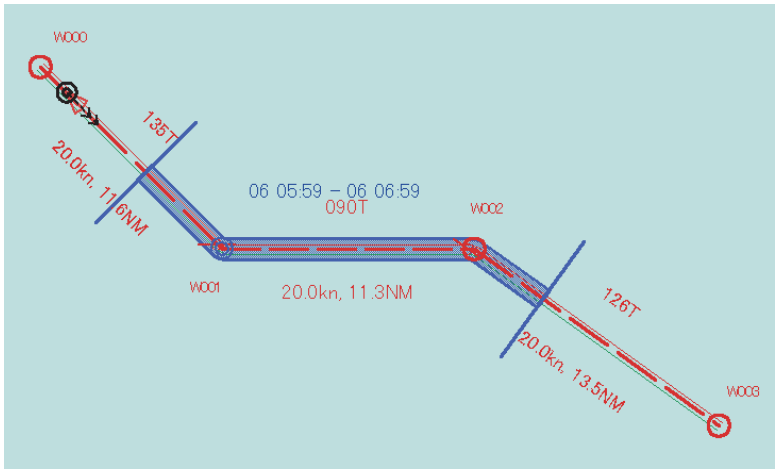
Note

Name of antenna can only be changed at the installation. Its not able to change by user. If its needed to change, contact our head office, or a nearby branch or local office to request servicing.

(3) [Jump] button

A sea area that satellite communication is blocked on chart at the selected date-time will be displayed. The button can be clicked if only one Blocking Start / Blocking End date-time is selected on the list.

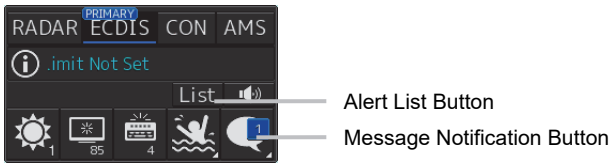
A sea area that satellite communication will be blocked will be highlighted during Blocking Area List for Monitoring dialog is displaying.



1.11.4 Check that satellite terminal communicates with satellite [ECDIS] [RADAR]

A status whether satellite communication is blocked could be confirmed.

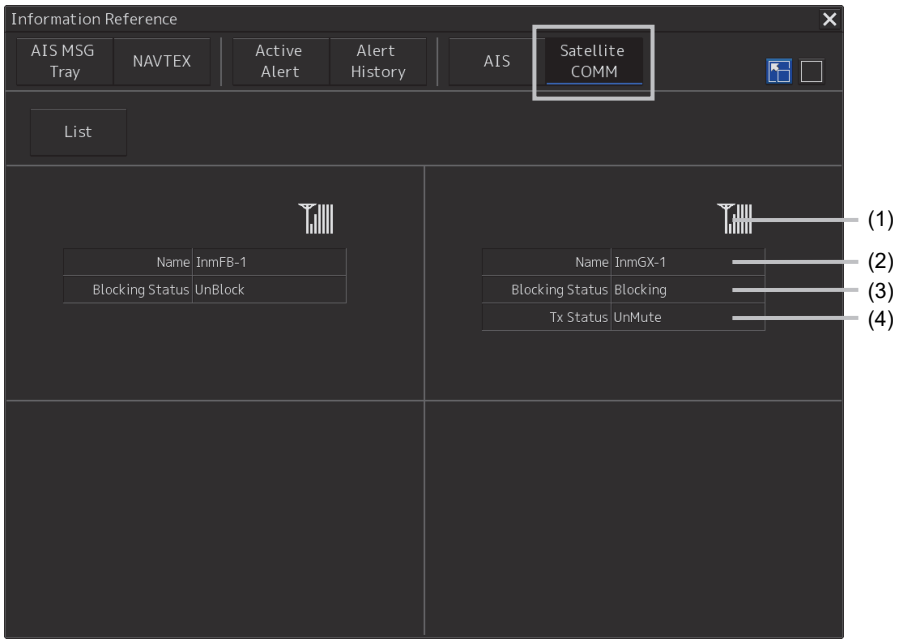
1 Click the Alert List Button or Message Notification Button.



Information Reference dialog is shown.

2 Click the [Satellite COMM] button on the dialog.

Whether a communication is blocked on each antenna that is monitoring the blocking of satellite communication could be confirmed.



(1) Antenna RX sensitivity icon

The antenna RX sensitivity that communicate with satellite is shown as icon.

Icon	Description
	Satellite communication can work correctly
	Satellite communication can work correctly
	Satellite communication can work correctly
	Satellite communication can work correctly
	Satellite communication can work but unstable
	Satellite communication can work but unstable
	Satellite communication can not work

Note

If the icon is not shown, it may be disconnected from the satellite terminal. Confirm the connection by ethernet cable.

(6) Name

An antenna name is displayed.

Note

Name of antenna can only be changed at the installation. Its not able to change by user. If it is needed to be changed, contact our head office, or a nearby branch or local office to request servicing.

(3) Blocking Status

It will be displayed whether communication blocking has occurd between the antenna and the communication satellite.

Status	Description
UnBlock	The antenna and communication satellite are in a positional relationship where they can communicate properly
Blocking	The antenna may be shielded from communication satellite, it may not be able to communicate properly.

Note

If the antenna and comunication satellite are in a positional relationship where they can communicate properly, communication may be unstable or uncommunicatable by weather or searching satellite feature.

Note

This feature displays "UnBlock" when at least one communication satellite is visible from the antenna. However, the communication will be interrupted while the communication satellite is switched to an unshielded satellite from shielded one.

(4) Tx Status

It will be shown only for Inmarsat Global Xpress JUE-60GX. The RF radiation hazard area of the Inmarsat Global Xpress is as long as 26 meter from the antenna, JUE-60GX is able to control not to transmit radio waves to the set area. It can not communicate with the satellite while suppressing transmission of rado waves.

Status	Description
UnMute	The antenna does not point to the transmission suppression area, ant it can transmit.
Mute	The antenna points to the transmission suppression area, and suppresses the transmission.

1.11.5 Change settings for important antenna and condition of blocking notification [ECDIS] [RADAR]

It could be able to select a monitored antenna, and change the notification condition.

1 Click the [Menu] button on the left tool bar.

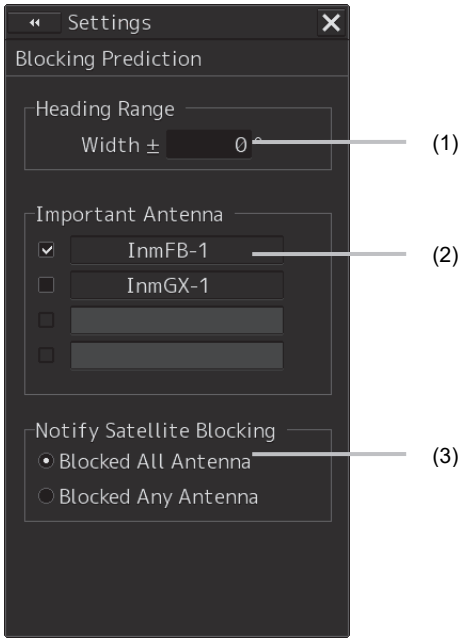
The menu is displayed.

2 Click the [Settings] button on the menu.

The Settings dialog is displayed.

3 Click the [Blocking Prediction] sub-menu on the Settings dialog.

The Blocking Prediction page is displayed.



(1) [Heading Range] input box

This feature predicts that the antenna can not communicate with the satellite due to an obstacle. Then, the ship's motion and drift (the deviation between COG and heading). In this setting, specify the maximum drift range to be used for prediction.

(2) [Important Antenna] selector

Select the antenna that is needed for blocking prediction. For unselected antennas, its not predicted whether satellite communication will be blocked on the route.

Note
Name of antenna can only be changed at the installation. Its not able to change by user. If its needed to change, contact our head office, or a nearby branch or local office to request servicing.

(3) [Notify Satellite Blocking] selector

Select conditions to notify the user when communication with the satellite may be blocked by multiple antennas selected as the important antenna.

Status	Description
Blocked All Antenna	Notifies that communication with the satellite may be blocked by ALL the antennas selected as important antennas.
Blocked Any Antenna	Notifies that communication with the satellite may be blocked by ONE OF the antennas selected as the important antennas.

1.11.6 Change satellite data file [ECDIS] [RADAR]

It is necessary to update the satellite data if the data of the communication satellite is changed. Contact your dealer or distributor whether the satellite data has been changed.

1 Connect a USB memory that contains new satellite data file (filename extention: *.jrc).

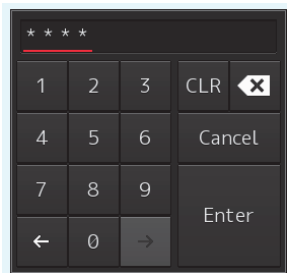
2 Click the [Menu] button on the left tool bar.

The menu is displayed.

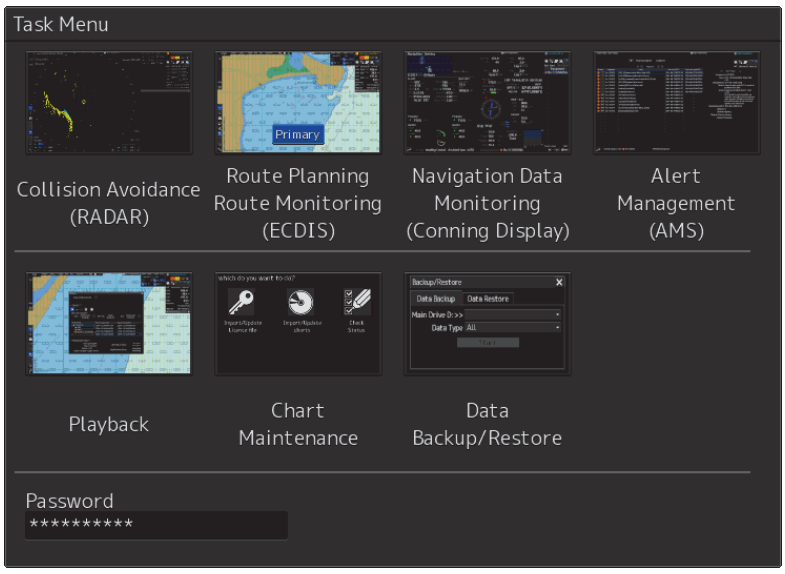
3 Click the [Code Input] button on the menu.

The Code Input dialog is displayed.

4 Input "9999", and click the [Enter] button.



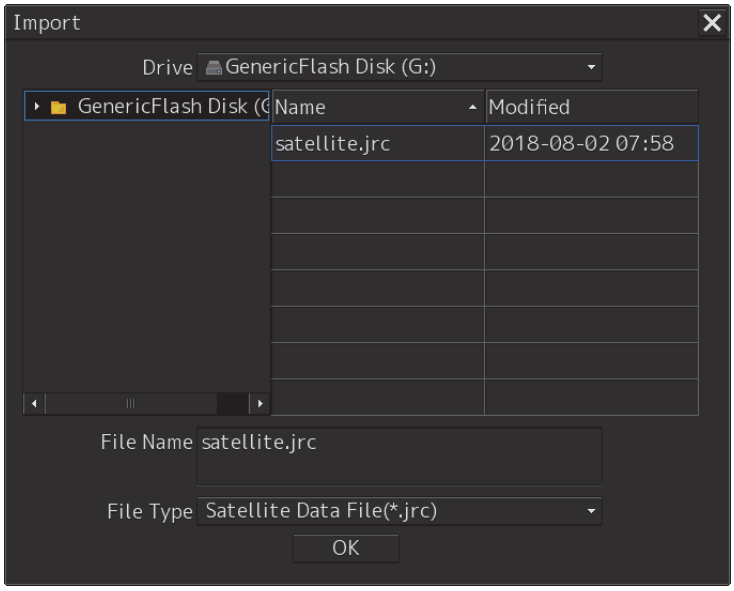
Return to the Task Menu.



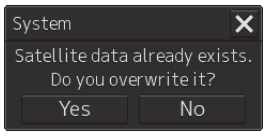
5 **Input "1310", and click the [Enter] button.**

The Import dialog is displayed.

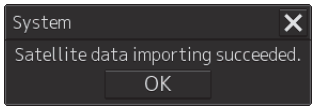
6 **Select the new satellite data file (filename extention: *.jrc), and click [OK] button.**



The overwrite confirmation dialog is displayed. Click the [Yes] button.



A dialog is displayed that the import was successful.



1.12 Safety Zone Viewer (Option) [RADAR]

Safety Zone Viewer(SZV) is a function that assists in avoiding manoeuvres. It displays obstacle zone by target(OZT) calculated based on TT/AIS data and facilitates the search for safe navigation routes. The OZT is useful for monitoring other ships, as the presence of the OZT on your ship's course indicates a potential collision in the future. In addition, when keeping out of way of dangerous ship, you can effectively use it for deciding the route by referring to the OZT.

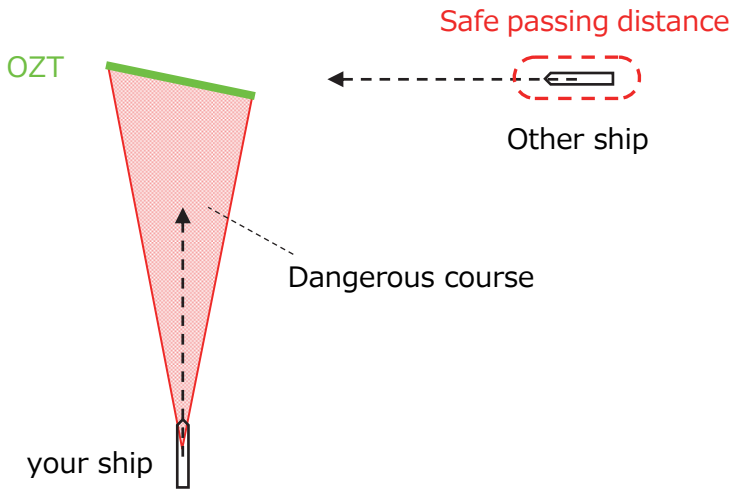
Note:

This function is based on the information of TT/AIS, so it may not be accurate due to errors in the TT/AIS information or information delays. In addition, the calculation of the OZT is based on the assumption that the other ship is proceeding straight ahead at the course and speed of TT/AIS and that your ship is maintaining its current speed. If the speed or course of the other ship changes or if your ship changes its speed, the OZT will change. Therefore, making the final navigation decision based only on the radar display information may cause accidents such as collisions or running aground. The final navigation decision must always be made by the operator him/herself.

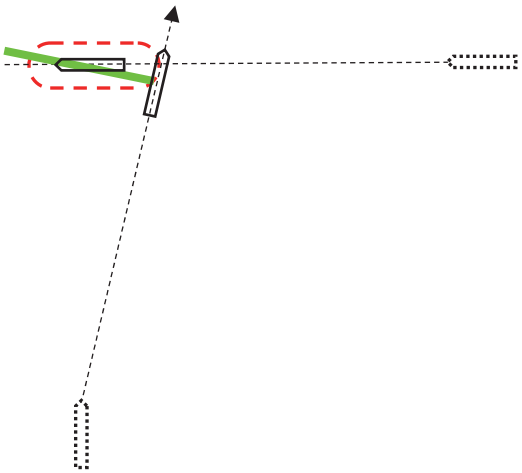
1.12.1 About the obstacle zone by target (OZT)

Knowing where there is a risk of collision is very useful in maneuvering decisions. The OZT indicates where other vessels can affect the progress of your ship, i.e., areas where there is a high risk of collision if your ship proceeds there, allowing you to intuitively determine the dangerous course of your vessel.

Specifically, as shown in the figure below, if you set a distance around the other ship that you do not want to approach any further (hereafter referred to as safe passing distances), The OZT indicates the area where your ship will be closer to the other ship than this safe passing distances. Therefore, as shown in this figure, when the OZT exists in the course of your ship, the risk of collision with the other ship is high.



It is also possible to use the OZT as a guide when deciding on a course for avoidance manoeuvre, since avoiding the OZT, as shown in the figure below, allows your ship to maintain a safe passing distance from the other ship.



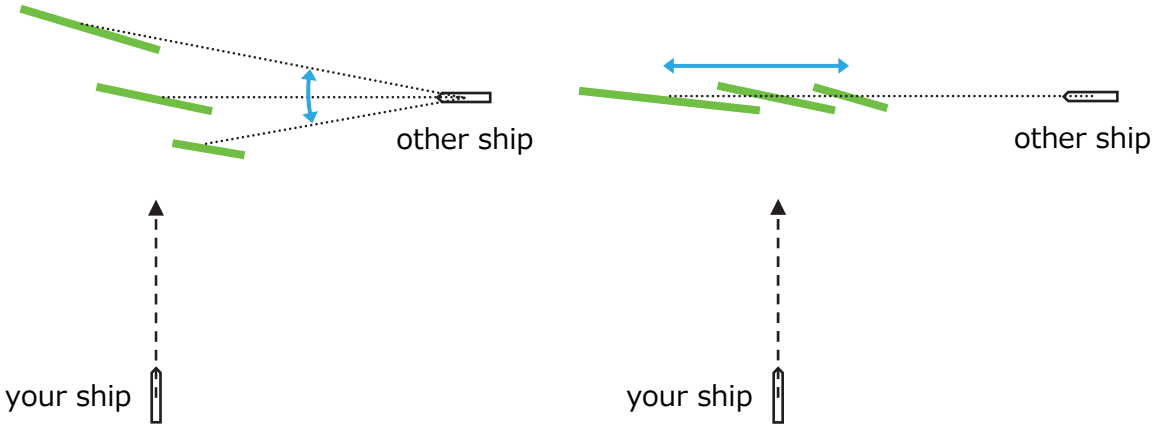
The safe passing distance can be changed in the menu. (Refer to 1.12.9) However, the OZT does not take into account the size of your ship and calculates it based on the ship's CCRP position. If the ship is a large vessel, it is advisable to set a large safe passing distance with a margin or to avoid the other ship so that it is sufficiently far from the OZT.

The safe passing distance is placed in the same direction as the other ship's course, but the course of a TT target at anchor is not stable. Please note that the safe passing distance may be calculated in a different direction to the actual direction of the other ship.

The OZT is calculated based on the following information, assuming that the other ship will proceed straight at the same speed.

- Other ship's position, course and speed
- Your ship’s speed

Therefore, if these information change, the position and size of the OZT will change. The figure below illustrates how the OZT changes when the other ship’s course and speed change. Please note that the change in OZT depends on the position of your ship and the other ship.

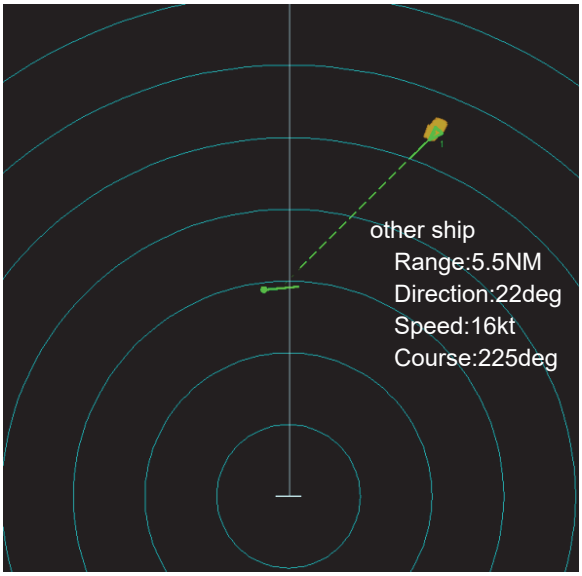


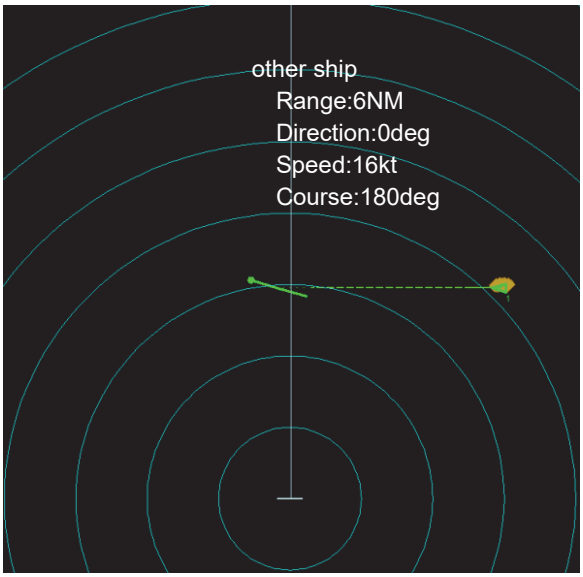
Changes of the course of the other ship

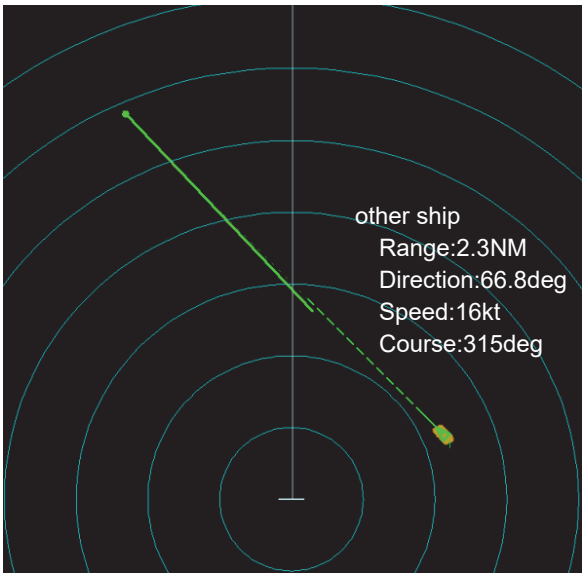
Changes of the speed of other ship

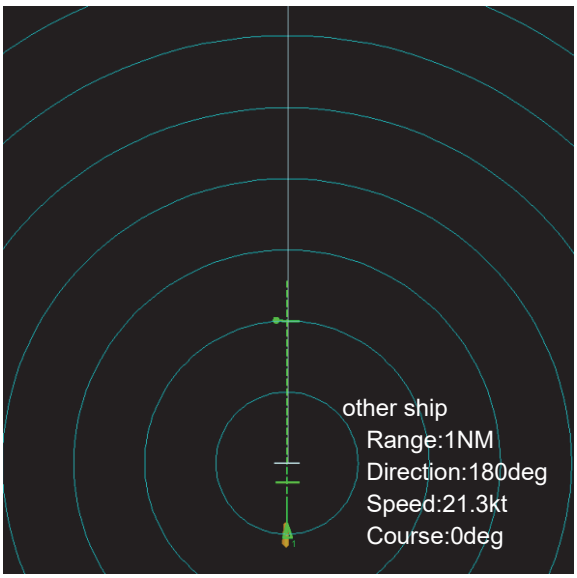
1.12.2 Example of OZT display

The following is an example of the typical OZT display. In all cases, your ship's speed is 16 kts. The actual OZT display depends on the information shown in 1.12.1 and the size of the safe passing distance.



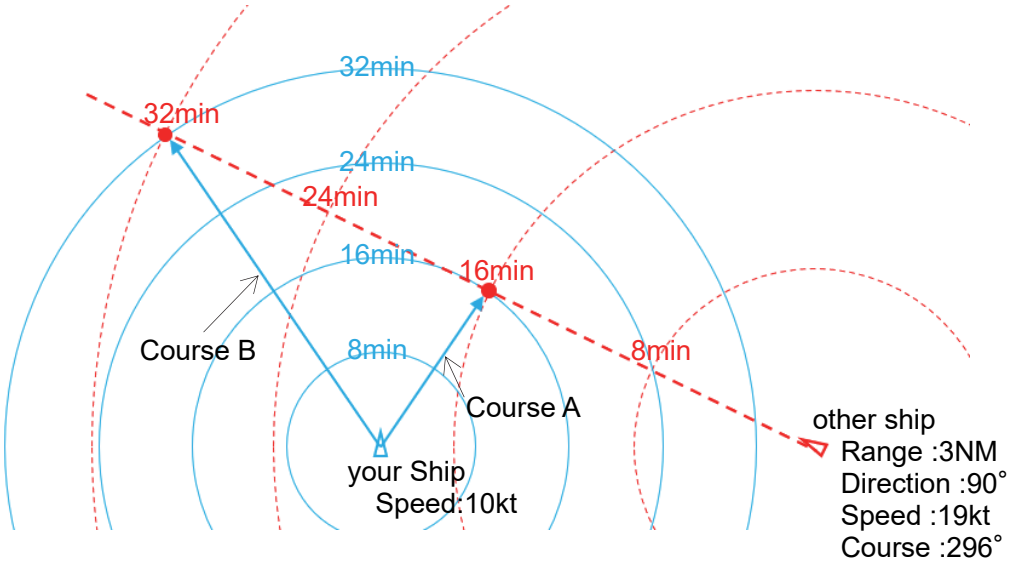




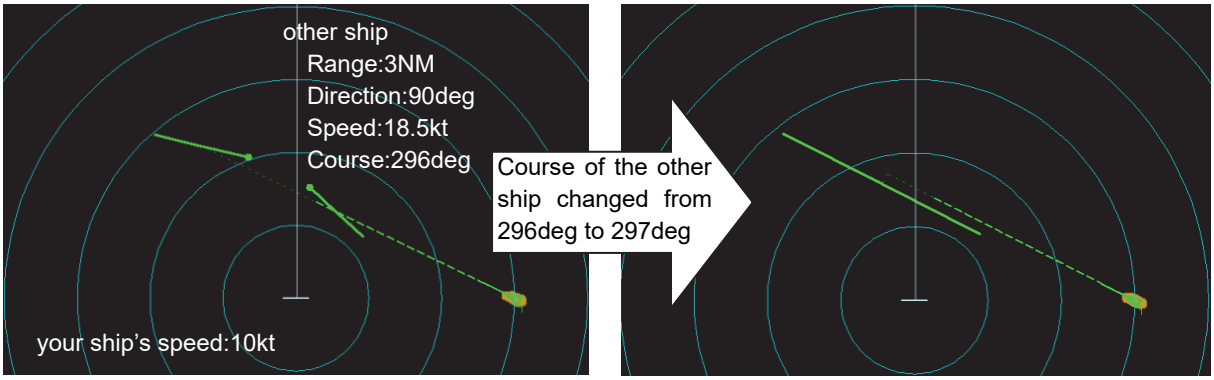


The following is an example of a special OZT display.

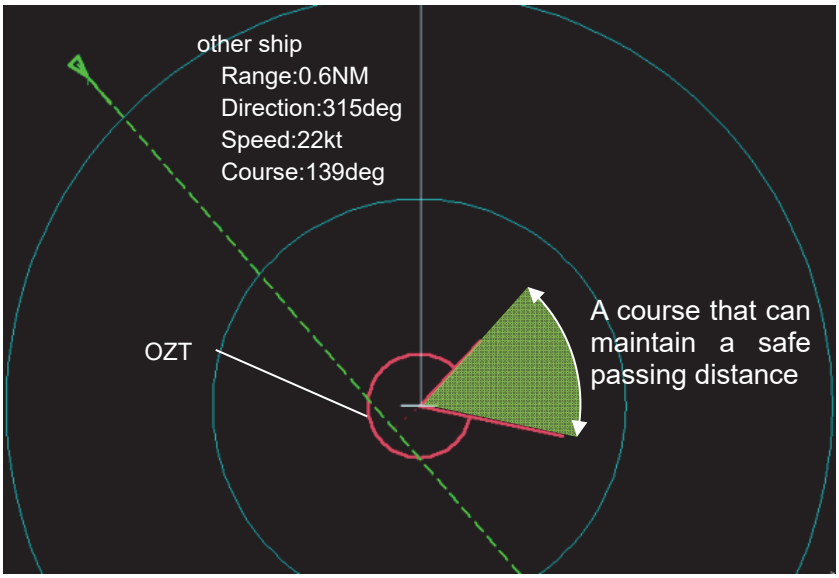
When the other ship is faster than your ship, there may be two paths for your ship to collide with it. The following figure shows an example. The concentric circles with solid blue lines show the position of your ship every 8 minutes. The concentric circles with red dotted lines show the position of the other ship every 8 minutes. You can see that the red and blue circles intersect at 16 minutes on the other ship's course. Similarly, the circles at 32 minutes also intersect each other. This indicates that if your ship is on course A, it will collide with the other ship 16 minutes later, and if it is on course B, it will collide 32 minutes later.



The left side of the figure below shows the collision risk area in this situation. It looks as if you could pass between the two OZTs, but a slight change in your own speed or that of another vessel's course or speed will cause the two separate OZTs to be connected, as shown in the figure on the right. Note that it may not be possible to maintain a sufficient safe passing distance between the two ships.



When the distance to the other ship is so close that there is little safe course to avoid it, the OZT may be displayed in an arc as shown below. This indicates that the only way to maintain a safe passing distance from the other ship is to proceed to a course without an arc.

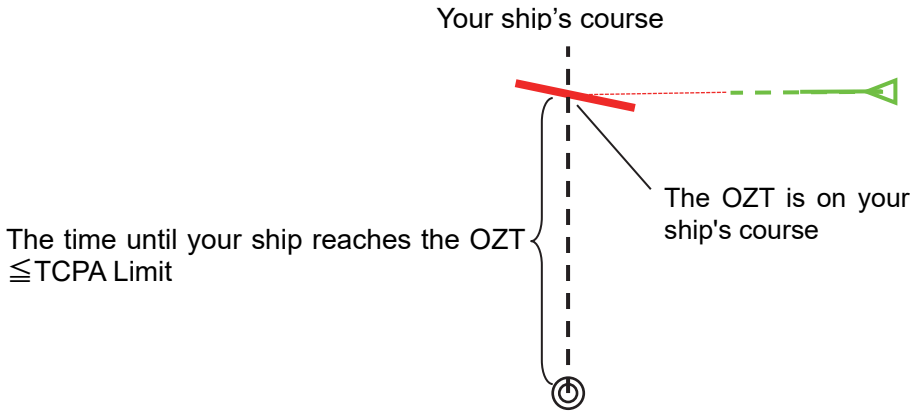


Your ship will not collide with the other ship that is faster than your ship and is moving away from your ship. Therefore, OZT does not exist on such a ship. A ship that does not display OZT can be judged to have a relatively low collision risk.

1.12.3 “Need to Change Course” alarm

When the OZT meets the following two conditions, “Need to Change Course” alarm is raised.

- The OZT is on your ship's course
- The time until your ship reaches the OZT is less than the TCPA limit

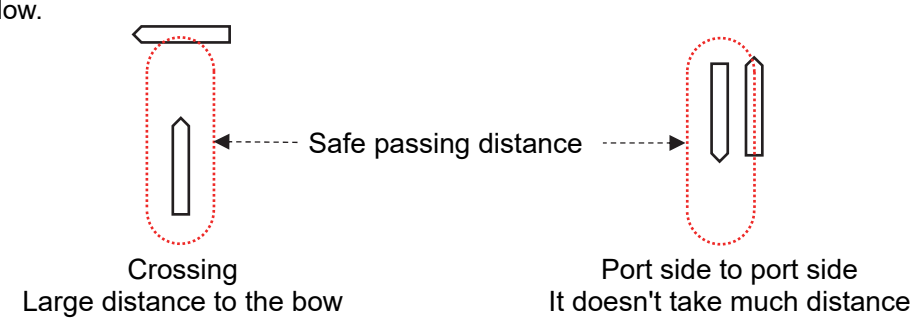


Dangerous OZT is flashing red and an audible alarm. Clicking the [ALART ACK] button will stop the flashing and audible alarm, but the OZT will still be displayed in red for the duration of the dangerous situation.

Similarly, there is the CPA / TCPA alarm that detects the danger of collision, so the criteria for the CPA / TCPA alarm and “Need to Change Course” alarm are shown in the table below.

Criteria	CPA / TCPA Alarm	“Need to Change Course” Alarm
Distance	The distance to closest point of approach (DCPA) is not exceeding the CPA limit. The CPA limit is an equidistance (circle) around the ship.	The distance between the other ship and your ship is not exceeding the safe passing distance. The safe passing distance is an oval centered on the other ship
Time	The time to closest point of approach (TCPA) is less than or equal to the TCPA limit.	The time until the distance between the other ship and your ship becomes equal to the safe passing distance is not exceeding the TCPA limit.

The main difference between the two alarms is the distance criteria: the CPA/TCPA alarm is circular, whereas “Need to Change Course” alarm is oval. “Need to Change Course” alarm takes into account the position of the two vessels and gives the safe passing distance as an oblong, as shown in the diagram below.

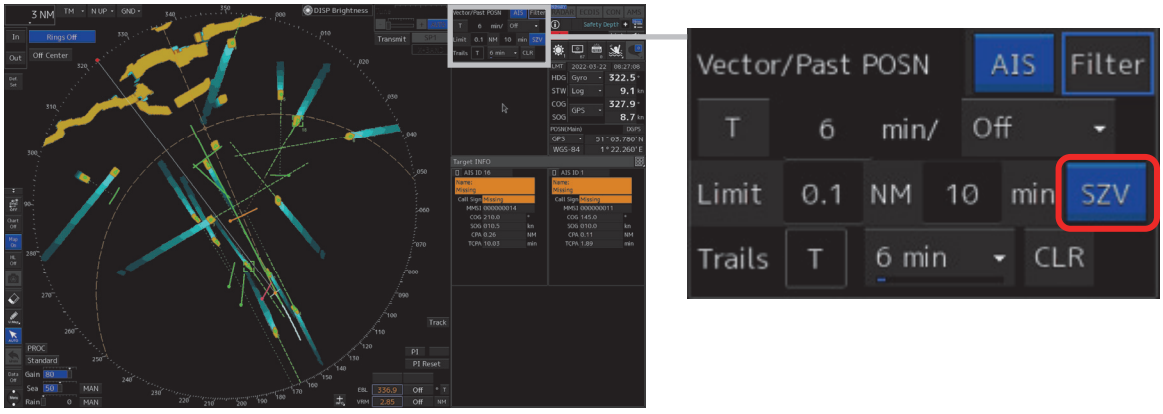


Therefore, by setting the CPA limit to a value smaller than the safe passing distance, it is possible to suppress unwanted CPA / TCPA alarms in congested waters and detect the danger of collision with “Need to Change Course” alarm. See 1.12.9 for details.

1.12.4 Turning on the SZV function

Click the [SZV] button on other ship information area at the top right of PPI.

The button will turn blue and OZT will be displayed.



Note: The [OZT] button is disabled when the vector display of TT / AIS is in relative vector mode or when trial maneuver is used. Change the true vector mode and turn off trial maneuver, and then turn on OZT.

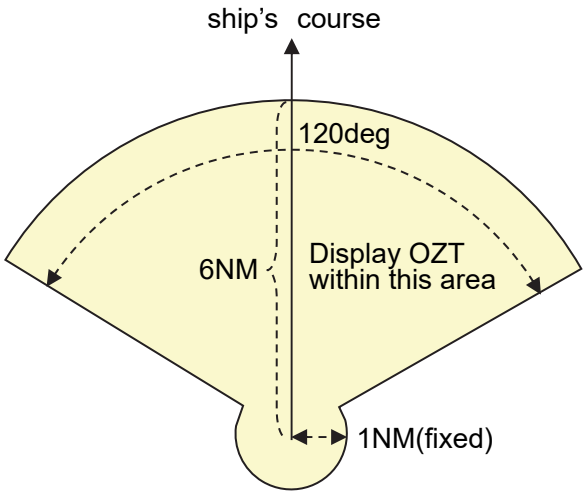
If the ship is in the following conditions, the OZT of the ship will not be displayed.

- Vessels for which no information on position, course or speed is available.

In the following cases, the OZT of all ships will not be displayed.

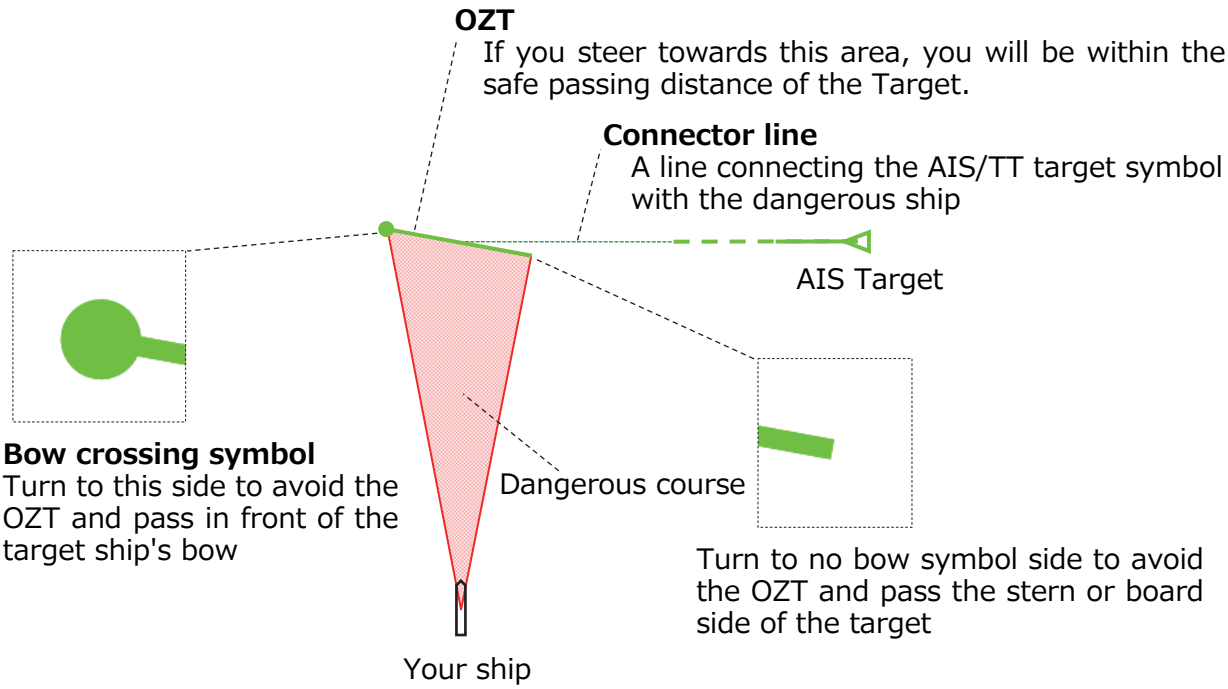
- The your ship's speed is not available or less than 1kn
- The TT/AIS vector display is in relative vector mode.
- Using a trial manoeuvre

Since it is unlikely that the ship will head backward, OZT is displayed within the fan-shaped area based on the ship's course, as shown in the figure below in the initial state. If you want to change the display area, please refer to 1.12.7.

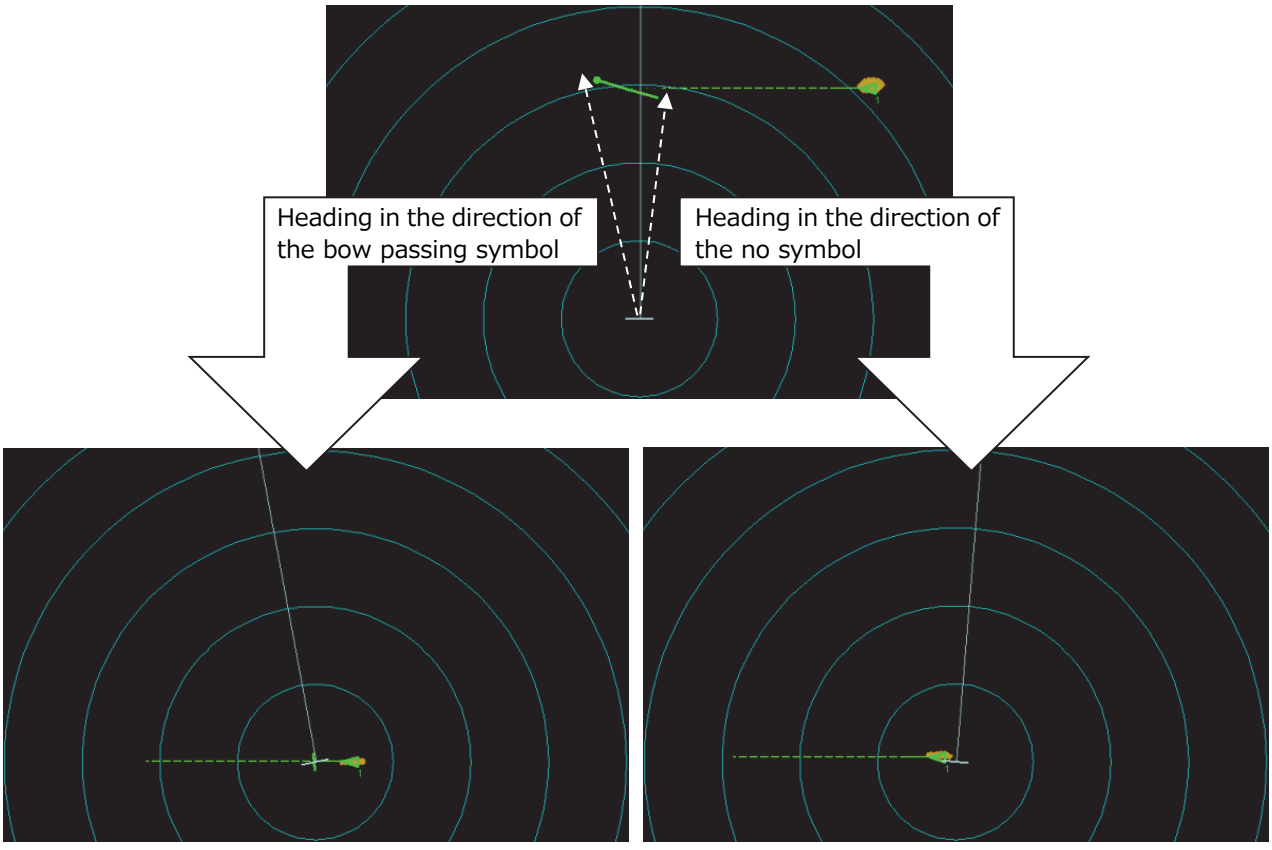


1.12.5 How to use the SVZ function

The SZV function provides the information shown in the diagram below.



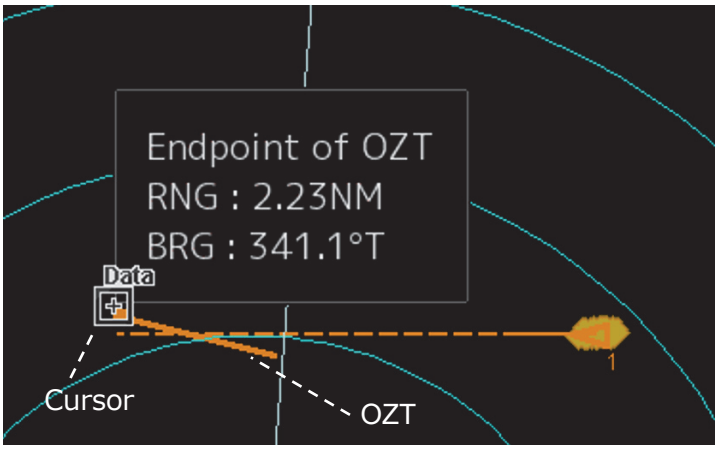
Examples of avoidance manoeuvres with reference to OZT is shown below.



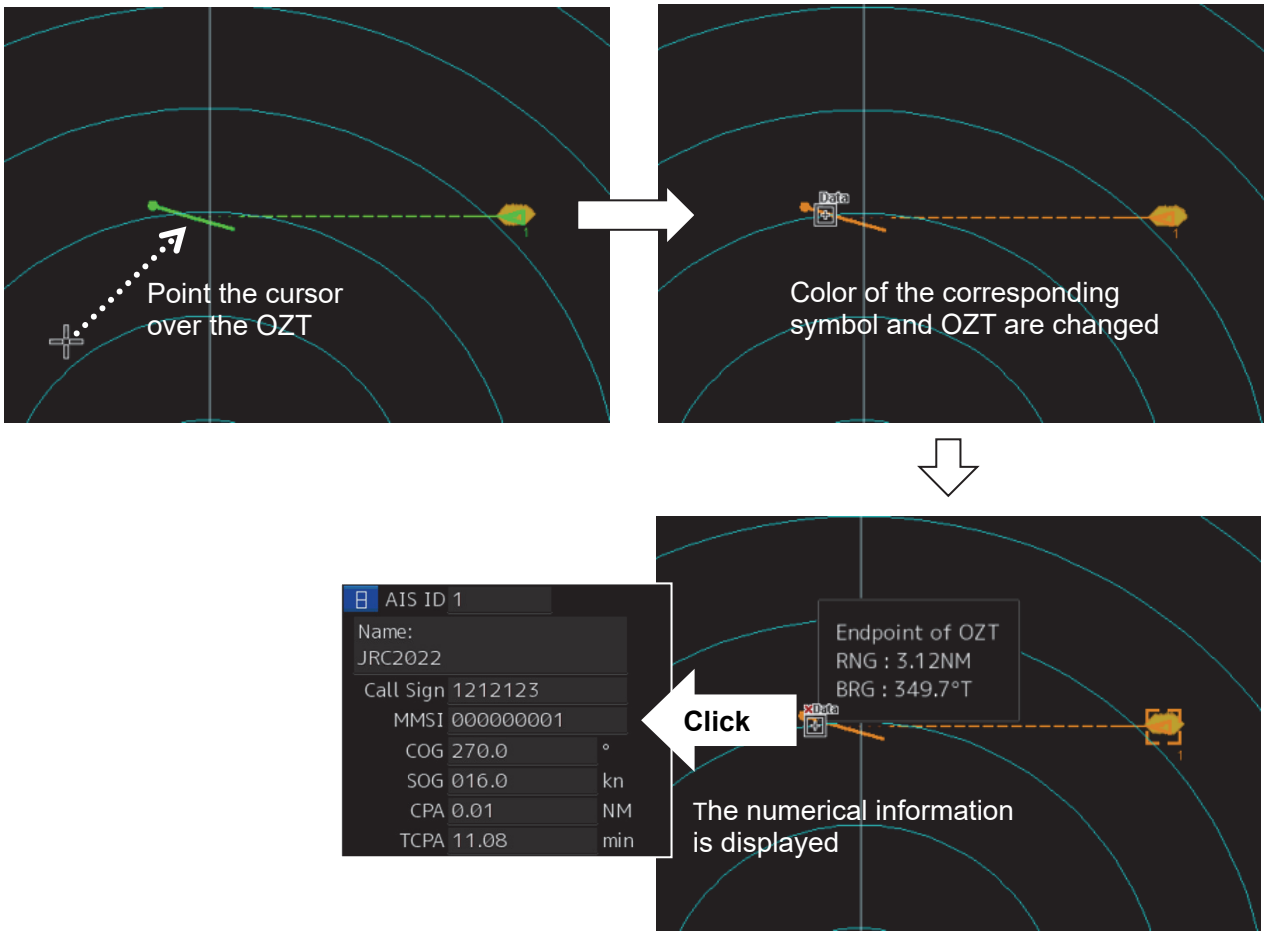
Your ship passes in front of the target and avoids it

Your ship passes behind the target and avoids it

As shown in the figure below, it is possible to display the distance and direction by pointing the cursor over the end point of the OZT.



There are multiple targets and you don't sure which OZT belongs to which Target, you can change the color of the corresponding symbol and OZT by pointing the cursor over the OZT or AIS/TT symbol as shown in the figure below.
Furthermore, by left-clicking on OZT, the numerical information of AIS/TT is displayed, and the OZT of the target for which you have displayed the numerical information will be displayed in a different color. You can also cancel the numerical display by left-clicking on OZT.

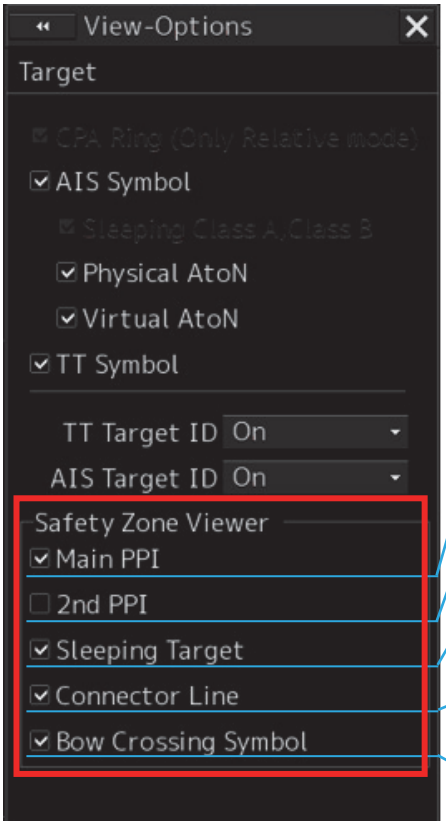


1.12.6 Display settings for the SZV function

1 **Click on the [Menu] button on the Left Tool Bar.**
A menu is displayed.

2 **Select [View] – [Options] – [Target] in the menu.**
The [Target] dialog is displayed.

3 **Click the checkbox for each setting.**
The settings for each item are shown below.



Check “Main PPI” to display the OZT on Main PPI.

Check “2nd PPI” to display the OZT on 2nd PPI. (JMR-9200 series only)

Check “Sleeping Target” to display the OZT of the sleeping AIS target. The OZT of the TT target and the activated AIS target is always displayed.

Check “Connector Line” to display the auxiliary line connecting the TT / AIS symbol and OZT.

Check “Bow / Stern Symbol” to display the bow passing symbol at the endpoint of OZT.

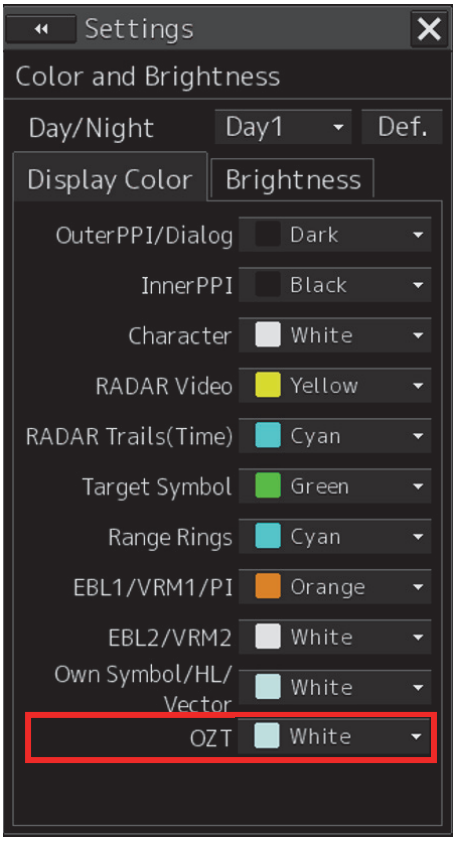
1.12.7 Changing the color/brightness of OZT

1 Click on the [Menu] button on the Left Tool Bar.
A menu is displayed.

2 Select [Settings] – [Color and Brightness] in the menu.
The [Color and Brightness] dialog is displayed.

3 Click the [Display Color] tab and select the color in the [OZT] menu.

4 Click the [Display Brightness] tab and select the brightness in the [OZT] menu.



Settable Color	Settable Brightness
White [Default]	Level0(Dark)
Cyan	Level1
Green	Level2
Orange	Level3
Target Symbol *1	Level4(Light)
	Target Symbol *1 [Default]

*1 Selecting "Target Symbol" synchronizes the colour/brightness of the OZT with the Target Symbol..

1.12.8 Changing the OZT display area

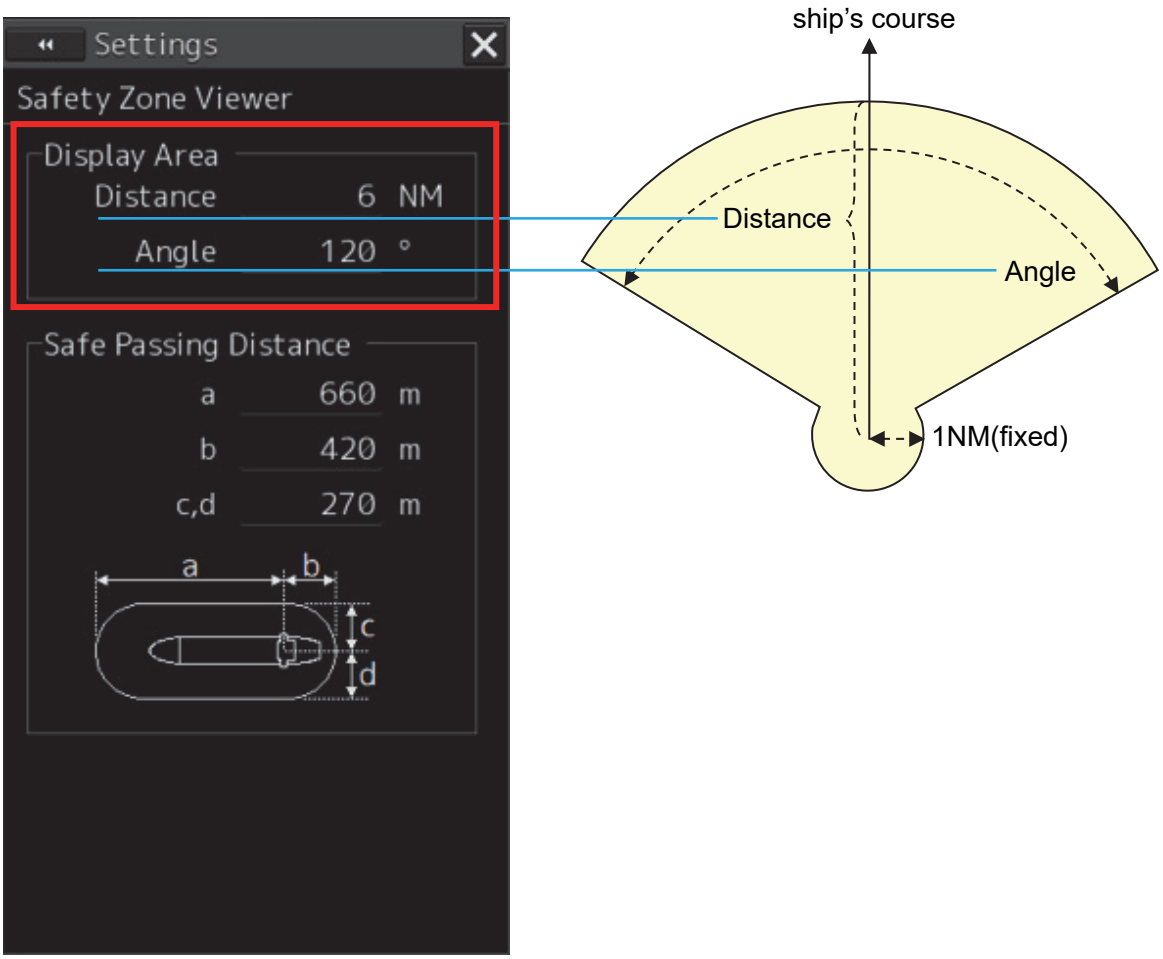
By default, the OZT is shown in a fan-shaped range of up to 6NM away, at 60 degrees to the left and right based on the ship's course direction. If you want to see the OZT further away, or if you want to reduce the angle range so that the extra OZT is not displayed, please change the following settings.

1 **Click on the [Menu] button on the Left Tool Bar.**
A menu is displayed.

2 **Select [Settings] – [Safety Zone Viewer] in the menu.**
The [Safety Zone Viewer] dialog is displayed.

3 **Enter the [Distance] in [Display Area] to change the display distance of OZT.**

4 **Enter the [Angle] in [Display Area] to change the display angle rang of OZT.**



Note: [Angle] is the sum of the angles in the port and starboard directions with respect to your ship's course.

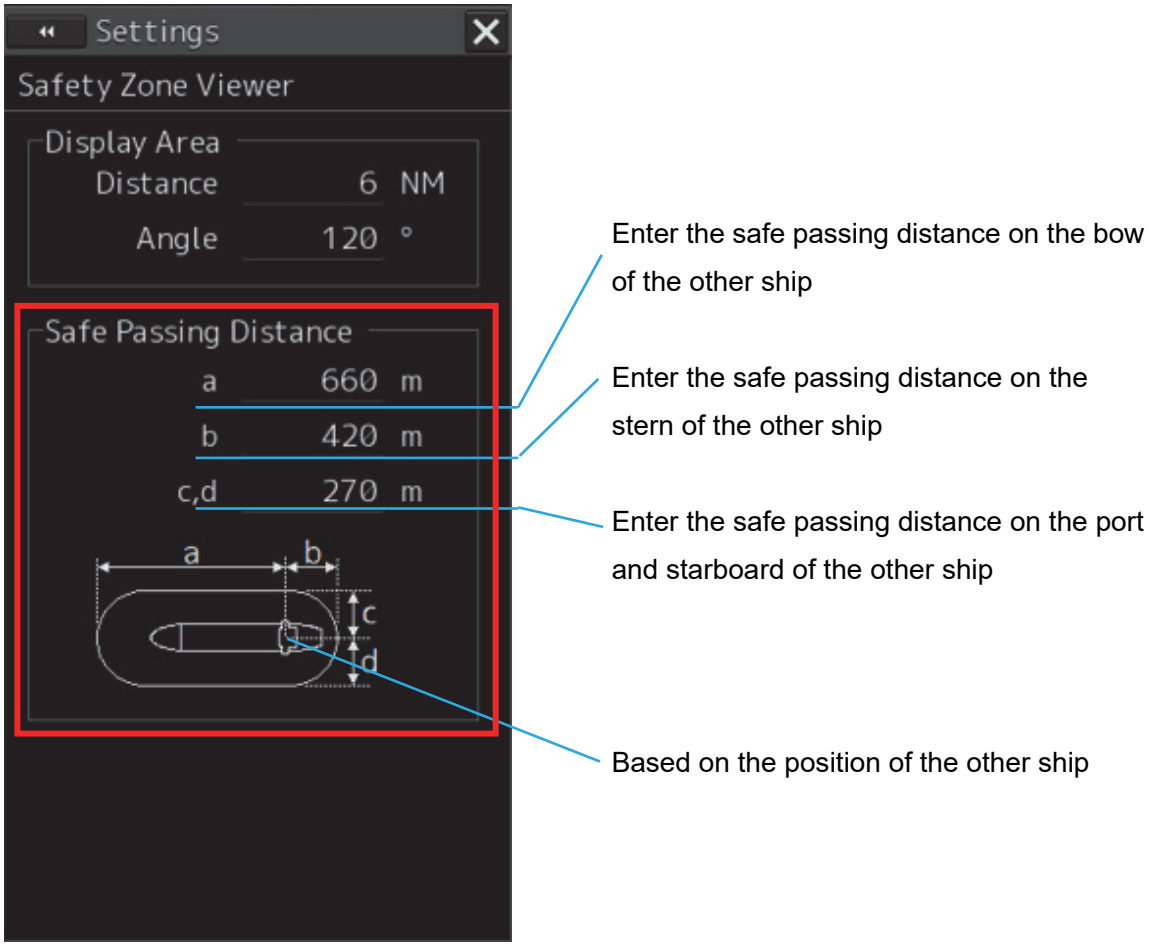
1.12.9 Setting the safe passing distance

A safe passing distance is set around the other ship, based on the ship's position. The OZT indicates where the ship will invade within the safe passing distance. If the safe passing distance is not set properly, the OZT may be too large or too small for the actual danger area. Please be careful when changing the settings.

1 **Click on the [Menu] button on the Left Tool Bar.**
A menu is displayed.

2 **Select [Settings] – [Safety Zone Viewer] in the menu.**
The [Safety Zone Viewer] dialog is displayed.

3 **Enter each distance in [Safe passing distance].**



As described in 1.12.3, it is recommended that the CPA limit be smaller than the safe passing distance. Specifically, the CPA limit should be smaller than the smallest of the safe passing distances a, b, c and d. With the default values above, the smallest safe passing distance is 270 m (= 0.15 NM), so it is recommended to set the CPA limit to 0.1 NM.
This recommended setting is based on the premise that the risk of collision is mainly determined by the OZT. It is possible to reduce unnecessary CPA/TCPA alarm by using these settings. If the collision risk is mainly determined by CPA/TCPA alarm, set the CPA limit a value with a margin.

アスベストは使用しておりません
Not use the asbestos

For further information,contact:

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CODE No.7ZPNA4579G JUN. 2022 Edition 8