Covered in this chapter:
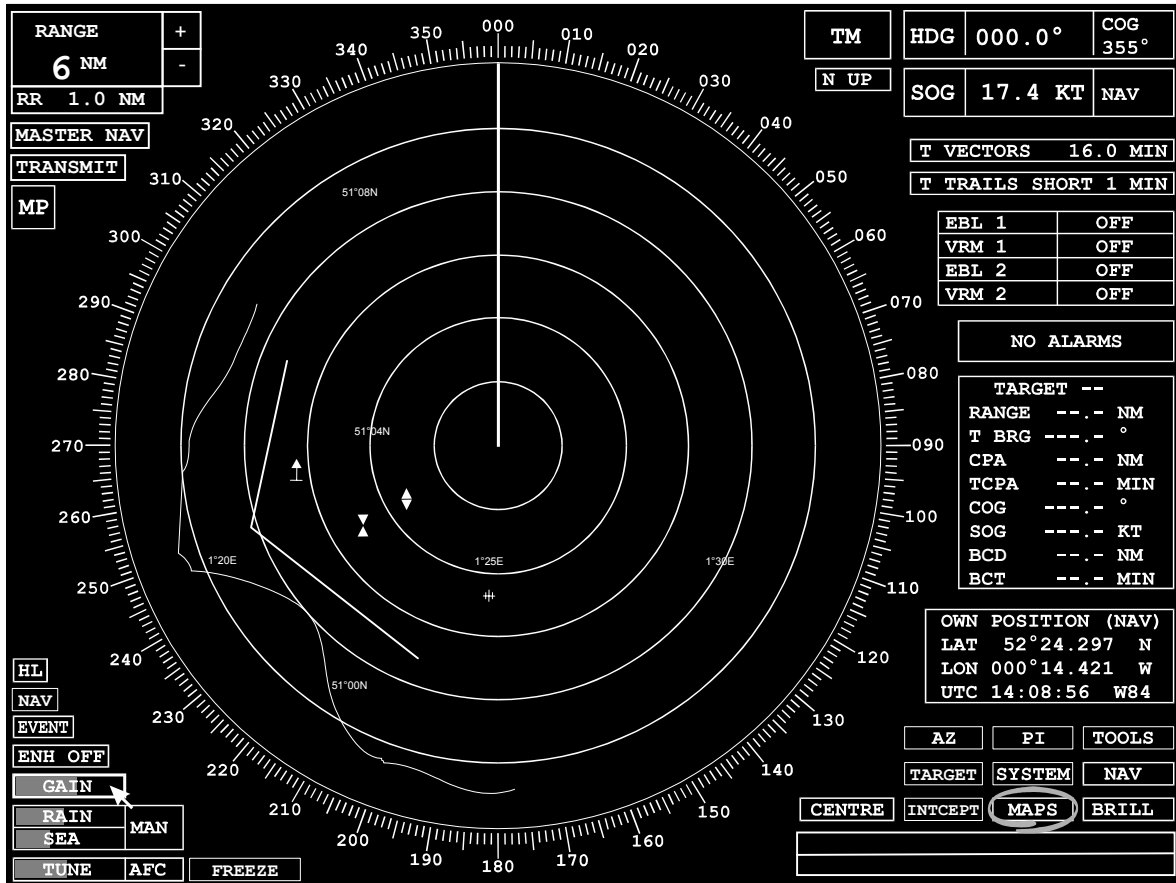
- Displaying maps.
- Selecting a map and choosing which features will be displayed.
- Creating, editing and deleting maps.
- Creating, editing and deleting guard lines.

Introduction

The **MAPS** facility allows user defined Maps and Guard Lines to be displayed within the video circle.

MAPS can be displayed in either STANDBY or TRANSMIT mode.

They can only be displayed in stabilized presentation modes (North-Up or Course-Up) and only on range scales of 0.5NM and above.

They cannot be displayed at latitudes further north than 78°N or further south than 78°S.

Maps are stored as files on a memory card and can be selected for display either individually or as a folio. A folio is a collection of up to 10 maps. Up to 500 elements of a map can be displayed at any one time. When a folio is selected for display, the closest 500 elements to own ship are automatically selected from ALL the maps in the folio. This enables maps for particular routes to be grouped together and automatically displayed when own ship's lat/long is appropriate.

Offsets

In order to compensate for errors in the alignment of maps it is possible to add an OFFSET to a map position. The offset is applied to all points of a map and to all associated layers. The same offset is applied to all maps in a folio.

Layers

Individual maps are LAYERED with each layer containing a different type of data such as coastlines, buoys, etc. Individual layers can then be selected for display. Layers are provided for the following sets of data.

- Dangers.
- Buoys and beacons.
- Coastline.
- Ship safety contour
- Traffic zones.
- Prohibited areas.
- Channel boundaries

***Note** – Layers, line type and colour, are designed to comply with the ECDIS IEC61174 (Draft) specification.*

Guard Lines

Up to twenty guard lines, each defined by a start and end position, can be displayed. When the guard lines are 'active', an alarm is raised when any of the lines are crossed by own ship. Guard lines are displayed as thick red lines when active. When a crossing alarm is raised, the guard line being crossed will flash until the alarm is acknowledged. Guard lines can be active in stabilised presentation modes only, in both STANDBY and TRANSMIT. They are only displayed when active in TRANSMIT. If the radar is switched to unstabilised, the guard lines will be set to inactive.

Datums

Maps are always displayed and stored referenced to the W84 (WGS84) datum. However, manually entered map elements can be entered using lat/long references in datums other than W84 (WGS84).
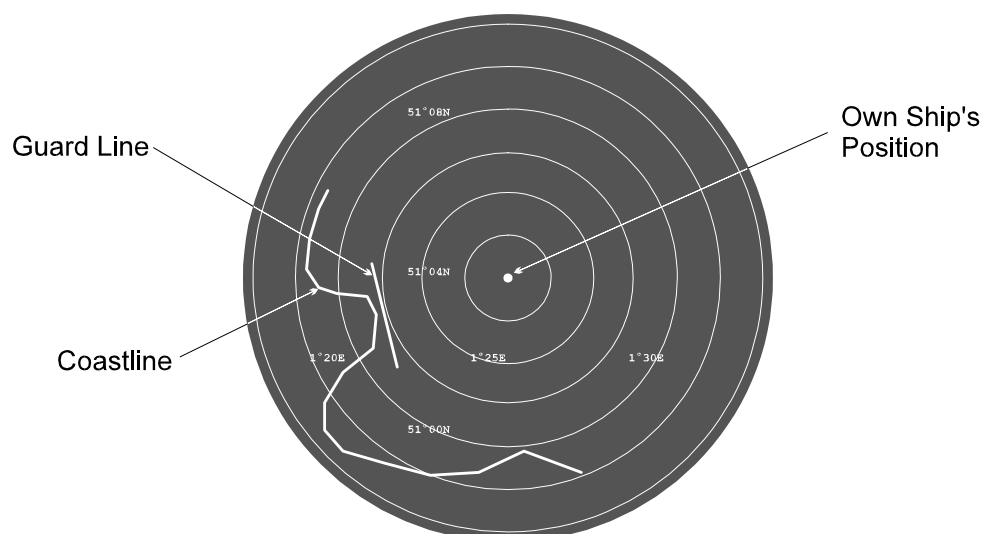
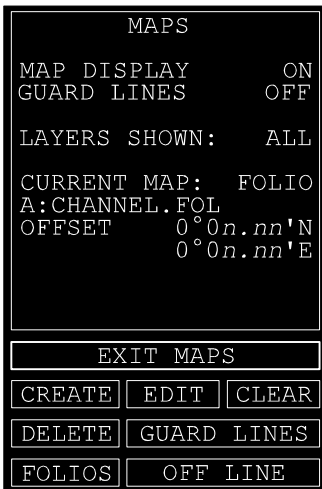### Turning the Maps Display ON and OFF

This key provides an easy way of suppressing the display of maps and guard lines.

MAPS

1. Position the screen cursor over the MAPS soft key.
2. Right click to toggle between maps ON and maps OFF.

Note – *When* **ON** *is selected, only the map features which were previously turned ON from within the MAPS menu are displayed. See* **Map Facilities***.*

Video Circle
MAPS Display

```
   MAPS

       MAPS

MAP DISPLAY        ON
GUARD LINES       OFF

LAYERS SHOWN:     ALL

CURRENT MAP:   FOLIO
A:CHANNEL.FOL
OFFSET      0°0n.nn'N
            0°0n.nn'E


     EXIT MAPS
 CREATE   EDIT   CLEAR
 DELETE   GUARD LINES
 FOLIOS     OFF LINE
```

MAP Facilities

1. Position the screen cursor over the MAPS soft key.
2. Left click to reveal the MAPS menu and soft keys shown on the left.

The soft keys, associated with the MAPS menu, enable maps, layers, folios and guard lines to be created, edited, cleared and deleted.

Notes

1. *For users with a Navline Interface fitted and initialized, see the **Navline Interface** section at the end of the chapter.*

Selecting Maps and Folios from a Memory Card

1. Within the MAPS menu, position the screen cursor over the *filename* of the map or folio currently selected, or the line of dashes if none have been previously selected. (A:CHANNEL.FOL in the example above left).
2. Left click to reveal a drop down menu as shown on the left.

```
    CARD n:

CALAIS1  .MP
CALZEB1  .MP
CALZEB2  .MP
CALZEB3  .MP
CHANNEL  .FOL
FOLKSTON .MP
LAWRENCE .MP
NORTHSEA .FOL
POSREF   .MP
ROTTDAM  .MP
ROSSONY  .MP
```

Note – This menu contains a list of filenames for the maps and folios stored on the selected memory card, CARD A or CARD B. The card selected is indicated in the line at the top of the menu. A right click will close the menu with no further action.
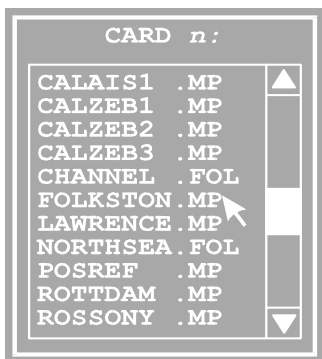
3. Position the screen cursor over the CARD n: line, and left click to select the card required.
4. Position the screen cursor over the filename of the map or folio you wish to recall. The file selected will be highlighted. Use the scroll facility if required.
5. Left click to select.
   ALL layers of the map or folio selected will be switched ON.

*Note – A selected map or folio will NOT be switched ON if certain parameter limits are exceeded, see **Warning Prompts** at the end of the Chapter. A warning prompt will also be given if maps are missing from a selected folio. The missing maps can be identified by left clicking on the FOLIOS soft key – the missing maps are shown in RED.*
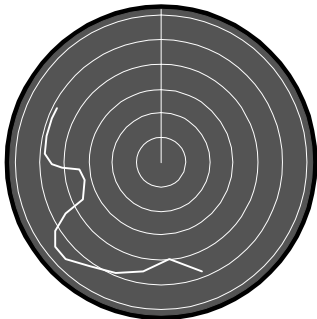
Turning the Selected Map On and OFF

`MAP DISPLAY              ON`

1. Within the MAPS menu, position the screen cursor over the MAP DISPLAY caption.
2. Left click to toggle between map ON and map OFF.

Note – *A selected map or folio will NOT be switched ON if certain parameter limits are exceeded, see **Warning Prompts** at the end of the Chapter.*

Map ON

Offsetting Map position

A map can be re-aligned by up to a maximum of 9.99' in both axis to compensate for errors in position information. This allows a map to be aligned with known targets and map symbols. Offsetting can be achieved by either the direct input of a numeric offset, or by a process of dragging within the video circle.

Offsetting a Map by Direct Input

`OFFSET      0°0`$n.nn$`'N`

1. Within the MAPS menu, position the screen cursor over the OFFSET line.
2. Right click to reveal the OFFSET drop down keypad from where the relevant offsets can be entered, see Chapter 15.

Offsetting a Map in the Video Circle

1. Within the MAPS menu, position the screen cursor over the OFFSET line.
2. Left click to activate the dragging facility.
3. Move the cursor into the video circle and position it over a map segment.
4. Press and hold down the left key, and then drag the map to the required offset position.
5. Release the left key.
   The offset will not be accepted if the map is dragged beyond the 9.99' limits in either axis. In such cases, the map will return to its original position when the key is released.
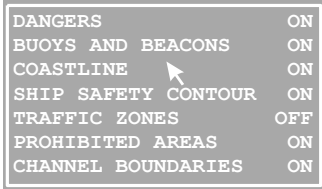
Selecting Map Layers

Where a map contains more than one layer, the selection and deselection of layers is made via the LAYERS SHOWN caption in the MAPS menu.

```
LAYERS SHOWN:        ALL
```

1. Position the screen cursor over the LAYERS caption.
2. Left click to reveal a drop down menu, containing a list of the layers available, as shown on the left.

```
DANGERS                 ON
BUOYS AND BEACONS       ON
COASTLINE               ON
SHIP SAFETY CONTOUR     ON
TRAFFIC ZONES           OFF
PROHIBITED AREAS        ON
CHANNEL BOUNDARIES      ON
```

3. Position the cursor over the layer which is to be switched ON or OFF.
4. Left click to toggle the layer ON and OFF.
5. Right click to close the drop down menu.

Note – *If any layer is switched OFF, the LAYERS caption in the MAPS menu will change from ALL to USER, see example left. At least one layer must be selected ON at all times. If only one layer is switched ON, the user is prevented from switching that layer OFF until at least one other layer is switched ON first.*

```
LAYERS SHOWN:        USER
```

Activating and De-activating Guard Lines

```
GUARD LINES          OFF
```

1. Within the MAPS menu, position the screen cursor over the GUARD LINES caption.
2. Left click to toggle the guard line function between ON and OFF.
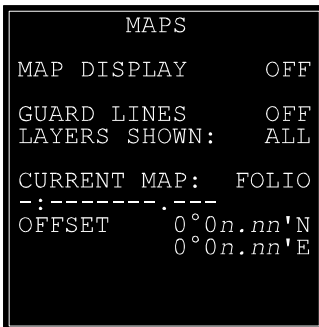
   When GUARD LINES are OFF (Inactive) no GUARD LINE alarms will be raised, and no GUARD LINES will be drawn on the screen.

   This function is also available within the GUARD LINES menu.

   See warning prompts at the end of the chapter.

Deselecting Maps and Folios

A map or folio can be deselected using the **CLEAR** soft key.

To deselect a map or folio;
1. Position the screen cursor over the CLEAR soft key.

2. Left click to clear the MAP or FOLIO currently selected in the MAPS menu.
   The filename is **dashed out** and the maps DISPLAY is forced **OFF**, see example left. Any map OFFSET that has been added is also cleared.

```
        MAPS

MAP DISPLAY      OFF

GUARD LINES      OFF
LAYERS SHOWN:    ALL

CURRENT MAP:   FOLIO
-:-------.---
OFFSET      0°0n.nn'N
            0°0n.nn'E
```

Deleting a Map from a Memory Card

⚠ **WARNING** - *THIS ACTION CANNOT BE UNDONE.*
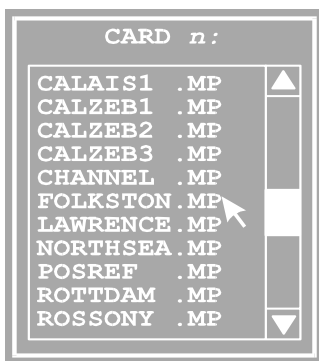
1. Position the screen cursor over the DELETE soft key.

2. Left click to reveal a drop down menu as shown on the left.

   Note – *This menu contains a list of filenames for the map stored on the selected memory card, CARD A or CARD B. The card selected is indicated in the line at the top of the menu. A right click will close the menu with no further action.*

```
        CARD n:

CALAIS1  .MP
CALZEB1  .MP
CALZEB2  .MP
CALZEB3  .MP
CHANNEL  .MP
FOLKSTON.MP
LAWRENCE.MP
NORTHSEA.MP
POSREF   .MP
ROTTDAM  .MP
ROSSONY  .MP
```

3. To change the selected card, position the screen cursor over the CARD n: line, and left click.
4. Position the screen cursor over the filename of the map you wish to delete. Use the scroll facility if required.
   The file selected will be highlighted.
5. Left click to delete. This will reveal a YES/NO dialog box. Left click on YES to delete the map.
   The selected map is now completely deleted from the memory card.

Creating and Editing Maps/Layers

The procedures for creating maps, and those for editing maps, are very similar. Editing is always for the map currently selected in the MAPS menu. See **Selecting Maps and Folios from a Memory Card**. When creating a map the user is initially prompted to enter a **new filename** for the map about to be created. After the new filename has been entered, the remaining procedures for creating a map are the same as those for editing.

Note: The preferred entry for MAPS is by entering their LAT/LONG position taken from a CHART, using the DATUM of the CHART. This will minimize any angular alignment errors caused by COMPASS and HM offset inaccuracies.

Creating a New Map

1. Position the screen cursor over the CREATE soft key.

2. Left click to reveal a drop down alpha-numeric keypad as shown on the left.
   Alpha-numeric keypads and their use are described in Chapter 15.
3. Enter the card and filename under which the new map will be saved.
4. When the card and filename is as required, position the screen cursor over the 'carriage return' symbol.
5. Left click to save.
   This will create the file on the selected memory card under the chosen filename, see notes below.

Notes

1. *If the chosen filename already exists, the name is not accepted, the keypad menu closes and the message 'File already exists' is displayed on the temporary prompt line.*

2. *If the chosen filename is accepted, the **MAP EDIT** menu is automatically displayed. Proceed to the section on map editing which follows.*

Editing a Selected Map

A map can be edited in TRANSMIT mode provided its lat/long is close to the current lat/long position. If this is not the case, the map must be edited in STANDBY mode. In order to do this, the cursor lat/long and range, must be set so that the map can be displayed.

Displaying a Map for Editing in STANDBY Mode

Note – *The MAP display is switched-OFF when changing from TRANSMIT mode to STANDBY mode. Hence, the MAP display must be switched-ON again when in STANDBY.*

```
MAPS
```
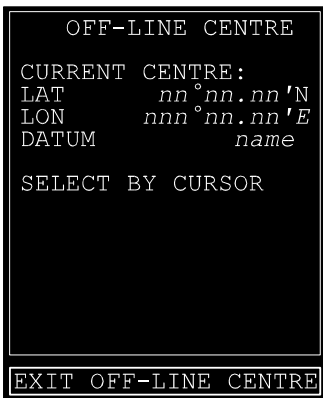
1. If necessary, select the MAPS facility by left clicking on the MAPS soft key.
2. If necessary, select the required map from the MAPS menu.

```
MAP DISPLAY          ON
```

3. Within the MAPS menu, position the screen cursor over the MAP DISPLAY caption.
4. Left click to toggle for map ON.

```
OFF-LINE
```

5. Position the screen cursor over the OFF-LINE soft key under the MAPS menu.
6. Left click to reveal the OFF-LINE CENTRE menu shown on the left.

```
   OFF-LINE CENTRE

CURRENT CENTRE:
LAT        nn°nn.nn'N
LON       nnn°nn.nn'E
DATUM          name

SELECT BY CURSOR




EXIT OFF-LINE CENTRE
```

Note – *The Lat/Long and datum information displayed in the menu defaults to the most recent values set in this mode.*

7. If the datum of the lat/long about to be entered (Step 8) is not that displayed in the menu, left click on the DATUM line to reveal a list of the datums available. Left click on the datum required.
8. Within the menu, left click on the LAT or LONG line to reveal a drop down numeric keypad. Use the keypad to enter the Lat/Long of the selected map.

```
LAT        nn°nn.nn'N
LON       nnn°nn.nn'E
DATUM          name
SELECT BY CURSOR
```

Additionally, a left click on the SELECT BY CURSOR line causes a + cursor to appear at the centre of the video circle. To change the centre position, left click with the cursor control at the appropriate position. The map will then be re-drawn, with this position as the centre of the video circle

The map can now be edited in the normal way using the editing procedures given on the following pages.

```
EXIT OFF-LINE CENTRE
```

A left click on the EXIT OFF-LINE CENTRE key will close the menu.

Map Editing Procedures

```
EDIT
```

1. Position the screen cursor over the EDIT soft key.

```
     EDIT MAPS

MAP BEING EDITED:
A:FOLKSTON.MP

MODE     ADD

LAYER BEING EDITED:
DANGERS

SYMBOL    ⌄

POSITION ENTERED:
LAT       nn°nn.nn'N
LON      nnn°nn.nn'E
DATUM          name

   EXIT EDIT MAPS
  SAVE  |  NEW LINE
          |  OFF-LINE
```

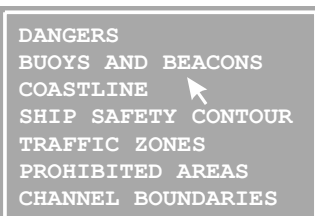2. Left click to reveal the EDIT MAPS menu and soft keys shown on the left.

    *Note – The particular layer of the map that you wish to edit MUST now be selected before proceeding, see **Selecting a Map Layer** below. When in EDIT mode all layers of a map will be displayed, when the edit is finished the LAYERS SHOWN will stay as ALL and not revert to USER. (See Selecting Map Layers earlier in the chapter).*

    The SYMBOL line will only be present in the menu if the selected layer contains symbols.

    Note – A left click on the EXIT EDIT MAPS soft key will close the menu and re-display the MAPS menu.

Selecting a Map LAYER

1. Position the cursor over the LAYER name caption in the menu (DANGERS in the example above left).
2. Left click to toggle through the LAYER options available.

```
DANGERS
BUOYS AND BEACONS
COASTLINE
SHIP SAFETY CONTOUR
TRAFFIC ZONES
PROHIBITED AREAS
CHANNEL BOUNDARIES
```

Alternatively a right click will reveal the drop down menu shown on the left. Left click on the type of layer required. The layer selected will appear in the LAYER name line of the EDIT MAPS Menu.

Each layer conveys information as a series of predefined lines or symbols as indicated below.

Dangers:	Various symbols, in magenta.
Buoys and beacons:	Various symbols, each with its own predefined colour (either red of green).
Coastline:	Continuous white line.
Ship safety contour:	Continuous grey line.
Traffic zones:	Continuous magenta line.
Prohibited areas:	Dashed magenta line
Channel boundaries:	Dashed grey line.

After a layer has been selected, select the required edit mode as follows.

Selecting an Edit MODE
1. Position the cursor over the Mode caption in the EDIT MAPS menu.
2. Left click to toggle through the EDIT options available (ADD, DELETE, MOVE or MODIFY).

Note – *The MODIFY option is only available when editing symbols. It is not available for editing 'lines'.*
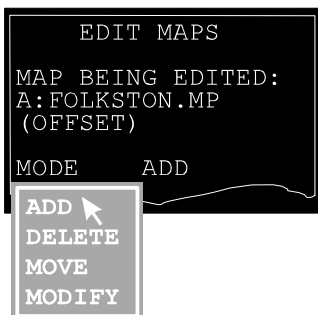
Alternatively a right click will reveal the drop down menu shown on the left. Left click on the edit mode required. The mode selected will appear in the MODE line of the EDIT MAPS Menu.

```
        EDIT MAPS

MAP BEING EDITED:
A:FOLKSTON.MP
(OFFSET)

MODE      ADD
 ADD
 DELETE
 MOVE
 MODIFY
```

Adding Lines and Symbols to a Map

The ADD mode of editing allows the user to add lines or symbols to the selected layer, either from within the video circle or by lat/long entries in the EDIT MAPS menu.

Note – *The maximum recommended number of elements stored in a map (an element is a single line or symbol) is 1000. The map will take longer to display if this number is exceeded.*

Adding Lines in the Video Circle

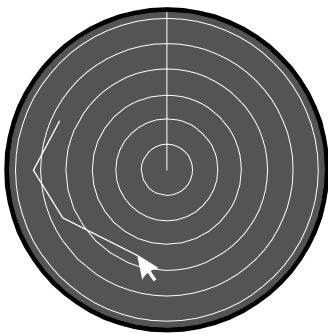This ONLY applies to layers which use lines.
1. Within the video circle, position the screen cursor at the start point of the line required.
2. Left click to define the point.
3. Move the cursor to the next point.
4. Left click to define the second point.
5. Repeat Steps 3 and 4 as often as required to build the required contour.
6. Right click on the last point or on the NEW LINE soft key to end the contour.

Note – *The above process can be repeated as often as required to add more lines.*

Adding Symbols via the Video Circle

This ONLY applies to layers which use symbols.
1. Position the screen cursor over the SYMBOL line in the EDIT MAPS menu.
2. Left click to toggle through the SYMBOL options available.
   Alternatively a right click will reveal a drop down menu containing a range of symbols in their respective colours. Left click on the symbol required. The selected symbol will appear in the SYMBOL line of the menu.
3. Within the video circle, position the cursor at the point where you want the symbol placed.
4. Left click to place.
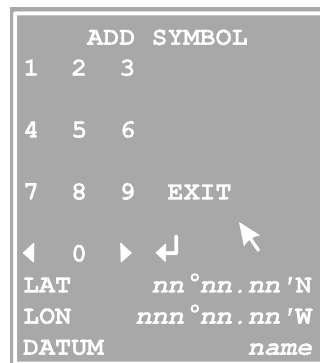   The selected symbol will appear in the video circle.
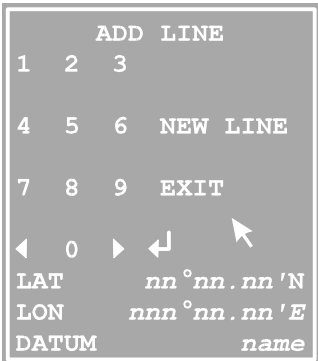
Adding Lines by Entering a Lat/Lon
This ONLY applies to layers which use lines.

```
LAT  ▶nn°nn.nn'N
LON   nnn°nn.nn'W
DATUM        name
```

1. Position the screen cursor over the LAT/LON line in the EDIT MAPS menu.

```
     ADD LINE
1   2   3

4   5   6   NEW LINE

7   8   9   EXIT

◀   0   ▶   ↵      ↖
LAT        nn°nn.nn'N
LON       nnn°nn.nn'E
DATUM           name
```

2. Left click to reveal a drop down numeric keypad as shown on the left.
3. If the datum displayed is incorrect for the lat/long about to be entered (Step 5), position the cursor over the DATUM caption and left click.
   This will reveal a list of the datums available. A right click will remove the keypad without further action.
4. Left click on the datum associated with the Latitude and Longitude in use.
   The datum selected is retained throughout the editing session until changed.
5. Use the keypad to enter the Latitude and Longitude of the start position.
6. Position the cursor over the 'carriage return' symbol ↵ and left click to define the start position.
7. Use the keypad to enter the Latitude and Longitude for the next position.
8. Position the cursor over the 'carriage return' symbol ↵ and left click to define that position.
9. Repeat Steps 7 and 8 as often as required to build the required contour, or select NEW LINE to end the current line and start a new one.

   Note – *The above process can be repeated as often as required to add more lines.*

10. Left click on the EXIT caption to end the process and close the drop down keypad.

Adding Symbols by Entering a Lat/Lon

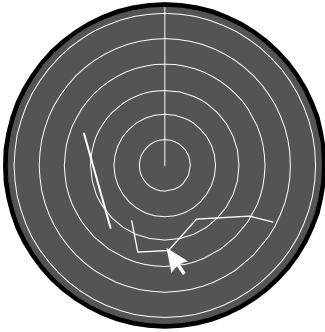This ONLY applies to layers which use symbols.

1. Position the screen cursor over the SYMBOL line in the EDIT MAPS menu.

2. Left click to toggle through the SYMBOL options available.

   Alternatively a right click will reveal a drop down menu containing a range of symbols in their respective colours. Left click on the symbol required. The selected symbol will appear in the SYMBOL line of the menu.

3. Position the screen cursor over the LAT/LON line in the EDIT MAPS menu.

4. Left click to reveal the drop down numeric keypad shown on the left.

5. If the datum displayed is incorrect for the lat/long about to be entered (Step 7), position the cursor over the DATUM caption and left click.

   This will reveal a list of the datums available. A right click will remove the keypad without further action.

6. Left click on the datum associated with the Latitude and Longitude in use.

   The datum selected is retained throughout the editing session until changed.

7. Use the keypad to enter the Latitude and Longitude of the position where you want the symbol placed.

8. Position the cursor over the 'carriage return' symbol ↵ and left click to define the position.

9. Repeat Steps 7 and 8 as often as required.

10. Left click on the EXIT caption to end the process and close the drop down keypad.

Deleting Lines and Symbols from a Map

The DELETE mode of editing allows the user to delete single segment lines, points within a contour and symbols from within the video circle, on the selected layer.

Deleting Lines and Symbols in the Video Circle

1. Within the video circle, position the cursor over the symbol, or over a point on the contour, or at any point along the single segment line, you wish to delete.
2. Left click to delete.

Note – *A left click on a point will result in two segments being deleted and the remaining end points being joined.*

Left click to delete
point in contour

Moving Lines and Symbols on a Map
The MOVE mode of editing allows the user to move lines and symbols from within the video circle, on the selected layer

Moving Lines and Symbols in the Video Circle
1. Within the video circle, position the cursor over the symbol, or the point on a line, you wish to move.
2. Press and hold down the left key.
3. Drag the selected point to its new position.
4. Release the left key.

Note – If the start or end point of a line is selected, the line will move when dragged. If a point within a line is selected, the line will be split into two segments and the drag will affect both segments.

Modify Map Symbols
The MODIFY mode of editing allows the user to change a map symbol from within the video circle, on the selected layer.

Modifying Symbols in the Video Circle

SYMBOL

1. Position the screen cursor over the SYMBOL line in the EDIT MAP menu.
2. Left click to toggle through the SYMBOL options available.
    Alternatively a right click will reveal a drop down menu containing a range of symbols in their respective colours. Left click on the symbol required. The selected symbol will appear in the SYMBOL line of the menu.
3. Within the video circle, position the cursor over the symbol you wish to change.
4. Left click to replace the symbol with the one selected in the menu.

Saving a Map

A left click on the SAVE soft key allows the user to save a map that is being created or edited, to the memory card. This should be done regularly to guard against the risk of data loss.

Note - If an attempt is made to exit from the EDIT MAPS menu when there are unsaved edits, the user will be prompted, in the form of a dialog box, to save the current edits before exiting. Also if over 100 edits have been made without saving, a brief prompt will be displayed as a reminder to save the map.

Creating and Editing Folios

The Folios facility allows the user to create a new folio of up to ten maps, and to edit or delete existing folios. A folio can only be created from maps located on the same memory card as the folio. If necessary, move maps before creating the folio.

Viewing the Current Folio

1. Position the screen cursor over the FOLIOS soft key.

2. Left click to reveal the FOLIO menu and soft keys shown on the left.
   The menu will be for the FOLIO currently selected in the MAPS menu (See **Selecting Maps and Folios from Memory**). If a folio hasn't been selected, it will be untitled.
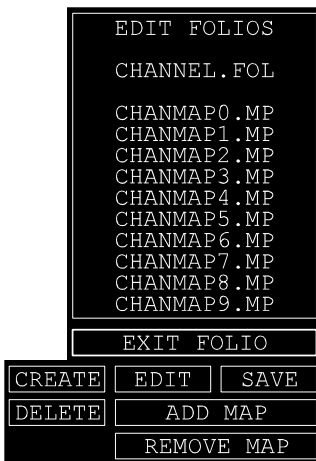
*Note – A left click on the EXIT FOLIO soft key will close the FOLIO menu **unless** edits have been made which have not been saved. In which case, the user is prompted to save their changes before exiting.*

Creating a New Folio

1. Position the screen cursor over the CREATE soft key.
2. Left click to reveal the CREATE NAME drop down keypad.

Note – *This keypad is the same as that explained under* **CREATING a New Map** *earlier in the chapter. It allows the entry of a memory card identifying letter and an 8 character filename. The filename extension is fixed as* **.FOL**.

Once the new filename has been entered and accepted, the functions of ADD MAP, REMOVE MAP and SAVE can be used.

Adding a Map to a Folio

ADD MAP

1. Position the screen cursor over the ADD MAP soft key.
2. Left click to reveal a CARD menu containing a list of the MAPS available. (This is the card on which the Folio has been created).
    Note – *At this point, a right click will close the CARD menu and re-display the FOLIO menu.*
3. Within the CARD menu, left click on the map to be included in the folio. After this selection, the menu is closed leaving the cursor over the ADD MAP soft key.
4. Repeat steps 2 and 3 until all required maps have been added. A prompt will be displayed when the folio is full (contains ten maps).

Removing a Map from a Folio

REMOVE MAP

1. Position the screen cursor over the REMOVE MAP soft key.
2. Left click to reveal a drop down menu containing a list of the MAPS in the folio.
    Note – *A right click at this point will close the drop down menu and re-display the FOLIO menu.*
3. Within the drop down menu, left click on the map to be removed from the folio. After this selection, the menu is closed leaving the cursor over the REMOVE MAP soft key.
4. Repeat steps 2 and 3 until all required maps have been removed.

Saving a Folio

A left click on the SAVE soft key allows the user to save a newly created folio, or an edited folio, to the memory card.

Note – If an attempt is made to exit from the EDIT FOLIO menu when there are unsaved edits, the user will be prompted, in the form of a dialog box, to save the current edits before exiting.

Editing a Folio
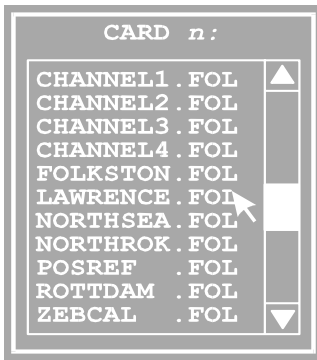
1. Position the screen cursor over the EDIT soft key located below the EDIT FOLIOS menu.
2. Left click to reveal a drop down menu containing a list of FOLIO filenames. (A further right click will remove the menu without taking further action).
3. Within the menu, left click on the **CARD *n*** line to select the card required, CARD A or CARD B.
4. Left click on the filename of the folio you wish to edit. The menu for the selected FOLIO will appear and the functions of ADD MAP, REMOVE MAP and SAVE can now be used as described earlier.

Note – A folio that is currently in use cannot be edited.

Deleting a Folio from a Memory Card
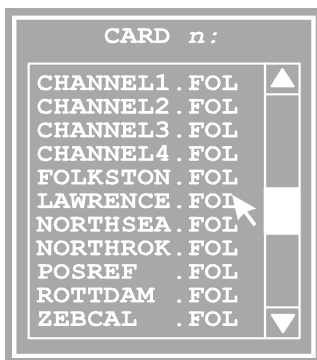
1. Position the screen cursor over the DELETE soft key.

2. Left click to reveal a drop down menu containing a list of folios as shown on the left.
3. Within the menu, left click on the **CARD *n*** line to select the card required, CARD A or CARD B.
4. Left click on the filename of the folio you wish to delete. This will reveal a YES/NO dialog box. Left click on YES to delete the folio.
5. Right click to close the list and re-display the FOLIO menu.

Creating and Deleting Guard Lines

Guard lines can be created by entering their start and end positions either in the video circle or in a drop down lat/long keypad accessed from the GUARD LINES menus. Guard lines are drawn in mauve and are inactive (off) during editing. They are activated and drawn in red on exiting from the Guard Lines menu.

Viewing the Current Guard Line Selection

```
┌─────────────────────────┐
│  GUARD LINES            │
└─────────────────────────┘
```

1. Position the screen cursor over the GUARD LINES soft key.
2. Left click to reveal the GUARD LINES menu and soft key shown on the left.

```
┌─────────────────────────┐
│     GUARD LINES         │
│                         │
│ GUARD LINES      ON     │
│ NUMBER OF LINES  10     │
│                         │
│ ADD                     │
│ DELETE                  │
│ DELETE ALL              │
│ LIST LINES              │
│                         │
│                         │
│                         │
│ EXIT GUARD LINES        │
└─────────────────────────┘
```
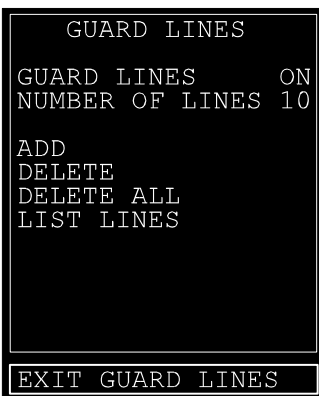
The 'NUMBER OF LINES' line in the menu indicates the number of guard lines currently defined. A maximum of up to 20 guard lines can be defined.

Note – A left click on the EXIT GUARD LINES soft key will close the menu and re-display the MAPS menu. Guard lines are stored in non-volatile memory.

Activating and Deactivating Guard Lines

```
┌─────────────────────────┐
│ GUARD LINES        ON   │
└─────────────────────────┘
```

1. Within the GUARD LINES menu, position the screen cursor over the GUARD LINES caption.
2. Left click to toggle the guard line function between ON and OFF.
   This function is also available on the main MAPS menu.

Adding Guard Lines in the Video Circle

Guard lines are defined by a 'start-of-line' position and an 'end-of-line' position. They can only be added in TRANSMIT.

```
┌─────────────────────────┐
│ ADD                     │
│ DELETE                  │
```

1. Position the screen cursor over the ADD line in the GUARD LINES menu.
2. Left click to select.
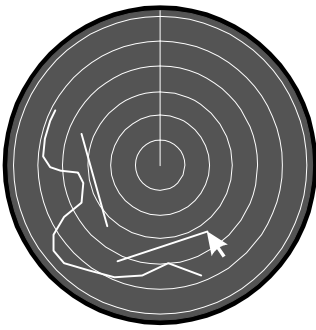
Left click to start line
Left click to end line

3. Move the cursor into the video circle and position it at the start point of the line required.
4. Left click to define the point.
5. Move the cursor to the end point.
6. Left click to define the end point.
7. Repeat Steps 3 to 6 as often as required to create up to twenty guard lines.
   A right click will undo the last position.
   You will be prompted when the maximum number of lines is defined.

Deleting Guard Lines via the Video Circle
1. Position the screen cursor over the DELETE line in the GUARD LINES menu. Individual lines can only be deleted in TRANSMIT.
2. Left click to select.
3. Move the cursor into the video circle and position it anywhere on the guard line you wish to delete.
4. Left click to delete.
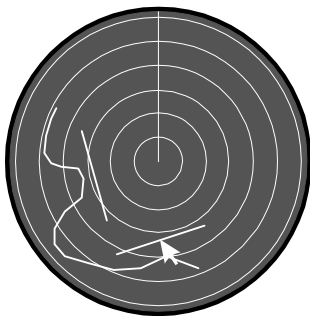
Left click to delete
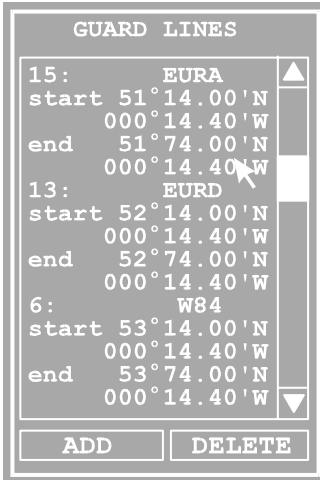

Deleting ALL Guard Lines
1. Position the screen cursor over the DELETE ALL line in the GUARD LINES menu.
2. Left click to select. This will reveal an ACCEPT/ CANCEL dialog box. Left click on ACCEPT to delete. This will delete all guard lines from the system.

Viewing Guard Lines using the MENU
1. Position the screen cursor over the LIST LINES caption in the GUARD LINES menu.

2. Let click to reveal a drop down list and soft keys as shown left. Use the scroll bar as required to view the List.
3. Follow the instructions below to add lines to or delete lines from this list.

Note – *A right click at any time the list is displayed, will close the list and return the GUARD LINES menu.*

```
          GUARD LINES

15:         EURA
start 51°14.00'N
      000°14.40'W
end    51°74.00'N
      000°14.40'W
13:         EURD
start 52°14.00'N
      000°14.40'W
end    52°74.00'N
      000°14.40'W
6:          W84
start 53°14.00'N
      000°14.40'W
end    53°74.00'N
      000°14.40'W

  ADD        DELETE
```

Adding Guard Lines using the Keypad
Guard lines are defined by a 'start-of-line' lat/long and an 'end-of-line' lat/long entered in a drop down menu accessed via the ADD soft key.
1. Position the screen cursor over the ADD soft key.
2. Left click to reveal a drop down numeric keypad from where the datum, 'start-of-line' lat/long and an 'end-of-line' lat/long can be entered. See note below.

```
  ADD        DELETE
```

Note – *Guard line lat/long information can be entered in datums other than W84. First, check that the datum displayed in the keypad is the one required for the start and end lat/long you are about to enter. If it is not the datum required, select the new datum before entering any lat/long.*

While the list is displayed, lat/long information on up to a maximum of 20 guard lines can be added.
3. Right click to close the list.

Deleting Guard Lines using the LIST
1. Scroll the list if required, and left click on the details of the GUARD LINE to be deleted.
   (A left click on any line in the list will highlight ALL lines associated with the GUARD LINE).
2. Position the screen cursor over the DELETE soft key.

```
  ADD        DELETE
```

3. Left click to delete.
   While the list is display as many guard lines as required can be deleted.
4. Right click to close the list.

Navline Interface

The System Initialisation and Commissioning section of the Ship's Manual (Chapter 4), gives details of how to enable the Navline Interface as an input device.

```
      MAPS
MAP DISPLAY      OFF
GUARD LINES      OFF

LAYERS SHOWN:    ALL
MODE           LOCAL
CURRENT MAP:     MAP
-:-------.---
OFFSET     0°0n.nn'N
           0°0n.nn'E


REMOTE TRANSFER:
READY
CARD              n
     EXIT MAPS
```

When the Navline Interface has been set up as an input device and MAPS is selected, the MAPS menu display is as shown in the example left.
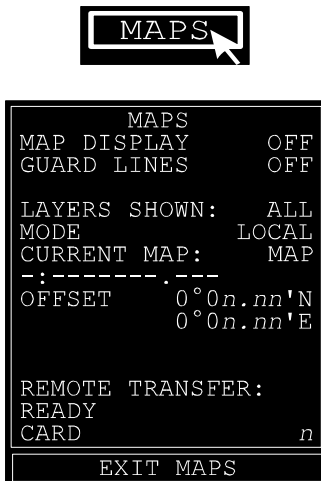
The main differences are, the inclusion of a MODE selection line (LOCAL or REMOTE), and three additional lines, related to mode selection, at the bottom of the menu.

For the Navline Interface to function successfully, the following points must be observed.

- A memory card, which is NOT write protected, must be fitted.
- There must be sufficient space on the memory card to save the (chartname).EXT file.
- REMOTE Mode must be selected.

Mode Selection

1. Position the cursor over the MODE line in the MAPS menu.
2. Left click to toggle for LOCAL or REMOTE (see Note below).

*Note – The default mode at switch-ON is **LOCAL**. Before selecting **REMOTE**, make the appropriate memory card selection by left clicking on the 'CARD n' line at the bottom of the menu to toggle for CARD A or CARD B (Navline information is automatically saved to the card selected).*

LOCAL Mode

When LOCAL Mode is selected, the radar behaves as if the Navline Interface is not present and can be operated normally, as described in the earlier parts of this chapter.

REMOTE Mode

When REMOTE Mode is selected, navline information is accepted over the interface, and is then converted into a file format with a '**.EXT**' extension (short for external). This

file is automatically saved to the selected memory card (A or B).

Remote Transfer Status

```
REMOTE TRANSFER:
LOADING
CARD              A
```

Within the MAPS menu, the line immediately below the **REMOTE TRANSFER:** line, provides information on the status of the transfer cycle. When Navline information starts being received, the status line caption changes from 'READY' (ie waiting) to 'LOADING', see example left.

```
REMOTE TRANSFER:
CONVERTING     nn%
CARD              A
```

When loading is finished, the status changes to 'CONVERTING *nn%*' as the received information is converted into a *(chartname).EXT* file for storage on the memory card (see example left). During the conversion phase, the *nn%* figure indicates the percentage conversion so far achieved.

When the conversion phase is completed, the name of the file created, complete with .EXT extension, is displayed immediately below the CURRENT MAP line in the menu. If MAP DISPLAY (top line of menu) is selected ON, the newly converted map will be displayed if appropriate to the current location.

Note – *In REMOTE mode, the current map is always replaced by the new one received from the VMS.*

```
REMOTE TRANSFER:
READY
CARD              A
```

The radar is now ready to receive further information over the navline interface and the status caption is changed to 'READY', thus completing the cycle (see example left).

If the new map is subsequently modified (ie edited using the procedures contained in the earlier part of this chapter) the edited map will have a '**.MP**' file extension.

Warning Prompts

Warning prompts are displayed when conflicting conditions prevail.

Note *– Only a selection of warning prompts are described.*

Maps and Folios

If an attempt is made to turn-ON a folio or map when the system is unstabilised, outside the allowed range scale, outside the allowed latitude or a NAV alarm is present, an appropriate prompt is displayed and the folio or map is NOT turned ON. See prompts below.

```
Select stabilised mode
```

```
Select a valid range
```

```
Own Ship lat/lon is outside valid limits
```

```
Own ship lat/lon not available
```

If a selected Folio has some maps missing, the following prompts is displayed.

```
Maps missing - select Folios
```

A left click on the FOLIOS soft key will reveal a list of the maps in the Folio with the missing maps displayed in red.

Guard Lines

If an attempt is made to turn the Guard Lines ON while a
NAV POSITION alarm exists, the following prompt is
displayed and the guard line is NOT switched on.

```
Own ship lat/lon not available
```

Editing: Lat/Lon Inputs
The following warning prompt is displayed if an attempt is
made to enter an invalid lat/long.

```
Invalid Entry
```

Editing: Adding Maps to Folios
The following prompt is displayed when the folio is full
(contains the maximum of ten maps).

```
Folio is full
```

Editing: Adding Guard Lines
The following prompt is displayed when the maximum
number of guard lines (twenty) have been defined.

```
All guard lines are defined
```