

6.1.8 How to set tracks recording method and interval

In order to display tracks for your own ship, as well as other vessels, the system records the position of your ship and other ships. A shorter recording interval gives clearer, smoother track lines, however the total time available for recording is reduced. On the other hand, a longer interval gives rougher tracks with longer recording time. When the track memory becomes full, the oldest tracks are deleted to make room for new tracks.

How to change the recording method for own ship's track

1. Right-click within the radar effective radius to show the [CURSOR] menu.
2. Select [TRACK ON-OFF].
3. Left-click within the radar effective radius to cycle through the recording methods, indicated at the top-left of the screen.
The indication cycles through the recording methods in the following order:
[TRACK INTERVAL 1] () → [TRACK INTERVAL 2] () → [HALT] () → [TRACK INTERVAL 1] ()....
4. Right-click to complete the procedure.

To change the settings for [TRACK INTERVAL 1] or [TRACK INTERVAL 2], follow the procedure outlined in "How to change the recording interval for own ship's track" on page 6-13.

How to change the recording interval for own ship's track

You can change the settings for the track recording interval to suit your requirements.

1. Open the menu.
2. Select [MARKS•PLOTTER].
3. Select [TRACK].
4. Select [OWN TRACK SETTINGS].
5. Select [TRACK INTERVAL 1] or [TRACK INTERVAL 2] as appropriate.
6. Select [TIME] or [RANGE]. The cursor moves to the associated setting.
7. Spin the scrollwheel to change the time or range, then left-click.
8. Close the menu.

How to change the recording interval for other ship's track

You can change the settings for the track recording interval to suit your requirements.

1. Open the menu.
2. Select [MARKS•PLOTTER].
3. Select [TRACK].
4. Select [OTHER TRACK SETTINGS].
5. Select [OTHER TRK REC INTVL].
6. Select [TIME] or [RANGE]. The cursor moves to the associated setting.
7. Spin the scrollwheel to change the time or range, then left-click.
Time and range are set to [0], the system records tracks at 1 second intervals.
8. Close the menu.

6.1.9 How to delete own ship tracks

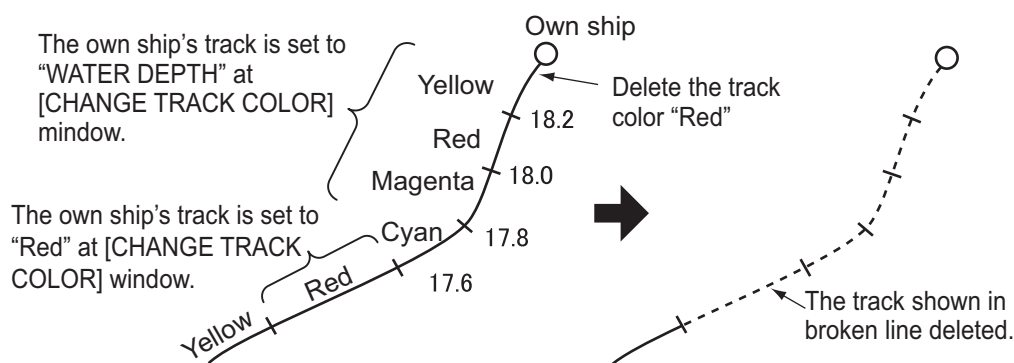
You can delete the color or line type of the own ship's track. The area to be deleted can be selected with one of the following five methods.

- [BTWN 2PTS]: deletes the track line between the points specified with the cursor.
- [SET RNG]: deletes the track lines by color or line type within the specified area.
- [WITHIN RNG]: deletes the track lines displayed on the screen by color or line type.
- [OUT OF RNG]: deletes all track lines not displayed on the screen by color or line type.
- [ALL]: deletes all track lines by color or line type.

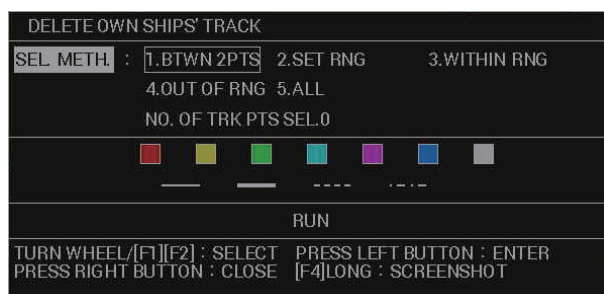
Note 1: Use this function with care. Erased tracks cannot be restored.

Note 2: Recorded tracks which are selected at [ADD] from [PLAY OWN TRK] in the [INT. MEMORY PLAYBACK] menu (see section 1.59.2) cannot be deleted.

Note 3: When tracks are recorded and colored according to temperature or depth, and the color in use immediately before selecting the method to delete tracks is the same color, all temperature and depth tracks of that color will also be deleted.



1. Open the menu.
2. Select [MARKS•PLOTTER].
3. Select [TRACK].
4. Select [DELETE OWN TRACK]. The [DELETE OWN SHIP'S TRACK] window appears.

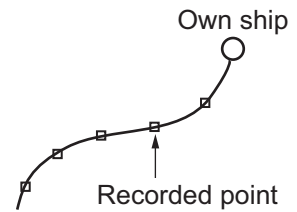


5. Select [SEL. METH.].
6. Select a the method you want to use.
If you selected [BTWN 2PTS] or [SET RNG], go to step 7. For all other selections, go to step 8.

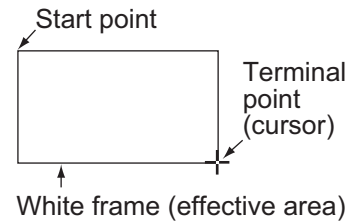
7. Depending on your selection, do one of the following:

- [BTWN 2PTS]: Select start point and terminal point on the track with trackball. The track line between the two points will be deleted. Proceed to step 13.

Note: Both current track and playback track cannot be erased at the same time.



- [SET RNG]: Select start point and terminal point of the area to erase. The track points surrounded by the white frame are deleted. Proceed to step 13.



8. Select [COLOR].

9. Select the one or more track colors you want to delete. If you select ALL, all tracks with the specified colors will be deleted.

10. Select [LINE].

11. Select the one or more line types you want to delete. If you select [ALL], all tracks with the specified line types will be deleted.

12. Select [RUN]. The selected tracks are deleted.

13. Close the menu.

6.1.10 How to edit own ship's tracks

You can edit tracks after you reach port with one of the four methods listed below. Both current track and playback track cannot be edited at the same time.

- [BTWN 2PTS]: edit the track line between the points specified with the cursor.
- [SET RNG]: edit the track lines by color or line type within the specified area.
- [WITHIN RNG]: edit the track lines displayed on the screen by color or line type.
- [OUT OF RNG]: edit all track lines not displayed on the screen by color or line type.

Note 1: Recorded tracks which are selected at [ADD] from [PLAY OWN TRK] in the [INT. MEMORY PLAYBACK] menu cannot be deleted.

Note 2: When tracks are recorded and colored according to temperature or depth, and the color in use immediately before selecting the method to delete tracks is the same color, all temperature and depth tracks of that color will also be deleted.

1. Open the menu.
2. Select [MARKS•PLOTTER].
3. Select [TRACK].
4. Select [EDIT TRACK].
The [EDIT TRACK] window appears.
5. Select [SEL. METH.].
6. Select a the method you want to use.



If you selected [BTWN 2PTS] or [SET RNG], go to step 7. For all other selections, go to step 8.

6. PLOTTER OPERATION (C-TYPES)

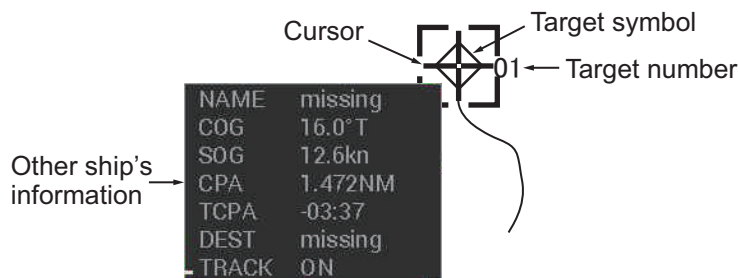
7. Depending on your selection, do one of the following:
 - [BTWN 2PTS]: Select start point and terminal point on the track with trackball.
 - [SET RNG]: Select start point and terminal point of the area to edit.
8. Select [COLOR].
9. Select the color you want to change the selected tracks to. If you select [NO CHG.], the tracks retain their original color.
10. Select [LINE].
11. Select the line type you want to change the selected tracks to. If you select [NO CHG.], the tracks retain their original line type.
12. Select [RUN]. The selected changes are applied to the selected tracks.
13. Close the menu.

6.1.11 How to view information for consorts and GPS buoys

You can display GPS buoy and other ship's information on the screen.

Basic information

1. Press the **CURSOR DISP** key when the cursor is not shown.
2. Place the cursor on the target whose information you want to view.
The information for the selected target appears. If there is no data, [- -] appears.



Note: If the target information is not shown, do the following procedure.

- 1) Open the menu.
- 2) Select [TT•AIS].
- 3) Select [CONSORT•GPS BUOY].
- 4) Select [TARGET POP UP INFO.].
- 5) Select [ON].
- 6) Close menu.

Detailed information

1. Place the cursor on the target whose information you want to view, then press the **right button**.

The target information box appears at the bottom of the screen.

```

CONSORT DETAIL INFO
SHIP NAME   : F U R U N O M A R U
POSITION    : 00° 01.0000'N, 000° 02.0000'E
DISTANCE    : 0.000kyd  DIR FM OS : 0.0°R
WATER TMP   : 0.0°C    DEPTH    : 0.0m
CURRENT1    : 1LYR  ---.-mph  ---.-°T
CURRENT2    : 2LYR  ---.-mph  ---.-°T
CURRENT3    : 3LYR  ---.-mph  ---.-°T
FISHSIZE    : ---cm

PRESS RIGHT BUTTON : CLOSE
[F4]LONG : SCREENSHOT

```

2. Press the **right button** to close the information box.

Consort list

1. Open the menu.
2. Select [TT•AIS].
3. Select [CONSORT•GPS BUOY].
4. Select [CONSORT LIST]. The [CONSORT LIST] appears.

CONSORT LIST		SEL PAGE _ 1/1		
NAME OF SHIP	DISTANCE	DIR FM OS	TCPA	CPA
FURUNOMARU	0.000kyd	0.0°R	--m-s	---kyd

[F1] : CHANGE COLOR PRESS RIGHT BUTTON : CLOSE
 PRESS LEFT BUTTON : SELECT TARGET
 [F2] : RECORD START/STOP
 [0]-[9]/[F3][F4] : PAGE NO/MOVE PAGE [F4]LONG : SCREENSHOT

The following operations are available from the [CONSORT LIST].

- Change the selected consort ship's track color: press **F1**. For procedure details, see section 6.1.5 and section 6.1.7.
- View a consort ship's details: select the consort, then press the **left button**.
- Start/stop track recording for the selected consort ship: press **F2**.
- Take a screenshot of the consort list: press and hold **F4**.
This requires a SD Card inserted in the card slot of the processor unit.
- Change the selected page (when more than one page of the list is available): press the desired page number on the control unit, or press **F3** to go back one page, **F4** to go forward one page.
- Close the list: press the **right button**.

6. PLOTTER OPERATION (C-TYPES)

GPS buoy

1. Open the menu.
2. Select [TT•AIS].
3. Select [CONSORT•GPS BUOY].
4. Select [GPS BUOY LIST], then press the **left button**.
The GPS buoy list appears.

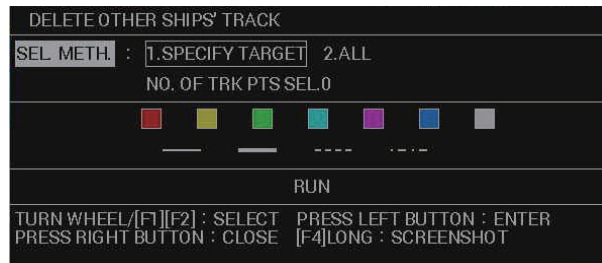
GPS BUOY LIST		SEL PAGE _ 1/1	
ID	POSITION	DISTANCE	DIR FM OS
1	00° 01.0000'N,000° 04.0000'E	4.131NM	76.0° R
2	00° 02.0000'N,000° 04.0000'E	4.480NM	63.4° R
3	00° 03.0000'N,000° 04.0000'E	5.009NM	53.1° R
4	00° 04.0000'N,000° 04.0000'E	5.667NM	45.0° R
5	00° 05.0000'N,000° 04.0000'E	6.415NM	38.7° R
[F1] : CHANGE COLOR PRESS RIGHT BUTTON : CLOSE			
PRESS LEFT BUTTON : SELECT TARGET			
[F2] : RECORD START/STOP			
[0]-[9]/[F3][F4] : PAGE NO/MOVE PAGE [F4]LONG : SCREENSHOT			

The following operations are available from the [CONSORT LIST].

- Change the selected buoy's track color: press **F1**. For procedure details, see section 6.1.5 and section 6.1.7.
- View a buoy's details: select the buoy, then press the **left button**.
- Start/stop track recording for the selected buoy: press **F2**.
- Take a screenshot of the list: press and hold **F4**.
This requires a SD Card inserted in the card slot of the processor unit.
- Change the selected page (when more than one page of the list is available):
press the desired page number on the control unit, or press **F3** to go back one page, **F4** to go forward one page.
- Close the list: press the **right button**.

6.1.12 How to delete other ship's tracks

1. Open the menu.
2. Select [MARKS•PLOTTER].
3. Select [TRACK].
4. Select [DELETE OTHER TRACK].
The [DELETE OTHER SHIP'S TRACK] window appears.



5. Select [SEL. METH.].
6. Select a the method you want to use.
 - [SPECIFY TARGET]: delete only the tracks of the specified target. Go to step 7.
 - [ALL]: delete all target tracks that match the specified color and line type. Go to step 8.
7. If you selected [SPECIFY TARGET], place the cursor on the target whose tracks you want to delete, then left-click.
8. Select [COLOR].
9. Select the color you want to change the selected tracks to. If you select [NO CHG.], the tracks retain their original color.
10. Select [LINE].
11. Select the line type you want to change the selected tracks to. If you select [NO CHG.], the tracks retain their original line type.
12. Select [RUN]. The selected changes are applied to the selected tracks.
13. Close the menu.

6.2 Marks

Up to 30,000 marks can be used to indicate the location of fish schools, shallows, buoys and other points of interest. You can connect marks with a line or place square/circular marks over a designated area.

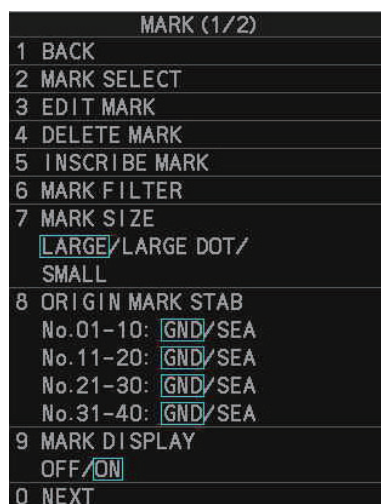
6.2.1 How to set up marks

You can set the color, shape, line type, size and fish type to use as marks.

Mark color, shape and line type

You can set up to mark with the following procedure.

1. Open the menu.
2. Select [MARKS•PLOTTER].
3. Select [MARK]. The [MARK] menu appears.

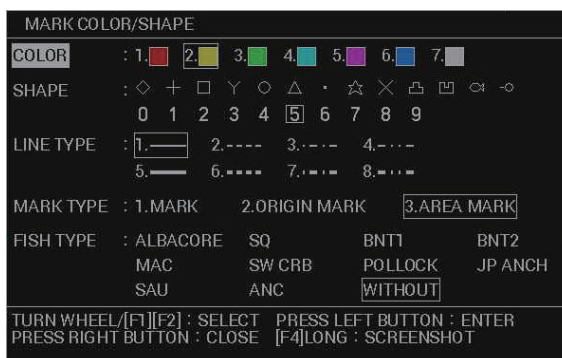


Note: You can also access the [MARK] menu from the [MARK] box. Place the cursor on the [MARK] box, then right-click.

4. Select [MARK SELECT]. The [MARK COLOR/SHAPE] window appears.



The currently selected mark's shape appears in the [MARK] box at the bottom-left corner of the screen.

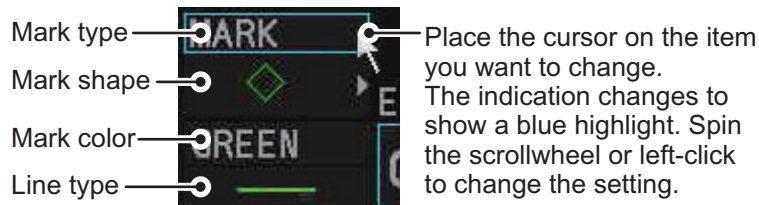


Note: When [MARK TYPE] is set to [ORIGIN MARK or AREA MARK], [SHAPE] and [FISH TYPE] cannot be changed.

5. Select [COLOR].
6. Select the color you want to use.
7. Select [SHAPE].
8. Select the shape you want to use.

9. Select [LINE TYPE].
10. Select the type of line you want to use for connected marks.
The line type selected here is used for the lines between connected marks and as the boundary for area marks.
 - **For connected marks:** The line appears when the procedure outlined at "Entering connected marks" on page 6-24 is followed.
 - **For area marks:** The boundary shape appears when the procedure outline at "Entering area marks" on page 6-24 is followed.
11. Select [MARK TYPE].
12. Select [MARK] to use connected marks and normal marks, select [AREA MARK] to use area marks. The indications in the [MARK] box change according to your selection.
13. Close the window.

Note: You can also change the mark attributes directly from the [MARK] box. Place the cursor on the item you want to change, then spin the scrollwheel or left-click to cycle through the options. Changes made in this manner are also reflected on the [MARK COLOR/SHAPE] window.



Mark size

You can set the mark sizes as [LARGE], [LARGE DOT] or [SMALL].

1. Open the menu.
2. Select [MARKS•PLOTTER].
3. Select [MARK].
4. Select [MARK SIZE].
5. Select the desired mark size.



6. Close the menu.

Fish marks

You can assign a fish type to a mark and also hide the fish mark with the mark filter. For how to use the mark filter, see section 6.2.6.

1. Open the menu.
2. Select [MARKS•PLOTTER].
3. Select [MARK].
4. Select [MARK SIZE].
5. Select [MARK SELECT].
6. Select [FISH TYPE].
7. Select the type of fish you want to assign to the mark.
If you select [WITHOUT], no fish type is assigned to the mark.
Note: You can change the names listed under [FISH TYPE]. Select the name you want to change, then press **F3**. Referring to section 1.5.3, assign a new name to the fish type (max. 10 characters). This name change is applied to all other locations where fish type appears.
8. Close the menu.

6.2.2 How to enter marks and lines

You can enter marks with one of the following methods:

- Enter a mark, connected mark (line) or area mark at the cursor location
- Enter the latitude/longitude for the mark location (not available for connected marks and area marks)

Note: If marks do not appear on-screen, check the following:

- Is [MARK DISPLAY] turned on? Check [MAIN MENU] → [MARKS•PLOTTER] → [MARK] menu. If the setting is [OFF], set to [ON].
- Is the MAP button on the InstantAccess bar™ set to [ON]? If the button shows [MAP OFF], left-click the button to show [MAP ON].
- Is the mark filtered? Check the filter settings, referring to section 6.2.6. If the mark is filtered, disable the filter.

Entering a mark at the cursor location

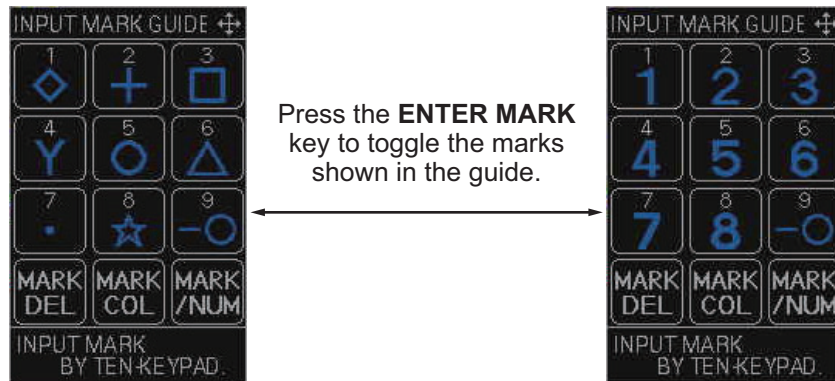
You can enter marks at the cursor location with one of the following methods:

- Method 1: Using the keys on the control unit.
 - 1) Place the cursor on the location you want to mark.
 - 2) Press the **ENTER MARK** key.
The mark selected at section 6.2.1 appears at the cursor location.
- Method 2: Using the on-screen boxes and menus.
 - 1) Place the cursor on the mark type in the [MARK] box.
 - 2) Spin the scrollwheel or left-click to select [MARK].
 - 3) Place the cursor on the mark shape.

- 4) Spin the scrollwheel to select a mark.

Note: If you use method 1 after selecting a mark in the [MARK] box using method 2, the mark that appears on-screen is the mark selected in the [MARK] box.

- 5) Left-click the [MARK] box. The cursor color changes and the [INPUT MARK GUIDE] window appears.



How to use the [INPUT MARK GUIDE] window

The control unit's numeric keys, **CANCEL TRAILS**, **BRILL** and **ENTER MARK** keys are used with the [INPUT MARK GUIDE] window.

- **1** key through to **9** key: Enter the corresponding mark at the cursor location.
- **CANCEL TRAILS** key: Delete the mark highlighted with the cursor.
- **BRILL** key: Toggle the window display to show color selections for marks.
If a mark is highlighted with the cursor when you press the **BRILL** key, the [EDIT MARK] window appears.
- **ENTER MARK** key: Toggles the marks shown in the [INPUT MARK GUIDE] window. This button has no function if the [INPUT MARK GUIDE] window shows the color selections.

- 6) Do one of the following:

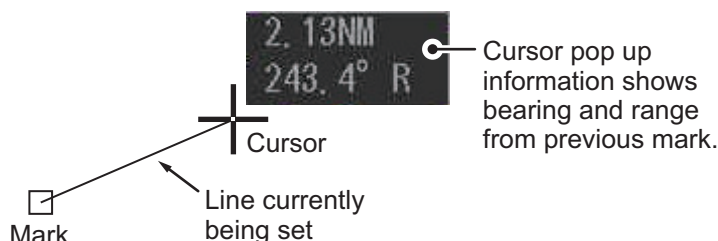
- Place the cursor on the location you want to mark, then left-click. The mark shown in the [MARK] box appears.
- Place the cursor on the location you want to mark, then press the numeric key, on the control unit, that corresponds to the mark you want to enter. The selected mark appears.

- 7) Right-click to close the [INPUT MARK GUIDE] window.

Entering connected marks

Connected marks show each mark symbol, connected with a line. This feature can be used to mark areas, potential routes or net drop locations.

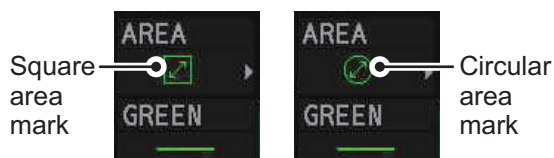
1. Place the cursor on the mark type in the [MARK] box.
2. Spin the scrollwheel or left-click to select [MARK].
3. Place the cursor on the mark shape.
4. Spin the scrollwheel to select the connected mark symbol (—○), then left-click. The cursor changes color.
5. Place the cursor on the location you want to mark, then left-click.
If one or more marks already exist, a line appears between the last mark and the new mark. The cursor pop up information shows the range and bearing from the last mark.



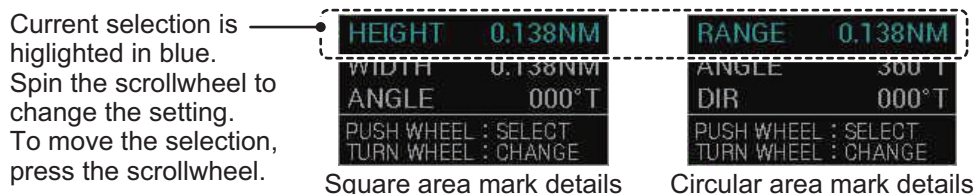
6. Repeat step 3 as required until the line of marks is completed.
7. Right-click to complete the procedure.

Entering area marks

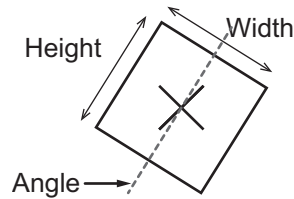
1. Place the cursor on the mark type in the [MARK] box.
2. Spin the scrollwheel or left-click to select [AREA MARK].
3. Place the cursor on the mark shape.
4. Spin the scrollwheel to select the area mark.



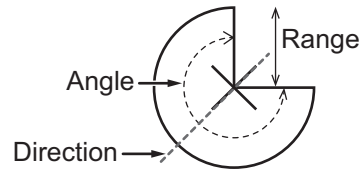
5. Left-click to confirm the selection.
The area mark details pop up window appears. The contents of the window depend on the area mark selected, as shown below.



- Spin the scrollwheel to set the [HEIGHT] or [RANGE] as required, then press the scrollwheel to move to the next setting. The area mark changes dynamically to reflect each change in the settings.



Square area mark



Circular area mark

- Set the other details in the same manner as in step 6.
- Move the cursor to the location where you want to insert the mark, then left-click.

Entering marks at a specified latitude/longitude

- Open the menu.
- Select [MARKS•PLOTTER].
- Select [MARK].
- Select [INSCRIBE MARK].
The [INPUT MARK] window appears.
- Select [LATITUDE].
- Enter the latitude at which you want to enter the mark.
You can spin the scrollwheel, then left-click to enter a numeral, or press the corresponding number key on the control unit.
- Set the longitude in a similar manner.
- Select [COLOR].
- Select the color you want to use.
- Select [SHAPE].
- Select the shape you want to use.
- Select [LINE TYPE].
- Select the type of line you want to use for connected marks.
- Select [FISH TYPE].
- Select the type of fish you want to assign to the mark.

If you select [WITHOUT], no fish type is assigned to the mark.

Note: You can change the names listed under [FISH TYPE]. Select the name you want to change, then press **F3**. Referring to section 1.5.3, assign a new name to the fish type (max. 10 characters). This name change is applied to all other locations where fish type appears.

- Close the window.

INPUT MARK	
LATITUDE	: 3 5 ' 2 1 . 6 8 0 9 ' N
LONGITUDE	: 1 3 9 ' 4 2 . 2 5 1 4 ' E
COLOR	: 1. [Red] 2. [Green] 3. [Blue] 4. [Yellow] 5. [Magenta] 6. [Cyan] 7. [Grey]
SHAPE	: 1. [Diamond] 2. [Plus] 3. [Square] 4. [Y] 5. [O] 6. [A] 7. [Star] 8. [Star]
LINE TYPE	: 1. [Solid] 2. [Dashed] 3. [Dash-dot] 4. [Dash-dot-dot] 5. [Solid] 6. [Dashed] 7. [Dash-dot] 8. [Dash-dot-dot] 9. WITHOUT
FISH TYPE	: ALBACORE SQ BNT1 BNT2 MAC SW CRB POLLOCK JP ANCH SAU ANC WITHOUT
TURN WHEEL/[F1][F2]: SELECT PRESS LEFT BUTTON: ENTER PRESS RIGHT BUTTON: CLOSE [F4]LONG: SCREENSHOT	

6.2.3 How to delete marks and lines

You can delete marks and lines from the menu or on the screen.

When you use the menu to delete marks, you can specify the mark color, shape or fish type to delete.

Note: Recorded tracks which are selected at [ADD] from [PLAY OWN TRK] in the [INT. MEMORY PLAYBACK] menu (see section 1.59.2) cannot be deleted.

Deleting marks on-screen

You can delete marks on the screen with one of the following methods.

Note: If a marks is not deleted when you complete one of the following procedures, it is possible that there are multiple marks on the same location. Repeat the procedure.

- Method 1: Use the **TARGET CANCEL** key.
 1. Place the cursor on the mark you want to delete, then press the **TARGET CANCEL** key.

When the cursor is placed on a mark, the cursor shape changes as shown in the figure to the right.



2. Repeat as required.
- Method 2: Use the [CURSOR] menu.
 1. Right-click within the radar effective radius to show the [CURSOR] menu.
 2. Select [MARK DELETE].
 3. Place the cursor on the mark you want to delete, then left-click.
 4. Repeat as required.
 - Method 3: Use the [INPUT MARK GUIDE] window.

Note: Connected marks (lines) and area marks cannot be deleted with this method.

 1. Left-click the [MARK] box to show the [INPUT MARK GUIDE] window.
 2. Place the cursor on the mark you want to delete.
 3. Press the **CANCEL TRAILS** key.
 4. Repeat as required.
 5. Right-click to close the window.
 - Method 4: Use the [DELETE MARK] window.
 1. Open the menu.
 2. Select [MARKS•PLOTTER].
 3. Select [MARK].

4. Select [DELETE MARK]. The [DELETE MARK] window appears.

DELETE MARK

SEL. METH. : 1.CURSOR 2.SET RNG 3.WITHIN RNG
4.OUT OF RNG 5.ALL

NO. OF MRK SELECTED 0

Color selection row: Red, Yellow, Green, Cyan, Magenta, Blue, Grey

Shape selection row: Diamond, Plus, Square, Y, Circle, Triangle, Dot, Star, Cross

Number selection row: 1, 2, 3, 4, 5, 6, 7, 8, 9, 0

RUN

TURN WHEEL/[F1][F2] : SELECT PRESS LEFT BUTTON : ENTER
PRESS RIGHT BUTTON : CLOSE [F4]LONG : SCREENSHOT

5. Select [SEL. METHOD].
6. Select the method you want to use to delete marks.
- [CURSOR]: deletes the mark or line selected with the cursor.
 - [SET RNG]: deletes all marks and lines by color or line type within the specified area.
 - [WITHIN RNG]: deletes the marks and lines displayed on the screen by color or line type.
 - [OUT OF RNG]: deletes all marks and lines not displayed on the screen by color or line type.
 - [ALL]: deletes all marks and lines by color or line type.
- If you selected [CURSOR] or [SET RNG], go to step 7. For all other options, go to step 8.
7. Depending on your selection, do one of the following:
- [CURSOR]: Place the cursor on the mark to delete, then left-click. Repeat as required, then close the window.
 - [SET RNG]: Set the area in which you want to delete marks. Left-click the starting point of the area, then left-click the end point of the area.
8. Select [COLOR].
9. Select the color of the mark(s) you want to delete.
If you select [ALL], all marks which match the other criteria are deleted, regardless of color.
10. Select [SHAPE].
11. Select the shape of the marks you want to delete.
If you select [ALL], all marks which match the other criteria are deleted, regardless of shape.
12. Select [FISH TYPE].
13. Select the fish type for the marks you want to delete.
If you select [WITHOUT], only marks which are not assigned a fish type, and meet the other criteria, are deleted.
If you select [ALL], all marks which match the other criteria are deleted, regardless of fish type.
14. Select [RUN]. Marks that meet your criteria are deleted and the window closes automatically.

6.2.4 How to edit marks and lines

1. Open the menu.
2. Select [MARKS•PLOTTER].
3. Select [MARK].
4. Select [EDIT MARK].
The [EDIT MARK] window appears.

EDIT MARK			
SEL. METH.	1.CURSOR 2.SET RNG 3.WITHIN RNG		
	4.OUT OF RNG		
	NO. OF MRK SELECTED 17		
COLOR	1. 2. 3. 4. 5. 6. 7. 8. NO CHG.		
SHAPE	1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 841. 842. 843. 844. 845. 846. 847. 848. 849. 850. 851. 852. 853. 854. 855. 856. 857. 858. 859. 860. 861. 862. 863. 864. 865. 866. 867. 868. 869. 870. 871. 872. 873. 874. 875. 876. 877. 878. 879. 880. 881. 882. 883. 884. 885. 886. 887. 888. 889. 890. 891. 892. 893. 894. 895. 896. 897. 898. 899. 900. 901. 902. 903. 904. 905. 906. 907. 908. 909. 910. 911. 912. 913. 914. 915. 916. 917. 918. 919. 920. 921. 922. 923. 924. 925. 926. 927		

13. Select the line type you want to change the selected marks to. If you select [NO CHG.], the marks retain their original line type.
14. Select [FISH TYPE].
15. Select the type of fish you want to assign to the mark.
If you select [NO CHG.], the marks retain their original fish type.
If you select [WITHOUT], marks with no fish type assigned are edited.
Note: You can change the names listed under [FISH TYPE]. Select the name you want to change, then press **F3**. Referring to section 1.5.3, assign a new name to the fish type (max. 10 characters). This name change is applied to all other locations where fish type appears.
16. Select [COMMENT].
17. Referring to section 1.5.3, edit the comment as required. If you select [NO CHG.], the marks retain their original comment.
18. Select [RUN]. The selected changes are applied to the selected marks.
19. Close the menu.

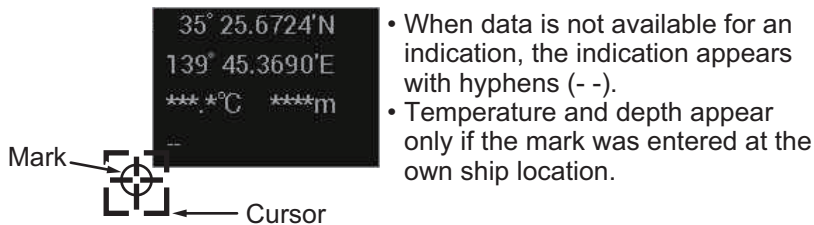
6.2.5 How to view mark and line information

You can view the information for marks in either pop up or detailed format.

Viewing mark information in pop up format

The pop up window shows basic mark information (latitude, longitude, water temperature, depth and comment).

Place the cursor on a mark to view its basic information.



For area marks, the basic information also shows the coordinates, comment and dimensions of the area.



Square area mark pop-up



Circle area mark pop-up

Note 1: The mark comment only appears in pop up information with the following menu settings: [MAIN] menu → [MARKS•PLOTTER] → [MARK] → [NEXT] → [SHOW MARK COMMENTS] → [ON CHART] or [IN POP UP INFO].

Note 2: The pop up information only appears with the following menu setting: [MAIN] menu → [MARKS•PLOTTER] → [MARK] → [NEXT] → [MARK CURSOR INFO.] → [ON].

6. PLOTTER OPERATION (C-TYPES)

Viewing detailed mark information

Place the cursor on the mark whose information you want to view, then right-click. The mark's detailed information appears at the bottom of the screen.

Note: Detailed mark information using this method is not available for area marks.

MARK INFORMATION	
POSITION	: 35° 25.6724'N 139° 45.3690'E
DATE	: 2017/06/15 08:01
COMMENT	: --
FISH TYP	: POLLOCK
MOON AGE	: --
TIDE	: +-m-
TEMP	: ***.°C
DEPTH	: ***m
COMP	: --
DRIFT	: --.° ***.kn
TIDAL CURRENT	: --.° ***.kn
PRESS RIGHT BUTTON : CLOSE	
[F1] : EDIT MARK [F4]LONG : SCREENSHOT	

- When data is not available for an indication, the indication appears with hyphens (- -).
- Temperature and depth appear only if the mark was entered at the own ship location.

With the detailed information displayed, press the **F1** key to edit the mark, or press **F4** to take a screenshot.

To close the information, press the **right button**.

Methods for comment display

You can set how to show mark comments with the following procedure.

[MAIN] menu → [MARKS•PLOTTER] → [MARK] → [NEXT] → [SHOW MARK COMMENTS] → [ON CHART] or [IN POP UP INFO]

1. Open the menu.
2. Select [MARKS•PLOTTER].
3. Select [MARK].
4. Select [NEXT].
5. Select [SHOW MARK COMMENTS].
6. Select the desired display method.
 - [ON CHART]: mark comment is always visible, directly above the mark
 - [IN POP UP INFO]: mark comment appears in a pop up window when the cursor is placed on the mark.
 - [IN INFORMATION]: mark comment is displayed in the information area, at the right-hand side of the screen, when you right-click the mark.
7. Close the menu.

6.2.6 Mark filter

The mark filter lets you show and hide marks based on your settings.

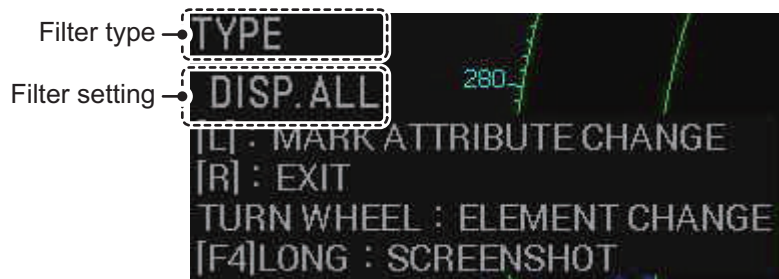
Note: The mark filter is not available under the following circumstances:

- The [MAP ON/OFF] button shows "MAP OFF".
- Heading data is not input.
- Position data is not input.

How to activate the mark filter

1. Open the menu.
2. Select [MARKS•PLOTTER].
3. Select [MARK].
4. Select [MARK FILTER].

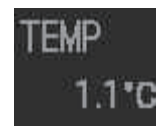
The mark filter settings appear at the mid-left side of the screen, below the [ACE] button.



5. Press the left button to cycle through the filter types and select the required filter. The filter types cycle in the following order: [DISP. ALL] → [TYPE] → [COLOR] → [SHAPE] → [DATE] → [COMP] → [TEMP] → [DEPTH] → [L.AGE] → [TIDE] → [C.DIR] → [C.SPD] → [MULTI] → [DISP.ALL]... You can hide filter types (and their settings) from the menu, removing them from the above cycle. To hide filter types, see the "How to show/hide filter settings from the display cycle" on page 6-34 which follows directly after this topic.
6. Spin the scrollwheel to select the filter setting you want to use. Only marks that match the filter settings appear on the screen.



Filter: Bottom composition (COMP)
Filtered composition: SAND



Filter: Water temperature (TEMP)
Filtered temperature: 1.1°C

Filter type	Filter settings	Description
Blank indication.	[DISP ALL]	No filter. All marks are shown.
[TYPE]	[DISP ALL], fish types set to ON in the [MARK FILTERS(FISH)] menu.	Marks that match the selected fish type are shown.
[COLOR]	[DISP ALL], [RED], [YELLOW], [GREEN], [LIGHT BLUE], [PURPLE], [BLUE], [WHITE]	Marks that match the selected color are shown.

6. PLOTTER OPERATION (C-TYPES)

Filter type	Filter settings	Description
[SHAPE]	[DISP ALL], the following symbols (◇, +, □, Y, ○, △, ■, ☆, ×, ▢, ▣, ▤, [1], [2], [3], [4], [5], [6], [7], [8], [9], [0])	Marks that match the selected shape are shown.
[DATE]	[DISP. ALL], [THE PAST WEEK], [THE PAST MONTH], [THE PAST YEAR], [THIS PERIOD], [THIS TIME], mm/dd to mm/dd, mm/dd to [CURR.] (current)	Marks that match the selected date filter are shown.
[COMP]	[DISP. ALL], [MUD], [SAND], [GRAVEL], [ROCK]	Marks that match the selected seabed composition are shown.
[TEMP]	[DISP. ALL], [0.0 °C] to [30.0 °C] in 0.1 °C steps	Marks that match the are within ±0.5°C of the filter setting are shown. When 0.0°C (minimum) is set, marks with a temperature below 0.0°C are shown, and when 30.0°C (maximum) is set, marks with a temperature above 30.0°C are shown.
[DEPTH]	[DISP. ALL], [0.0 m] to [200 m] in 5 m steps below 100 m, 10 m steps over 100 m	If the mark has depth information, and the depth is 100 m or less, depth marks are shown within a ±2.5 m deviation from the filter setting. Marks with a depth of over 100 m marks are shown with a ±5 m deviation. Where the filter is set to minimum/maximum, only depths the match, or are less/more respectively, are shown.
[L.AGE]	[DISP. ALL], [0] to [30]	If the mark has moon age data, marks within ±1 of the filter setting are shown.
[TIDE]	[DISP. ALL], [LOW TIDE], [30% UP], [50% UP], [70% UP], [HIGH TIDE], [30% LOW], [50% LOW], [70% LOW]	If the mark has a tide data, marks with the specified tide level marks are shown.
[C.DIR]	[DISP. ALL], [0.0 °T] to [350.0 °T] in 10° steps	Marks with a tidal current direction within ±10° of the filter setting are shown.
[C.SPD]	[DISP. ALL], [0.0 kn] to [5.0 kn] in 0.2 kn steps	Marks with a tidal current speed that match the filter setting exactly are shown. If the maximum speed is set, only marks that exceed the filter setting are shown.
[MULTI]	[MULTI DISP]	Combines all the filter settings into a multi-filter. Marks that match all the above criteria are shown.

Note: Filter settings are not applied to marks entered after the filters are set.

7. Right-click to complete the procedure.

Note: You can disable the filters, and hide the filter settings, by using above procedure, then selecting [DISP ALL] as the filter type. The [DISP. ALL] indication disappears after a few seconds.

How to show/hide filter settings from the display cycle

You can remove, or add filter types to the filter type display cycle. Items removed from the cycle do not appear at the mid-left side of the screen when you access the filter types.

1. Open the menu.
2. Select [MARKS•PLOTTER].
3. Select [MARK].
4. Select [NEXT].
5. Select [MARK FILTERS]. The [MARK FILTERS] menu appears. This menu has two pages, as shown in the following figure.

MARK FILTERS (1/2)	
1	BACK
2	FISH TYPE OFF/ <u>ON</u>
3	COLOR OFF/ <u>ON</u>
4	SHAPE OFF/ <u>ON</u>
5	DATE OFF/ <u>ON</u>
6	SEABED COMPOSITION OFF/ <u>ON</u>
7	WATER TEMPERATURE OFF/ <u>ON</u>
8	DEPTH OFF/ <u>ON</u>
9	MOON AGE OFF/ <u>ON</u>
0	NEXT

Page 1

MARK FILTERS (2/2)	
1	BACK
2	TIDE LEVEL OFF/ <u>ON</u>
3	CURRENT DIRECTION OFF/ <u>ON</u>
4	CURRENT SPEED OFF/ <u>ON</u>
5	MULTI OFF/ <u>ON</u>

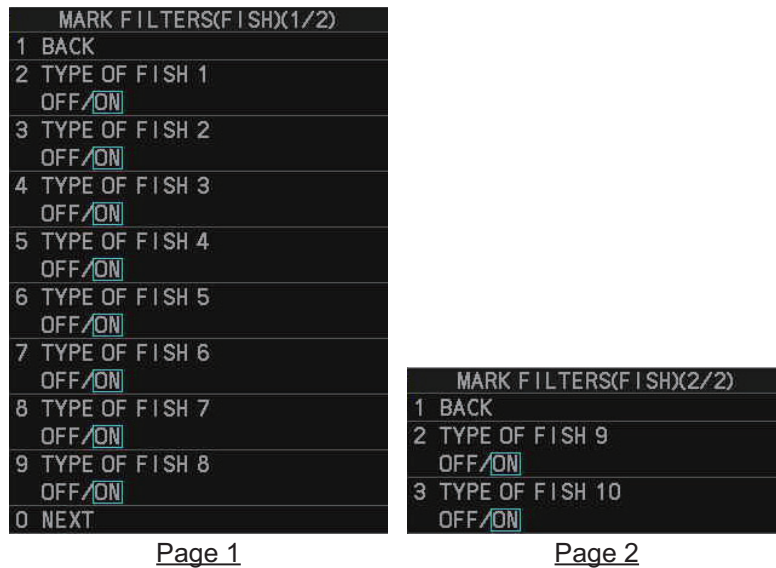
Page 2

6. Select the item you want to show or hide from the filters types.
7. Select [OFF] to hide the item, [ON] to show the item in the filter types.
Only the items set to [ON] will appear in the filter types cycle.
8. Close the menu.

How to show/hide fish filter types

You can remove, or add, fish filter types. These filter types appear in the [EDIT MARK] and [MARK COLOR/SHAPE] windows.

1. Open the menu.
2. Select [MARKS•PLOTTER].
3. Select [MARK].
4. Select [NEXT].
5. Select [MARK FILTERS(FISH)]. The [MARK FILTERS(FISH)] menu appears. This menu has two pages, as shown in the following figure.



6. Select the item you want to show or hide from the filters types.
7. Select [OFF] to hide the item, [ON] to show the item in the filter types. Only the items set to [ON] will appear in the [EDIT MARK] and [MARK COLOR/SHAPE] windows.
8. Close the menu.

How to set up the date/time filter

If you select DATE as the filter type, the filter settings appear in the following cyclic order:

[DISP. ALL] → [THE PAST WEEK] → [THE PAST MONTH] → [THE PAST YEAR] → [THIS PERIOD] → [THIS TIME] → mm/dd to mm/dd → mm/dd to [CURR.] (current) → [DISP. ALL]...

Note 1: Selecting [THIS PERIOD] will filter the marks to show only marks inserted with one month before or after the current date, regardless of the year.

Note 2: Selecting [THIS TIME] will filter the marks to show only marks inserted with three hours before or after the current time, regardless of the year.

In the above cycle, “mm” means “month”, in 2-digit format, and “dd” means “day” in 2-digit format. For example, July 4 would appear as “07/04”.

You can set the start and end dates you want to use for the filters with the following procedure:

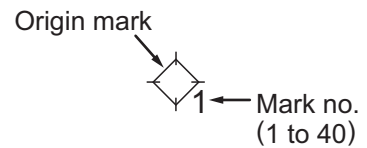
1. Open the menu.
2. Select [MARKS•PLOTTER].
3. Select [MARK].
4. Select [NEXT].
5. Select [MARK FILTERS(DATE)]. The [MARK FILTERS(DATE)] menu appears.
6. Select [START DATE].
7. Spin the scrollwheel to set the year, then left-click. Set the month and day in the same manner.
8. Select [END DATE].
9. Spin the scrollwheel to set the year, then left-click. Set the month and day in the same manner.
10. Close the menu.

MARK FILTERS(DATE)	
1	BACK
2	START DATE 2016/01/01
3	END DATE 2016/01/01

The selected dates appear in the filter settings at the mid-left side of the screen when [DATE] is selected as the filter type.

6.3 Origin Marks

You can enter up to 40 origin marks. When you enter an origin mark, the bearing and range from the cursor location to the mark appears in the [ORIGIN MARK LIST]. This makes origin marks handy for marking reefs and potential hazards.



6.3.1 How to set up an origin mark

Setting the mark type and color

Before you enter an origin mark, set the mark type and the color of the origin mark.

1. Open the menu.
2. Select [MARKS•PLOTTER].
3. Select [MARK].
4. Select [MARK SELECT]. The [MARK COLOR/SHAPE] window appears.
5. Select [COLOR].
6. Select the color you want to assign to the origin mark.
7. Select [MARK TYPE].
8. Select [ORIGIN MARK].
The mark shown in the [MARK] box changes to the origin mark.
9. Close the window.



Note: You can also change the mark type directly from the [MARK] box.

Place the cursor on the type indication in the [MARK] box, then spin the scrollwheel or left-click to cycle through the options. Changes made in this manner are also reflected on the [MARK COLOR/SHAPE] window.

Origin mark stabilization

You can change the stabilization for the origin mark.

1. Open the menu.
2. Select [MARKS•PLOTTER].
3. Select [MARK].
4. Select [ORIGIN MARK STAB].
5. Select the group of origin marks you want to stabilize. The groups are: [No.01-10], [No.11-20], [No.21-30], [No.31-40].
6. Select [GND] for ground stabilization, or [SEA] for sea stabilization.
 - [GND]: referenced to a fixed geographical location. Marks referenced in this manner appear in green color.
 - [SEA]: referenced to a moving nautical object. Marks referenced in this manner appear in blue color.

Note: [SEA] stabilized marks are automatically removed when the power is turned off.
7. Close the menu.

6.3.2 How to enter an origin mark

Valid heading and position data is required to enter an origin mark.

Note: If the origin mark is not shown on the screen when you enter it, check the following settings:

- [MAIN MENU] → [MARKS•PLOTTER] → [MARK] → [MARK DISPLAY] must be set to [ON].
 - The [MAP] button on the InstantAccess bar™ must be set to [ON].
1. Place the cursor on the [MARK] box at the bottom-left of the screen.
 2. Spin the scrollwheel to select the origin mark number you want to use, then left-click. The [ORIGIN MARK LIST] window and the [INPUT MARK GUIDE] window appear.



ORIGIN MARK LIST		GND
1	TEST 107.8 °R / 7.250 NM	—'—S
2	078.5 °R / 5.977 NM	—'—S
3	—' °R / — NM	—'—S
4	099.0 °R / 8.119 NM	—'—S
5	096.8 °R / 8.157 NM	—'—S
6	102.4 °R / 7.884 NM	—'—S
7	—' °R / — NM	—'—S
8	—' °R / — NM	—'—S
9	—' °R / — NM	—'—S
10	—' °R / — NM	—'—S
[ENTER] : NEXT [F1] LONG : DELETE ALL [F2] : INPUT COMMENT		

How to use the [INPUT MARK GUIDE]:

- Press the numeric keys on the control unit to enter the corresponding origin mark.
- Press the [CANCEL TRAILS] key to delete a mark highlighted with the cursor.
- Press the **ENTER MARK** key to change the origin mark numbers displayed in the [INPUT MARK GUIDE].

How to use the [ORIGIN MARK LIST]:

- Press the **ENTER MARK** key to change pages.
- Press and hold the **F1** key to delete all origin marks.

Note: Origin mark stabilization reference ("GND"/"SEA") appears at the top-right of the [ORIGIN MARK LIST]. You can change the reference for each group of 10 marks, as outlined in section 6.3.1.

3. Place the cursor on the location you want to mark, then left-click. The selected origin mark appears and the list shows the new mark and the range/bearing to the mark from the cursor.
You can also move the origin mark by clicking a different location on the screen.
4. To enter more origin marks, spin the scrollwheel to select the desired origin mark number, then left-click the location you want to enter the mark.
5. Right-click to close the windows and complete the procedure.

6.3.3 How to delete origin marks

There are three methods you can use to delete origin marks.

- **Method 1:** Use the **TARGET CANCEL** key.
 1. Place the cursor on the mark you want to delete, then press the **TARGET CANCEL** key.

When the cursor is placed on a mark, the cursor shape changes as shown in the figure to the right.


 2. Repeat as required.
- **Method 2:** Use the [CURSOR] menu.
 1. Right-click within the radar effective radius to show the [CURSOR] menu.
 2. Select [MARK DELETE].
 3. Place the cursor on the mark you want to delete, then left-click.
 4. Repeat as required.
- **Method 3:** Use the [INPUT MARK GUIDE] window.
 1. Left-click the [MARK] box to show the [INPUT MARK GUIDE] window.
 2. Place the cursor on the mark you want to delete.
 3. Press the **CANCEL TRAILS** key.
 4. Repeat as required.
 5. Right-click to close the window.

6.3.4 How to set a comment for origin marks

You can set a comment for an origin mark with the following procedure.

1. Place the cursor on the [MARK] box at the bottom-left of the screen, then left-click. The cursor changes color, and the [ORIGIN MARK LIST] and [INPUT MARK GUIDE] windows appear.
2. Place the cursor on the mark to which you want to add a comment. The cursor shape changes as shown in the figure to the right.
3. Press **F2**.
4. Referring to section 1.5.3, enter the desired comment. Comments appear in the upper-left section of the mark details in the [ORIGIN MARK LIST].
5. Right-click to complete the procedure and close the windows.



6.4 Waypoints

The term “waypoints” is used to describe points of departure/arrival, turning points and other special points that can be used for navigation. Using waypoint information, you can find the shortest route to your destination.

6.4.1 How to create a waypoint

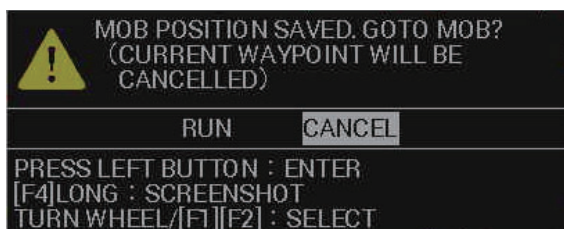
There are seven methods you can use to registers a waypoint.

- Enter a waypoint at the current own ship's location.
- Enter a waypoint at the cursor location.
- Enter a waypoint at the location specified latitude/longitude.
- Enter a waypoint at the location specified bearing and distance.
- Enter a waypoint from Loran-C time deviation.
- Enter a waypoint from Loran-A time deviation.
- Enter a waypoint from Decca phase difference.

Note: This feature requires [ROUTE DATA SOURCE] in the [ROUTE•WAYPOINTS] menu to be set to [INTERNAL]. If the setting is [EXTERNAL], the above methods are not available and any waypoints entered previously are not displayed.

Entering a waypoint at your current location

1. Place the cursor on the MOB button on InstantAccess bar™, then left-click.
The MOB mark appears at your current location as a GOTO waypoint. This waypoint is automatically assigned the name MOB and appears in the waypoints list.
A pop up message appears asking if you want to go to the MOB location.

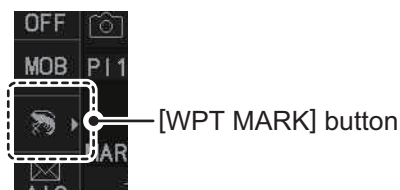


2. **To navigate to the waypoint**, spin the scrollwheel to select [RUN], then left-click.
To keep the waypoint but not navigate to it, select [CANCEL].

You can also enter a waypoint at your current location if the cursor is hidden. Right-click within the radar effective radius, then select [WPT] from the [CURSOR] menu.

Entering a waypoint at the cursor location

1. Place the cursor on the [WPT MARK] button on the InstantAccess bar™.



2. Spin the scrollwheel to select the symbol (icon) you want to use for the waypoint.

3. Left-click the [WPT MARK] button to confirm the selection. The cursor changes color and the guidance box reads "ENTER WPT/EXIT".
4. Place the cursor on the location you want to enter the waypoint, then left-click. The [WAYPOINT ENTRY] window appears.



5. You can now set a name for the waypoint (max. six characters).
Waypoints are assigned the lowest available waypoint number as their name by default. If you want to keep the default, go to step 7. You can move the cursor in the [WAYPOINT ENTRY] window; press **F2** to move right, press **F1** to move left. To reset the name to default, press and hold **F3**.
6. To change the waypoint color, press **F3**. The icon at the [WPT MARK] button changes color with each press.
7. Place the cursor on the location you want to enter the waypoint, then left-click. The selected waypoint appears.

Note 1: If you do the above procedure while the cursor is hidden, the waypoint appears at the own ship location.

Note 2: At step 6, if you assign a name that is already in use, an error message appears.

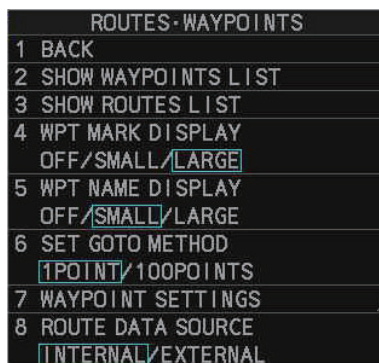


Select [RUN] to overwrite the existing waypoint, or [CANCEL] to rename the new waypoint. This message only appears when [CONFIRM OVERWRITE] in the [WAYPOINT SETTINGS] menu is set to [ON].

6. PLOTTER OPERATION (C-TYPES)

Entering a waypoint at specific coordinates

1. Open the menu.
2. Select [ROUTES•WAYPOINTS].



3. Select [SHOW WAYPOINTS LIST]. The [WAYPOINTS LIST] appears.

WAYPOINTS LIST			SEL. PAGE _ 1/1	
SET DEST. : WPT 000005				
NAME	LATITUDE/LONGITUDE		INT. BAN	COMMENT
000001	● 35° 22.5313'N 139° 41.9326'E		0.00NM	07:48 1706.15
000002	● 35° 18.9767'N 139° 41.6503'E		0.00NM	07:49 1706.15
000003	▲ 35° 16.1454'N 139° 43.3975'E		0.00NM	08:11 1706.15
000004	▲ 35° 16.1618'N 139° 43.5014'E		0.00NM	08:11 1706.15
000005	■ 35° 17.7769'N 139° 45.3305'E		0.00NM	07:55 1706.15
SORT : ALPHA. ORD			RNG ORDER	EST TIME OF ARR. 6/15 07 : 50
MARK SHAPE			REG. ORDER	
SPD FOR : T. SHP SPD : 13.4 kn			TIME TO GO 0HR 04MIN +	
TTG CALC ENT VALUE : 0 0 . 0 kn				
SEARCH : _____				
TURN WHEEL/[F1][F2] : SELECT PRESS RIGHT BUTTON : CLOSE				
PRESS LEFT BUTTON : EDIT DEST.				
[F1]LONG : NEW WPT [F2]LONG : SET DEST.				
[CANCEL] : DELETE DEST. [F3]LONG : DELETE ALL				
[0]-[9]/[F3][F4] : PAGE NO/MOVE PAGE [F4]LONG : SCREENSHOT				

4. Press and hold **F1** to show the [EDIT WAYPOINT NAME] window.

EDIT WAYPOINT NAME			
NAME OF WPT	:	000013	
LATITUDE	:	35° 18. 28 29' N	
LONGITUDE	:	139° 43. 87 54' E	
MARK COLOR	:		
MARK SHAPE	:		
MARK DISPLAY	:	YES NO	
COORDINATE	:	LAT/LON. RNG./BRG. TIME DIFF.	
INT. BAN	:	0. 00 NM	
COMMENT	:	08:01 1706.15	
RUN			
TURN WHEEL/[F1][F2] : SELECT PRESS LEFT BUTTON : ENTER			
PRESS RIGHT BUTTON : CLOSE [F4]LONG : SCREENSHOT			

5. Select [NAME OF WPT].
6. Referring to section 1.5.3, enter a name for the waypoint.
7. Select [LATITUDE].
8. Spin the scrollwheel to select the desired numeral, then left-click to move the cursor to the next numeral.
9. Set [LONGITUDE] in the same manner.
10. Select [COLOR].
11. Select the color you want to use for this waypoint.
12. Select [SHAPE].
13. Select the shape you want to use for this waypoint.
14. Select [MARK DISPLAY].
15. Depending on your requirements, do one of the following:
 - Select [YES] to show the waypoints on-screen.
 - Select [NO] to hide the waypoints on-screen.
16. Select [INT. BAN].
17. Spin the scrollwheel to set the radius of the intrusion alert area.
 The waypoint symbol is replaced with a red colored “” symbol. When a waypoint enters the area, an alert is released. The waypoint also appears in red color in the waypoints list. For how to activate/deactivate this alert, see section 6.7.4.
18. Select [COMMENT].
19. Referring to section 1.5.3, enter a comment for the waypoint.
20. Select [RUN]. The settings are applied to the selected waypoint.

Entering a waypoint with specific bearing/range

1. Open the menu.
2. Select [ROUTES•WAYPOINT].
3. Select [SHOW WAYPOINTS LIST]. The [WAYPOINTS LIST] appears.
4. Press and hold **F1** to show the [EDIT WAYPOINT NAME] window.
5. Select [COORDINATE].
6. Select [RNG./BRG].

[DISTANCE] and [BEARING] appear here when [RNG./BRG.] is selected at [COORDINATE].

EDIT WAYPOINT NAME			
NAME OF WPT	:	000013	
DISTANCE	:	0 0 0 . 0 0 0 NM	
BEARING	:	0 0 0 . 0 ° T	
MARK COLOR	:	      	
MARK SHAPE	:	        	
MARK DISPLAY	:	YES NO	
COORDINATE	:	LAT/LON. <u>RNG./BRG.</u> TIME DIFF.	
INT. BAN	:	0 . 0 0 NM	
COMMENT	:	07:47 1706.15	
RUN			
TURN WHEEL/[F1][F2] : SELECT		PRESS LEFT BUTTON : ENTER	
PRESS RIGHT BUTTON : CLOSE		[F4]LONG : SCREENSHOT	

6. PLOTTER OPERATION (C-TYPES)

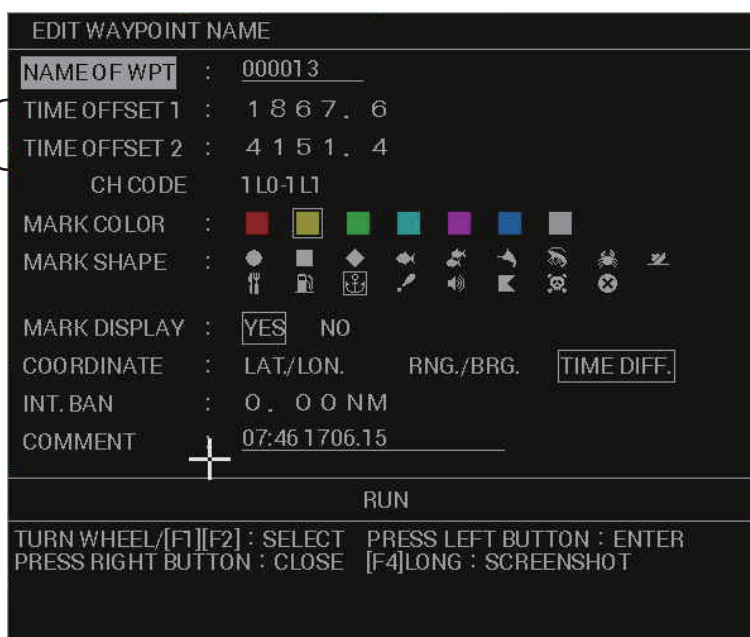
7. Select [DISTANCE].
8. Enter the distance from Own Ship to the waypoint.
9. Select [BEARING].
10. Enter the bearing from Own Ship to the waypoint.
11. Referring to "Entering a waypoint at specific coordinates" on page 6-42, set the other attributes for the waypoint (name, color, etc).

Entering a waypoint using LORAN A/C

1. Open the menu.
2. Select [INITIAL SETTINGS].
3. Select [LORAN•DECCA].
4. Select [LORAN•DECCA SELECT].
5. Select [LORAN A] or [LORAN C] as required.
6. Select [BACK] twice.
7. Select [ROUTES•WAYPOINTS].
8. Select [SHOW WAYPOINTS LIST]. The [WAYPOINTS LIST] appears.
9. Press and hold **F1** to show the [EDIT WAYPOINT NAME] window.
10. Select [COORDINATES].
11. Select [TIME DIFF.].



[TIME OFFSET 1]/[TIME OFFSET 2] appear here when [TIME DIFF.] is selected at [COORDINATE]. (Requires [LORAN/DECCA SELECT] in the [LORAN•DECCA] menu to be set as either [LORAN A] or [LORAN C].)



12. Select [TIME OFFSET1].
13. Set the first time offset.
14. Select [TIME OFFSET2].
15. Set the second time offset.
16. Referring to "Entering a waypoint at specific coordinates" on page 6-42, set the other attributes for the waypoint (name, color, etc).

Entering a waypoint using DECCA

1. Open the menu.
2. Select [INITIAL SETTINGS].
3. Select [LORAN•DECCA].
4. Select [LORAN•DECCA SELECT].
5. Select [DECCA].
6. Select [BACK] twice.
7. Select [ROUTES•WAYPOINTS].
8. Select [SHOW WAYPOINTS LIST]. The [WAYPOINTS LIST] appears.
9. Press and hold **F1** to show the [EDIT WAYPOINT NAME] window.
10. Select [COORDINATES].
11. Select [TIME DIFF.].

[LANE 1]/[LANE 2] appear here
when [TIME DIFF.] is selected at
[COORDINATE].
(Requires [LORAN/DECCA
SELECT] in the [LORAN•DECCA]
menu to be set as [DECCA].)

EDIT WAYPOINT NAME	
NAME OF WPT	: 000013
LANE 1	: 2 F : 0 9 . 1 2
LANE 2	: 1 A : 3 0 . 4 9
CHAIN	01 S BAL TIC R-G
MARK COLOR	:
MARK SHAPE	:
MARK DISPLAY	: ☒ YES ☐ NO
COORDINATE	: LAT/LON. RNG./BRG. TIME DIFF.
INT. BAN	: 0 . 0 0 NM
COMMENT	: 07:46 1706.15
RUN	
TURN WHEEL/[F1][F2] : SELECT PRESS LEFT BUTTON : ENTER PRESS RIGHT BUTTON : CLOSE [F4]LONG : SCREENSHOT	

12. Select [LANE1].
13. Set the first lane offset.
14. Select [LANE2].
15. Set the second lane offset.
16. Referring to "Entering a waypoint at specific coordinates" on page 6-42, set the other attributes for the waypoint (name, color, etc).

6.4.2 How to edit a waypoint

You can edit the waypoint information for all saved waypoints from the waypoints list.

Note: This procedure requires [ROUTE DATA SOURCE] in the [ROUTE•WAYPOINTS] menu to be set to [INTERNAL].

1. Open the menu.
2. Select [ROUTES•WAYPOINTS].
3. Select [SHOW WAYPOINTS LIST]. The [WAYPOINTS LIST] appears.
4. Place the cursor on the waypoint you want to edit, then left-click. the [EDIT WAYPOINT NAME] window appears.

Note 1: You can sort the waypoint list in alphabetical order, by range from own ship, by mark shape, or by order in which they were saved (see section 6.4.4).

Note 2: Mark color and shape for waypoints whose setting for [INT. BAN] is other than [0.00NM] cannot be edited.

Note 3: Mark name, color and shape for MOB waypoints cannot be edited.

Note 4: Changes made to mark attribute from the EDIT WAYPOINT NAME window are applied to all future mark entered at the Own Ship position or cursor location.

5. Edit the waypoint attributes as required.
 6. Select [RUN]. A confirmation window appears.
 7. Select [RUN] again to overwrite the waypoint. Select [CANCEL] to cancel the changes. If you selected [RUN], the window closes automatically.
- Note:** If the waypoint is registered as part of a route, another confirmation window appears. Select the appropriate option.

6.4.3 How to delete a waypoint

You can delete a waypoint either from on the screen, or from the [WAYPOINTS LIST].

Note: This procedure requires [ROUTE DATA SOURCE] in the [ROUTE•WAYPOINTS] menu to be set to [INTERNAL].

Deleting a waypoint on-screen

1. Place the cursor on the waypoint you want to delete.
2. Press the **TARGET CANCEL** key. A confirmation window appears.
3. Select [RUN] to delete the selected waypoint, or select [CANCEL] to keep the waypoint.
If you selected [RUN], the waypoint is deleted from the screen, and is also removed from the [WAYPOINTS LIST].

Deleting a waypoint from the [WAYPOINTS LIST]

1. Open the menu.
2. Select [ROUTES•WAYPOINTS].
3. Select [SHOW WAYPOINTS LIST]. The [WAYPOINTS LIST] appears.
4. Select the waypoint you want to delete, then press the **CANCEL TRAILS** key. A confirmation message appears.
5. Select [RUN] again to delete the waypoint. Select [CANCEL] to keep the waypoint. If you selected [RUN], the window closes automatically.

6.4.4 How to search for a waypoint

You can search for waypoints with one of the following methods:

- Sort the list.
- Search for a waypoint by name.

Sorting the [WAYPOINTS LIST]

1. Open the menu.
2. Select [ROUTES•WAYPOINTS].
3. Select [SHOW WAYPOINTS LIST]. The [WAYPOINTS LIST] appears.
4. Select [SORT].
5. Select the sorting method.
 - [ALPHA. ORD]: sort the list in order of MOB→Numerical→Alphabet.
 - [RNG ORDER]: sort the list in order of range from own vessel.
 - [MARK SHAPE]: sort the list in order of MOB→Intrusion Ban mark→marks in the order in which they appear in the [EDIT WAYPOINT NAME] window.
 - [REG. ORDER]: sort the list from oldest waypoint to newest waypoint.
6. Right-click to close the window.

Searching for waypoints by name

1. Open the menu.
2. Select [ROUTES•WAYPOINTS].
3. Select [SHOW WAYPOINTS LIST]. The [WAYPOINTS LIST] appears.
4. Select [SEARCH]. The software keyboard appears.
5. Referring to section 1.5.3, enter the name you want to search for (max. six characters).
6. Select [CONFIRM]. Waypoints which match your search appear at the top of the list.
7. Right-click to close the window.

6.4.5 How to set the voyage speed for calculations

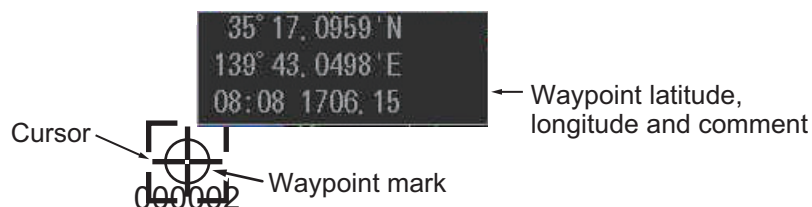
Voyage calculations such as ETA require a speed value in order to display an estimate. You can set a speed for these calculations either manually, or allow the system to automatically make calculation based on your speed at the time the calculation is made.

1. Open the menu.
2. Select [ROUTES•WAYPOINTS].
3. Select [SHOW WAYPOINTS LIST]. The [WAYPOINTS LIST] appears.
4. Select [SPD FOR TTG CALC].
5. Select the appropriate calculation method.
 - [T.SHP SPD]: calculation are based on your actual speed.
 - [ENT VALUE]: calculations are based on the entered speed.

If you selected [T.SHP SPD], go to step 7.
If you selected [ENT VALUE], go to step 6.
6. Spin the scrollwheel to set the speed.
7. Select the waypoint you want to travel to, from the [WAYPOINTS LIST].
The indications "EST TIME OF ARR." and "TIME TO GO" show the updated estimated time of arrival and time to go.
8. Close the window.

6.4.6 How to view waypoint information

Place the cursor on the waypoint whose information you want to view. A pop up window appears with the waypoint's latitude, longitude and comment.



Note: If the pop up information does not appear, check the following menu is set to [ON]: [MAIN MENU] → [ROUTES•WAYPOINTS] → [WPT POP UP INFO.].

6.4.7 How to change the on-screen size of waypoint indications

You can change the size of the waypoint indications to suit your requirements.

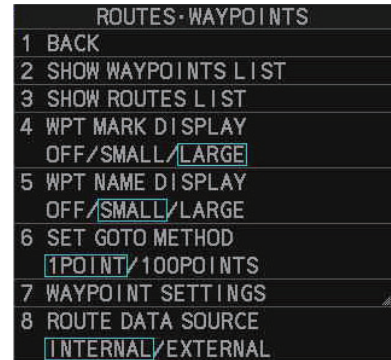
1. Open the menu.
2. Select [ROUTES•WAYPOINTS].
3. Select [WPT MARK DISPLAY].
4. Select [OFF], [SMALL] or [LARGE] as required.



[SMALL]



[LARGE]



- [LARGE]: Waypoint mark symbols appear in a larger size.
 - [SMALL]: Waypoint mark symbols appear as “x”, regardless of the symbol selected.
 - [OFF]: All waypoints, except active route waypoints and routes, are hidden.
5. Select [WPT NAME DISPLAY].
 6. Select [OFF], [SMALL] or [LARGE] as required.



[OFF]



[SMALL]



[LARGE]

- [LARGE]: Waypoint mark names appear in a larger size.
 - [SMALL]: Waypoint mark names appear in a smaller size.
 - [OFF]: All waypoint mark names are hidden.
7. Close the menu.

6.4.8 How to change the way waypoint names are displayed

By default, waypoints appear with one or more “0”s at the front of their name. You can hide these unnecessary zeros.

1. Open the menu.
2. Select [ROUTES•WAYPOINTS].
3. Select [WAYPOINT SETTINGS].
4. Select [WPT NAME ZERO DISPLAY].
5. Select [HIDE “0”] or [ALL “0”] as required.



[HIDE “0”]



[ALL “0”]

6. Close the menu.

6.4.9 How to use external waypoints

You can show waypoints and routes from a connected GPS navigator on the radar screen. You can also set these external waypoints and routes as destinations from the radar. A total of 100 external waypoints/routes can be stored and displayed at one time.

Note: This feature requires either the WPL sentence or the RTE sentence to be input from the GPS navigator.

1. Open the menu.
2. Select [ROUTES•WAYPOINTS].
3. Select [ROUTE DATA SOURCE].
4. Select the appropriate setting.
 - [INTERNAL]: External waypoints and routes are not used. This is the default setting.
 - [EXTERNAL]: External waypoints appear on the screen and in the [WAYPOINTS LIST]. External waypoint marks are automatically assigned the mark symbol which is selected at the [MARK] button, on the InstantAccess bar™, at the time which the external waypoint was received.
5. Close the menu.

Note: The route data source is automatically changed to [INTERNAL] if a MOB mark is entered. Further, if the data source is changed to [EXTERNAL] while a MOB mark is displayed, the MOB mark is hidden.

6.5 Routes

Often a trip from one place to another involves several course changes, requiring a series of route points (waypoints) which you navigate to, one after another. The sequence of waypoints leading to the ultimate destination is called a route.

6.5.1 How to create a route

You can create a route with one of the three following methods.

- Use existing waypoints.
- Start a route from your current position.
- Use an existing track (own or other ship).

Note: The above methods require [ROUTE DATA SOURCE] in the [ROUTE•WAYPOINTS] menu to be set to [INTERNAL].

Creating a route from existing waypoints

1. Open the menu.
2. Select [ROUTES•WAYPOINTS].
3. Select [SHOW ROUTES LIST]. The [ROUTE LIST] appears.

ROUTES LIST			SEL. PAGE _ 1/1	
NAME	COMMENT	TTL DIST	WPT QTY	SET AS DEST.
000001		13.10NM	4	
BACK TRACK : DIST. TIME ☐ NO			EST TIME OF ARR.	
RNG LOG : 0 0 0 . 1 0 0 NM			6/15 08 : 51	
TIME LOG : 0 0 H 0 1 M			TIME TO GO	
SORT : ☐ ALPHA. ORD ☐ RNG ORDER			1 HR 05 MIN	
REG. ORDER			DIREC : FWD	
SPD FOR : ☐ T. SHP SPD : 13.1 kn			+	
TTG CALC ENT VALUE : 0 0 . 0 kn				
SEARCH : _____				
TURN WHEEL/[F1][F2] : SELECT PRESS LEFT BUTTON : EDIT ROUTE				
[ENTER] : NEW WPT [F1]LONG : REVERSE RTE [F2]LONG : SET DEST.				
[CANCEL] : DELETE ROUTE PRESS RIGHT BUTTON : CLOSE				
[0]-[9]/[F3][F4] : PAGE NO/MOVE PAGE [F4]LONG : SCREENSHOT				

4. Press the **ENTER MARK** key. The [ROUTE NAME/ENTER COMMENT] window appears. The system automatically assigns routes a default name (number). To keep the default route name, go to step 7. To change the name, go to step 5.

ROUTE NAME/ENTER COMMENT	
ROUTE NAME	: 000005
COMMENT	: _____
RUN	

5. Select [ROUTE NAME].
6. Referring to section 1.5.3, enter a name for the new route.
7. Select [COMMENT].
8. Referring to section 1.5.3, enter a comment for the new route.

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- Select [RUN]. The [ROUTE TURN POINTS LIST] appears.

000005 ROUTE TURN POINTS LIST				SEL PAGE _ 1/1	
	WPT.	LATITUDE/LONGITUDE		DISTANCE	TTG
1					
2					
3					
4					
5					
WAYPOINTS LIST				SEL PAGE _ 1/3▶	
NAME		LATITUDE/LONGITUDE		INT. BAN	COMMENT
000002	🌟	35° 19.3297'N 139° 41.5761'E		0.00NM	07:51 1706.15
000004	🌟	35° 18.8940'N 139° 42.2283'E		0.00NM	07:51 1706.15
000005	🌟	35° 15.1021'N 139° 46.7503'E		0.00NM	08:16 1706.15
000006	🌟	35° 14.6031'N 139° 47.2464'E		0.00NM	08:16 1706.15
000007	🌟	35° 20.8348'N 139° 41.7893'E		0.00NM	07:46 1706.15
SORT		: ALPHA. ORD	RNG ORDER		
		MARK SHAPE	REG. ORDER		
SEARCH		:	+		
TURN WHEEL/[F1][F2] : SELECT PRESS LEFT BUTTON : WPT LIST					
[F1]LONG : DELETE WPT [F2]LONG : SKIP WPT					
PRESS RIGHT BUTTON : BACK TO ROUTES LIST					
[0]-[9]/[F3][F4] : PAGE NO/MOVE PAGE [F4]LONG : SCREENSHOT					

- Press the **left button** to move the cursor into the [WAYPOINTS LIST] in the lower half of the window.
- Select the waypoints you want to use for the new route. Selected waypoints are moved into the upper half of the window.

Note 1: Waypoints appear in the sort order selected at the [WAYPOINTS LIST] window. You can re-sort the waypoints from the [ROUTE TURN POINTS LIST].

Note 2: If your route has more than six waypoints, the sixth waypoint and onwards appear on the next page(s). Press **F3** or **F4** to change pages.
- Repeat step 11 as required.
- Press the **right button** twice to go back to the [ROUTE LIST]. The new route appears in the list.

ROUTES LIST				SEL. PAGE _ 1/1	
NAME	COMMENT	TTL DIST	WPT QTY	SET AS DEST.	
000001		13.10NM	4		
00002		6.83NM	4		
BACK TRACK : DIST. TIME [NO]				EST TIME OF ARR.	
RNG LOG : 0 0 0 . 1 0 0 NM				6/15 08 : 29	
TIME LOG : 0 0 H 0 1 M				TIME TO GO	
SORT : [ALPHA. ORD]		RNG ORDER		0HR 40MIN	
		REG. ORDER			
SPD FOR : [T. SHP SPD] : 12.7 kn				DIREC : FWD	
TTG CALC ENT VALUE : 0 0 . 0 kn					
SEARCH : _____					
TURN WHEEL/[F1][F2] : SELECT PRESS LEFT BUTTON : EDIT ROUTE					
[ENTER] : NEW WPT [F1]LONG : REVERSE RTE [F2]LONG : SET DEST.					
[CANCEL] : DELETE ROUTE PRESS RIGHT BUTTON : CLOSE					
[0]-[9]/[F3][F4] : PAGE NO/MOVE PAGE [F4]LONG : SCREENSHOT					

The total distance, time to go and ETA for the route also appear in the list.

To use the route for navigation, press and hold the **F2** key.

To navigate the route waypoints in reverse order, press and hold the **F1** key.

- Close the menu.

Creating a route from your current position

You can create a route by recording a section of your voyage, based either on distance or time. The [BACKTRACK] feature can store a total of 100 waypoints, including waypoints entered manually while recording, to a route in this manner.

While [BACKTRACK] is active, the “save” icon () appears in the upper-right section of the screen.

1. Open the menu.
2. Select [ROUTES•WAYPOINTS].
3. Select [SHOW ROUTES LIST].
4. Select [BACKTRACK].
5. Select the appropriate saving method.
 - [DIST.]: save a preset distance of your voyage as a route.
 - [TIME]: save a preset time (portion) of your voyage as a route.
 - [NO]: deactivate the BACKTRACK feature.
6. Set the time or distance intervals which the [BACKTRACK] feature creates a waypoint automatically.
 - [RNG LOG]: create a waypoint at this distance interval. For example, if setting is [000.100 NM], a waypoint is created every 000.100 NM.
 - [TIME LOG]: create a waypoint at this time interval. For example, if the setting is 00H01M, a waypoint is created every minute.
7. Close the window. Your route is now automatically recorded and waypoints appear on the screen at the set intervals.
8. To add a waypoint manually, do the following:
 - 1) Referring to section 1.7.1, hide the cursor.
 - 2) Right-click within the radar effective radius to show the [CURSOR] menu.
 - 3) Select [WPT]. An pop up message similar to the one shown to the right appears to inform you that a new waypoint was successfully entered.



To deactivate the [BACKTRACK] feature, repeat steps 1 to 5 in the above procedure, then select [NO]. The feature is also deactivated automatically when the recorded route reaches 100 waypoints.

Creating a route from existing tracks

You can convert your tracks, or the tracks of other vessels, to routes.

1. Open the menu.
2. Select [MARKS•PLOTTER].
3. Select [TRACK].
4. Select [CONV. TRACK TO RTE]. The [TRACK ROUTE CONVERSION] window appears and track points are shown with small box-shaped icons () at regular intervals along the track.

TRACK ROUTE CONVERSION	
SEL METH	: BTWN 2PTS
FILTER SET	
NO. OF DST TO CONV : 3/100	
[F3] : CHANGE TRACK PT TO WPT [F4]LONG : SCREENSHOT	
[F4] : REVERT WPT TO TRACK PT PRESS RIGHT BUTTON : BACK	
PRESS LEFT BUTTON : CONVERT TO ROUTE	

5. Select the track point at which you want to start the conversion.
6. Select the track point at which you want to end the conversion. The [FILTER SET] is now active and you can set the finer details of the conversion.

TRACK ROUTE CONVERSION	
SEL METH	: BTWN 2PTS
FILTER SET	
DISTANCE	: 000.300 NM
ANGLE	: 001.0°
RUN CONV.	
NO. OF DST TO CONV : 0/100	
TURN WHEEL/[F1][F2] : SELECT PRESS LEFT BUTTON : ENTER	
FINE TUNE ROUTE AFTER CONVERSION	
PRESS RIGHT BUTTON : BACK [F4]LONG : SCREENSHOT	

Tracks have a large number of points, you can filter which points will be converted from track points to route points (waypoints). The filter lets you select a distance interval and a bearing difference. Track points that meet both criteria are converted.

7. Select [DISTANCE].
8. Set the distance interval as required.
Only track points at this distance interval are converted to route points (waypoints). Track points which are within the distance range are ignored. For example, if you set [DISTANCE] as [010.00NM], the track points at 10NM intervals, from the start point to the end point, are converted. However, any track points located in between are ignored.
9. Select [ANGLE].
10. Set the bearing minimum.
Only track points which are outside this angle, either to port or starboard, are converted. For example, if you set [ANGLE] as [005.0°], only track points with a bearing of more than 5° from the previous convertible track point are converted.

11. Select [RUN CONV.]. The number of track points which will be converted appears in the window at [NO. OF DST TO CONV].
You can also remove add or track points from the conversion manually at this point.
To cancel conversion for a point, select the point, then press **F3**.
To add a point for conversion, select the point, then press **F4**.
12. Press the **left button**. A confirmation message appears.
13. Select [RUN] to convert the selected track points to waypoints.
Select [CANCEL] to stop the conversion and go back to the [TRACK ROUTE CONVERSION] window.
If you selected [RUN], the new route appears on the screen and also in the [ROUTES LIST]. The new route is automatically assigned the earliest available route number as a name.

6.5.2 How to edit a route

Note: The following procedures require [ROUTE DATA SOURCE] in the [ROUTE•WAYPOINTS] menu to be set to [INTERNAL].

Inserting a waypoint into an existing route

You can insert waypoint into existing routes with the following procedure.

1. Open the menu.
2. Select [ROUTES•WAYPOINTS].
3. Select [SHOW ROUTES LIST].
4. Select the route to which you want to insert a waypoint. The [ROUTE NAME/ENTER COMMENT] window appears.
5. Select [RUN]. The [ROUTE TURN POINTS LIST] appears.
6. Select the waypoint where you want to insert a new waypoint. The cursor moves to the lower half of the window.
7. Select the waypoint you want to insert. The newly inserted waypoint appears immediately before the waypoint selected at step 6.
Note: If you have incorrectly inserted a waypoint, press the **right button** to go back to the [ROUTE TURN POINTS LIST], select the incorrect waypoint, then press and hold **F1**.
8. Close the menu.

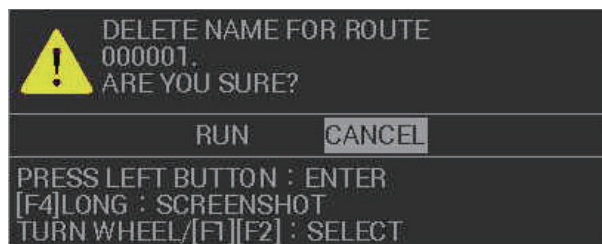
Removing a waypoint from a route

1. Open the menu.
2. Select [ROUTES•WAYPOINTS].
3. Select [SHOW ROUTES LIST].
4. Select the route to which you want to insert a waypoint. The [ROUTE NAME/ENTER COMMENT] window appears.
5. Select [RUN]. The [ROUTE TURN POINTS LIST] appears.
6. Select the waypoint you want to remove, then press and hold **F1**. The selected waypoint is removed from the route.
7. Close the menu.

6.5.3 How to delete a route

Note: The following procedures require [ROUTE DATA SOURCE] in the [ROUTE•WAYPOINTS] menu to be set to [INTERNAL].

1. Open the menu.
2. Select [ROUTES•WAYPOINTS].
3. Select [SHOW ROUTES LIST].
4. Select the route you want to delete, then press the **CANCEL TRAILS** key. A confirmation window appears.



5. Select [RUN] to delete the route, or select [CANCEL] to go back to the [ROUTES LIST].
6. Close the window.

6.5.4 How to search for a route

You can search for a route in the [ROUTES LIST] with one of the two following methods; sort the list, or search by name.

Sorting the [ROUTES LIST]

1. Open the menu.
2. Select [ROUTES•WAYPOINTS].
3. Select [SHOW ROUTES LIST].
4. Select [SORT].
5. Select the sorting method.
 - [ALPHA. ORD]: sort the routes in order of Numerical→Alphabet.
 - [RNG ORDER]: sort the routes in order of total route range (distance).
 - [REG. ORDER]: sort the routes from oldest route to newest route.
6. Right-click to close the window.

Searching for routes by name

1. Open the menu.
2. Select [ROUTES•WAYPOINTS].
3. Select [SHOW ROUTES LIST]. The [ROUTES LIST] appears.
4. Select [SEARCH]. The software keyboard appears.
5. Referring to section 1.5.3, enter the name you want to search for (max. six characters).
6. Select [CONFIRM]. Routes which match your search appear at the top of the list.
7. Right-click to close the window.

6.5.5 How to set the voyage speed for calculations

Voyage calculations such as ETA require a speed value in order to display an estimate. You can set a speed for these calculations either manually, or allow the system to automatically make calculation based on your speed at the time the calculation is made.

1. Open the menu.
2. Select [ROUTES•WAYPOINTS].
3. Select [SHOW ROUTES LIST]. The [ROUTE LIST] appears.
4. Select [SPD FOR TTG CALC].
5. Select the appropriate calculation method.
 - [T.SHP SPD]: calculation are based on your actual speed.
 - [ENT VALUE]: calculations are based on the entered speed.

If you selected [T.SHP SPD], go to step 7.
If you selected [ENT VALUE], go to step 6.
6. Spin the scrollwheel to set the speed.
7. Select the route you want to navigate, from the [ROUTES LIST].
The indications "EST TIME OF ARR." and "TIME TO GO" show the updated estimated time of arrival and time to go.
8. Close the window.

6.5.6 How to use external routes

You can show waypoints and routes from a connected GPS navigator on the radar screen. You can also set these external waypoints and routes as destinations from the radar. A total of 100 external waypoints/routes can be stored and displayed at one time.

Note: This feature requires the RTE sentence to be input from the GPS navigator.

1. Open the menu.
2. Select [ROUTES•WAYPOINTS].
3. Select [ROUTE DATA SOURCE].
4. Select the appropriate setting.
 - [INTERNAL]: External routes are not used. This is the default setting.
 - [EXTERNAL]: External routes appear on the screen and in the [ROUTES LIST].
5. Close the menu.

Note: The route data source is automatically changed to [INTERNAL] if a MOB mark is entered. Further, if the data source is changed to [EXTERNAL] while a MOB mark is displayed, the MOB mark is hidden.

6.6 Destinations

In navigation terminology, a destination point is a particular geographical location on a voyage whether it be a starting, intermediate or destination point. By setting a way-point, information to get you to the waypoint with the shortest distance and time can be displayed.

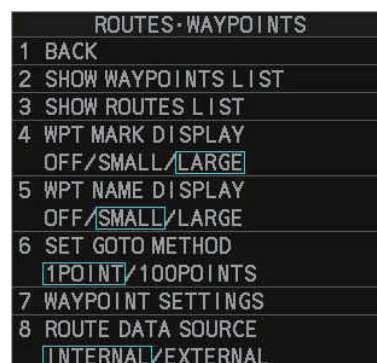
6.6.1 How to set up GOTO points

GOTO points are temporary waypoints which are used in quick route functions. GOTO points and quick routes are retained after turning the power off, however old GOTO points and quick routes are replaced when a new GOTO point or quick route is saved.

Setting the GOTO method

The GOTO function can use one of two methods to create a quick route, a single destination, or a series of waypoints.

1. Open the menu.
2. Select [ROUTES•WAYPOINTS].
3. Select [SELECT GOTO METHOD].
4. Select the required method.
 - [1POINT]: create a single GOTO point as the destination.
 - [100POINTS]: create up to 100 GOTO waypoints as a quick route.
5. Close the menu.



Setting a single GOTO destination

Note: The following procedure requires [ROUTE DATA SOURCE] in the [ROUTE•WAYPOINTS] menu to be set to [INTERNAL].

1. Set the GOTO method as [1POINT], referring to "Setting the GOTO method" on page 6-58.
2. Do one of the following:
 - For RCU-031 users only: Place the cursor on the location you want to go to, then press the **GOTO** key.
 - Use the cursor menu:
 - 1) Right-click within the radar effective radius to show the [CURSOR] menu.
 - 2) Select [GOTO].
 - 3) Place the cursor on the location you want to go to, then left-click. A GOTO point appears at the selected location, and a route line appears from your current location to the GOTO point, with arrows indicating the direction of travel.

