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Battalion TOC Workstation
User Manual
Release 1.5

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User Manual
Release 1.5

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Contents

Preface

The Battalion Tactical Operations Center (BnTOC) workstation provides a capability for passing electronic messages, tracking friendly vehicles, and relaying status information of simulators on the SIMNET network. Part of the SIMNET Combat Vehicle Command and Control (CVC^2) system, it is designed to support experiments and evaluation of the soldier-machine interface and to ease task loading on staff at the battalion headquarters level. In addition to being designed to interface with the CVC^2 system, it will eventually interface with a simulation of the Maneuver Control System (MCS). The BnTOC workstation must also support an interface with a NATO Portable Computer Unit, or suitcase version of CVC^2. Each of the workstations resides on a TOC local area network (LAN) and will share data with the other workstations on the LAN. The software for each workstation is unique; however, many of the individual routines will be resident on more than one workstation to permit individual staff sections to manipulate data as necessary to perform their duties.

BnTOC workstation operators will be the officers, noncommissioned officers, and enlisted clerks assigned to the Battalion TOC on the Tank Battalion table of organization.

PURPOSE

This manual identifies the components of the BnTOC workstation and describes their functions. It explains how to:

- Start up the workstation and use the mouse and menus
- Create and manipulate military overlays
- Compose and manipulate IVIS-style reports
- Manage and organize messages
- Compose and manipulate Army formats

AUDIENCE

This manual is directed to ARI experimenters who will be training S2 and S3 officers, noncommissioned officers, and enlisted personnel assigned to the Battalion TOC to use the BnTOC workstations. We assume that users are familiar with standard Army mapping procedures, NATO symbols, and the basics of using a computer.

CONTENTS

A summary of each chapter follows:

Chapter 1: Overview of the BnTOC Workstation

This section provides an overview of the BnTOC workstation, including a description of its functional capabilities, types of workstations, and their hardware components. We also describe how to use the mouse. In addition, we discuss how the BnTOC workstation relates to other components of the SIMNET network.

Chapter 2: Getting Started

This section describes how to start up the BnTOC workstation, use menus, and manage windows.

Chapter 3: The Map Module

In this section, we describe the components of the BnTOC's Map Module and their functions. We also provide instructions for creating and editing map objects and for manipulating overlays and overlay stacks.

Chapter 4: The Message Module

In this section, we describe the components of the Message Module and their functions. We also provide instructions for composing messages, displaying contents of folders, and viewing and disposing of messages (including sending them to another user on the network, storing them in folders or journals, and posting them to maps).

Chapter 5: The Format Module

This section describes how to use the Format Manager window. Operations include creating, editing, copying, and deleting reports.

Chapter 6: The Echelon Module

TBD

RELATED MANUALS

Users of this manual may find the following documents helpful:

- *OSF/Motif™ User's Guide* (Englewood Cliffs, N.J.: Prentice-Hall, 1990).

- *Operational Terms and Symbols,* FM 101-5-1 (Washington, D.C.: Department of the Army, October 1985).

- IVIS Document (BBN).

Typographic Conventions

The following conventions apply:

Bold text   identifies exact text or instructions that must be typed
                                   on the keyboard by the user.

                                   Example:

                                   Type **!9** to start up the system.

<key>   refers to named buttons on the keyboard (not lettered
                                   or numbered keys).

                                   Example:

                                   Press **<return>** on the keyboard.

Bold Helvetica text   refers to menu items, buttons, or text that appear on
                                   the screen.

                                   Example:

                                   Click on the **Send** button to send the message to the
                                   selected destinations.

Changes to Release 1.3

The following changes have been made to this documentation since Release 1.3.

Section 3. Map Module

- There is no longer a minimum unit size for viewing icons at different scales; icons can be viewed at all levels (vehicles, platoons, companies, and battalion) in all scales. This is reflected in the section on Vehicle Aggregation/Deaggregation (pp. 3-23–24).

Section 4. Message Module

- Only the InFolder has a menu bar for filtering, sorting, and composing messages (pp. 4-2–4-3).

- A Route option has replaced the Forward and Copy/Post options in the Dispose of Messages Menu (pp. 4-7–4-8).

- A Free Text Report has been added to the Compose Menu (p. 4-18).

- The Folder Menu now allows the user to select folders, the workbook, or remote workstations instead of folder operations. Selecting the folders opens them, and the user can then perform operations on messages in the folders (pp. 4-23–4-28).

- Actions Taken now appear in the message identification line in the Journal Folder (p. 4-24).

- A Workbook window has been implemented to allow users to open, create, and delete new workbook sections. Workbook functions are explained on pages 4-26–4-27.

- A description of how to access messages in remote workstations appears on pages 4-27–4-28.

1. Overview of BnTOC Workstation

This section discusses how the BnTOC workstation relates to other components of the SIMNET network. We provide an overview of the BnTOC workstation, including a description of its hardware components, types of workstations, and functional capabilities. We also provide general instructions for using the mouse.

PURPOSE

The automated command and control SIMNET Battalion Tactical Operations Center (BnTOC) workstation is designed to support experiments and evaluation of the soldier-machine interface and to ease task loading on staff at the battalion headquarters level.

THE SIMNET CVC^2 NETWORK

The BnTOC workstations reside on a TOC local area network (LAN). They can communicate and share data with other BnTOC workstations; this data includes

- Map overlays

- Army formats

- IVIS-style reports.

Bn TOC workstations can also communicate information to and from intervehicular information system (IVIS) simulators operating on the Vehicle Simulation Network. The IVIS systems are designed to enhance the fighting capabilities of the tank commander. Specifically, they provide the capability to:

- Track friendly vehicles via posnav information

- Communicate messages to and from other IVIS simulators and up the chain of command to the Battalion TOC

- Specify navigation routes and communicate them to the tank driver.

Three types of information are shared between the BnTOC local area network and the Vehicle Simulation Network:

- The IVIS simulators send status information such as vehicle position to the BnTOC LAN.

- The BnTOC LAN sends operational overlays to the IVIS simulators.

• IVIS-style reports are sent by each network to the other.

The relationship between the networks is shown in Figure 1-1.
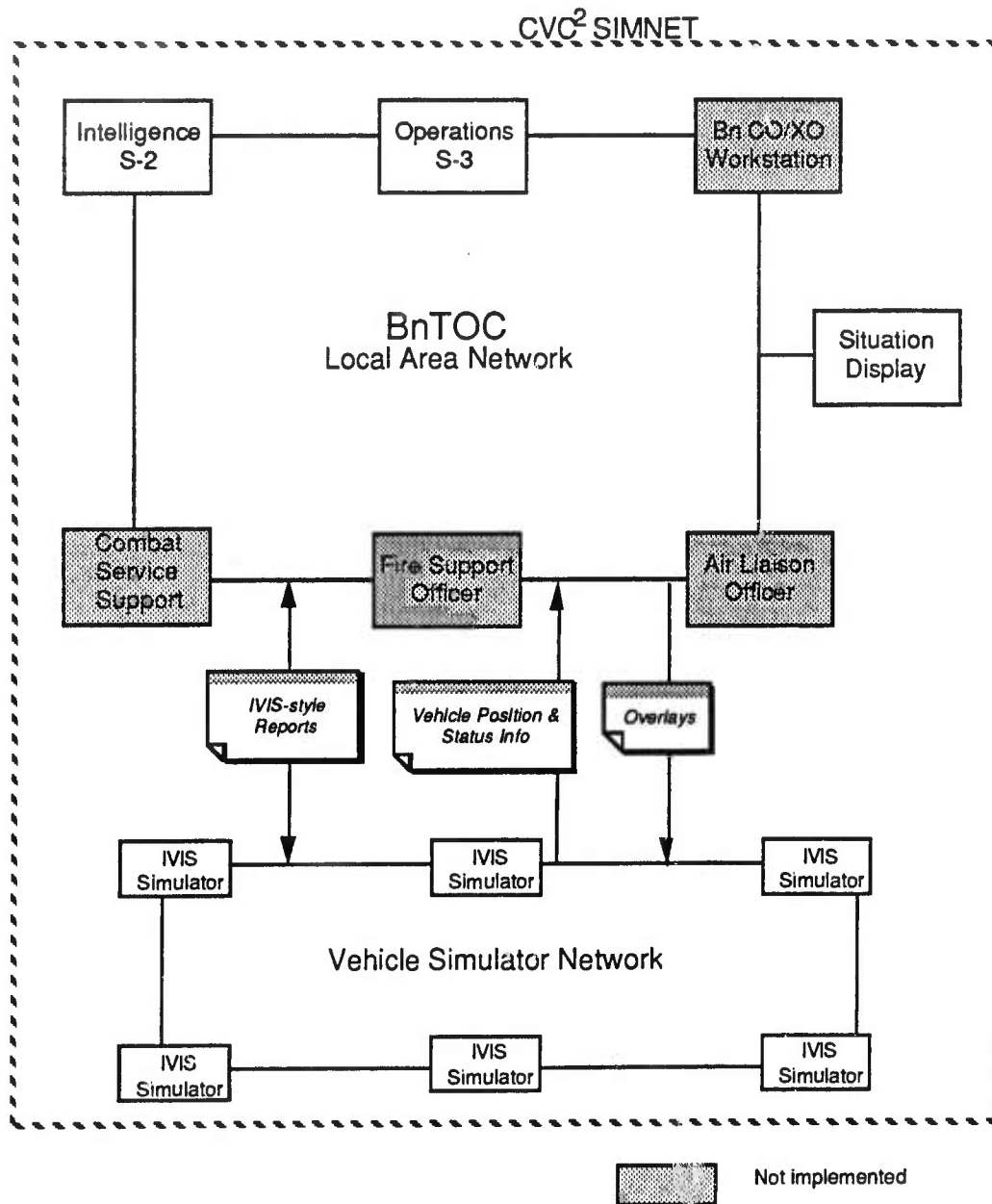
Figure 1-1. *BnTOC LAN Interface with Vehicle Simulator Network*

HARDWARE

There are currently three types of BnTOC workstations—the S2, the S3, and the Situation Display—although others are envisioned in future implementations. The S2 and S3 workstations consist of two 19" color monitors, a central processing unit (CPU), a keyboard, and a mouse. The left monitor, called the Map Display, provides a digital military topographic map display which can be manipulated through the mouse and keyboard. The right monitor, called the Communication and Planning Display, houses the other functions of the BnTOC—the Message Module, the Format Module, and the Echelon Module. These software modules are described in the next subsection. The central processing unit (CPU) is a SUN SPARCStation 1. It provides computing power, houses the software programs which permit the workstation to function, and provides the necessary memory for the storage of data, information, and graphics.

The Situation Display workstation has a large-screen display in place of the Map Display. It presents the BnTOC's current best estimate of the battlefield situation on a map display which is shared by all the officers in the TOC. BnTOC officers can "post" IVIS messages and overlays to the Situation Display remotely from their own workstations. In addition, BnTOC officers can "unpost" IVIS messages and overlays which they have previously posted. However, as an example, an S3 officer cannot unpost a message that has been posted by the S2 officer. A BnTOC officer can view what has been posted to the Situation Display from that workstation, but not from the other workstations. The Situation Display workstation also has a Communication and Planning Display identical to that of the S2 and S3 workstations.

Figure 1-2 shows the layout of the BnTOC workstation.
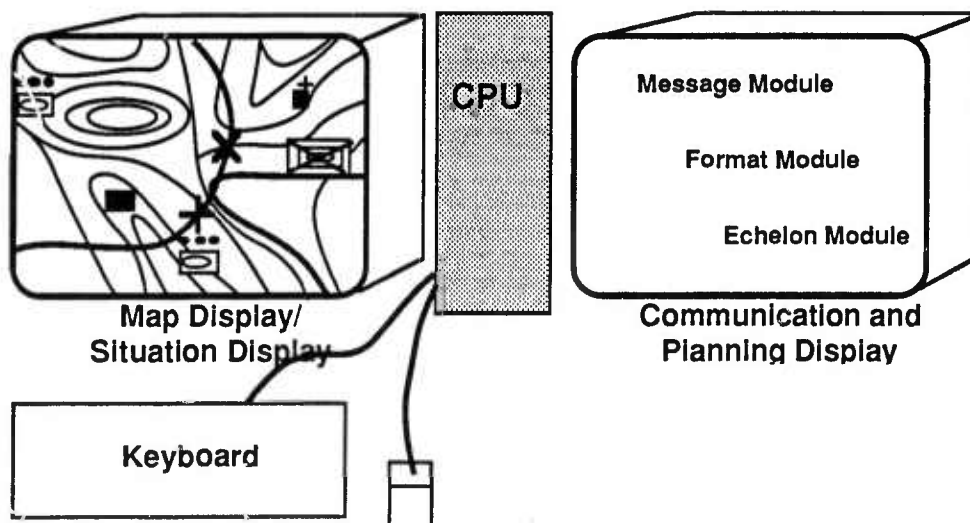
Figure 1-2. BnTOC Workstation Configuration

Using the Mouse

Mouse Buttons

The mouse has three buttons, but only the left and middle buttons are active on the BnTOC workstation. The BnTOC workstation can be operated using the left button only, i.e., the user can access all functions via the left button. The middle button is provided as a convenient short-cut for certain commonly used functions, particularly when editing overlays in the Map Module. Figure 1-3 shows the mouse.
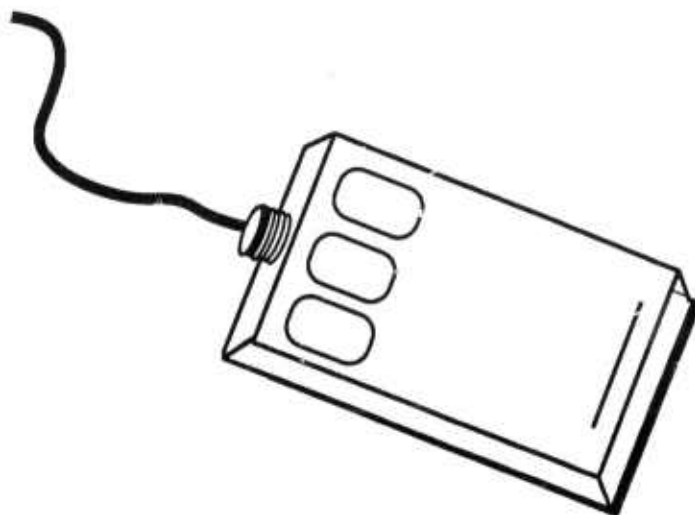
Figure 1-3. *BnTOC Mouse*

In this manual, we describe two types of actions for mouse buttons:

- "Click" means to press and release a button without moving the cursor.

- "Drag" means to press and hold a button while moving the cursor.

Cursor Shapes

The shape of the cursor changes depending on its location. It usually looks like an arrow. When you point to an area that requires typing text from the keyboard, the cursor changes to an "I" shape. When you point to the border of a window to resize it, the cursor becomes a small arrow pointing at a line or corner icon. Figure 1-4 depicts the different cursor shapes used by the BnTOC workstation.
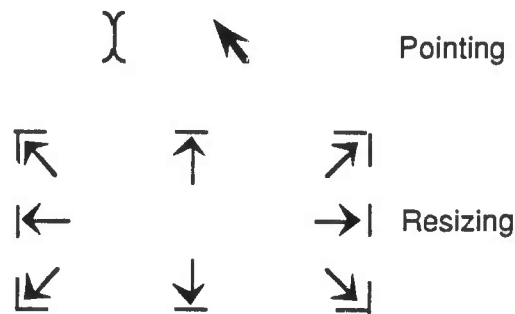
Figure 1-4. *Cursor Shapes*

SOFTWARE MODULES

Functionally, the BnTOC workstation is organized around four modules, each of which is responsible for a broad set of related functions. Modules are task-oriented, and are separated from other modules visually as well as functionally. This means that each module can be operated independently of the other modules. The four modules are:

- The *Map Module,* which combines all map-oriented activities on the Map Display, including scaling and scrolling, editing functions such as creating control measures, preparing overlays, etc., as well as additional functions which are useful for developing and maintaining a picture of the current state of the battlefield. These functions include the ability to (1) track the movement of friendly vehicles, (2) post messages to the map, and (3) create and update a large variety of overlays, including offensive and defensive operational overlays and intelligence overlays. See Section 3 for a detailed description of the Map Module.

- The *Message Module*, which provides a way to send and receive digital IVIS-style messages to and from other BnTOC workstations and the IVIS simulators on the Vehicle Simulation Network. This module also provides a method for storing messages in folders, for creating workbook sections and maintaining a journal, and for posting messages coming across the network to the Map and Situation Displays. Section 4 provides a detailed description of the Message Module.

- The *Format Module,* which provides standard Army report formats and the capability to edit and store them. See Section 5 for more details on the Format Module.

- The *Echelon Module,* which provides fully integrated views of friendly and enemy military units in three formats—spatial, hierarchical, and textual. Section 6 describes the Echelon Module in detail.

For Release 1.5, only the Map, Message, and Format Modules have been implemented.

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2.   Getting Started

This section describes how to start up the Bn TOC workstation, use the menus, and manage windows.

LOGGING IN

Instructions TBD

As the system loads the information it needs to run, a blank box appears in the center of the left monitor. To "drop" the box on the screen, press and release the left mouse button. This box fills in with information and becomes the Map Display. A second box then appears; drag it to the right monitor and click the left mouse button to drop it on the screen. It becomes the InFolder of the Message Module. A third box appears; drag it to the desired location on the right-hand monitor and click the mouse to drop it there. It will serve as the Format Manager.

WINDOWS

Each of the BnTOC workstation's four modules resides in a window. Also, as certain functions are requested, windows pop up onto the screen. A typical window and its components are shown in Figure 2-1.
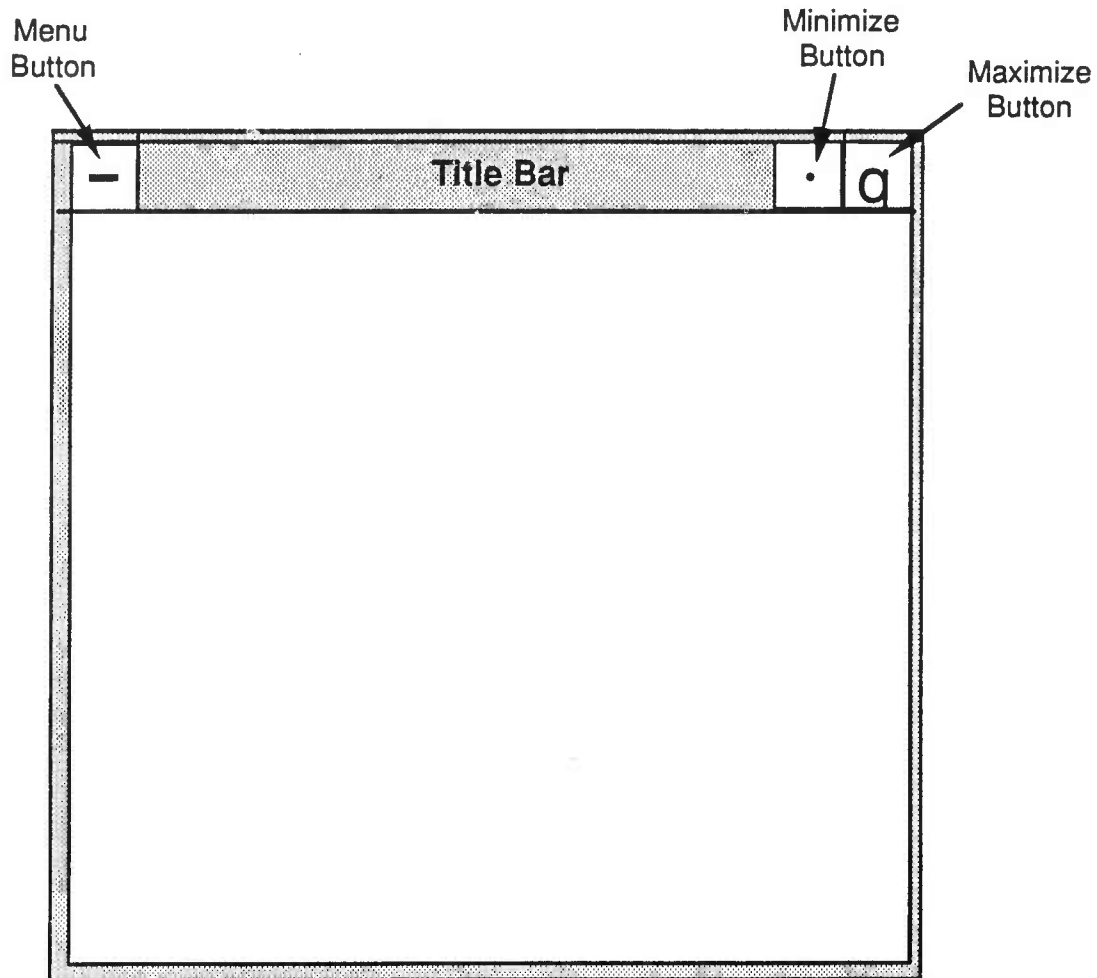
Figure 2-1. *BnTOC Window Components*

Selecting a Window

Before a window can receive input, it must be selected as the active window. To select a window, point to any part of the window and click the left mouse button. When the window is active, the window frame changes color.

The Window Menu

Some windows have a window menu that contains functions for controlling the window. For the BnTOC workstation, these functions include moving, resizing, minimizing or iconifying, restoring, maximizing, lowering, and closing.

Displaying the Window Menu

To display the window menu, point to the menu button and press and hold the left mouse button. Or you can point anywhere in the frame or title bar and hold the the middle mouse button. See Figure 2-2.

The menu is displayed as long as you hold the button down. Note that although there are function key alternatives on the menu (e.g., Move = Alt+F7), they are not implemented for the BnTOC workstations.
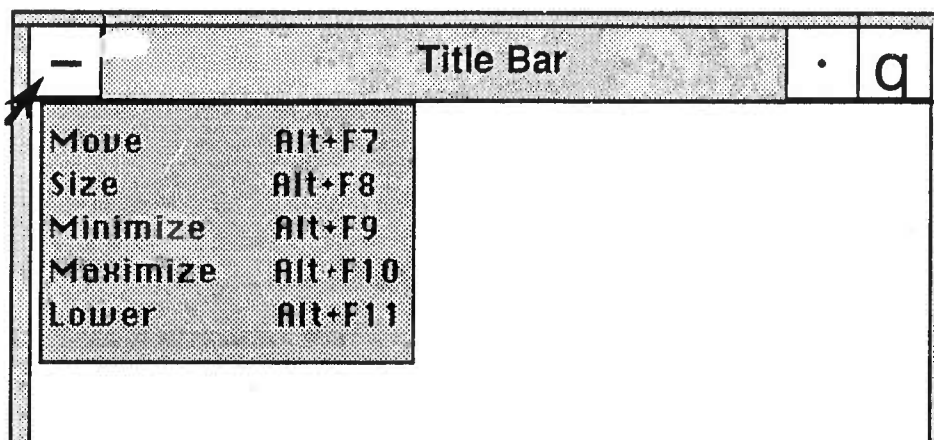
Figure 2-2. *The Window Menu*

Making Selections

While holding the button down, drag the pointer down the menu. As the pointer moves, it highlights the button for each available selection. Release the button to select a function once it is highlighted. Window menu options available on the BnTOC workstation include **Move, Size, Maximize, Minimize,** and **Lower.**

To do this...	Choose...
Change the location of the window	Move
Change the size of the window	Size
Enlarge the window to cover the entire screen	Maximize
Shrink the window to an icon	Minimize
Send a window to the back or bottom of the window stack	Lower

When a menu function is meaningless, its name is grayed out and you cannot select it. For example,when a window has been maximized, the Maximize function is not available for selection.

For most functions on the menu, you can perform the operations without using the menu. Instructions for these operations are provided below.

Moving a Window

Using the cursor, you can move a window to a new location on the screen. Point to the title bar of the window. Press and hold the left mouse button. Slide the mouse to a new location. As you move the mouse, the pointer on the screen drags an outline of the window. The outline shows you where the window will be moved when you release the mouse button. When the outline is where you want it, release the mouse button. The window moves to the new position.

Resizing a Window

You can change the size of a window by grabbing an area of the window's frame with the cursor, dragging the frame to the desired size, and then releasing the frame. Where you grab the window's frame determines how the window will be resized.

To stretch or shrink the window...	Point to...
vertically from the top	top of the frame, above the title bar
vertically from the bottom	bottom of the frame
horizontally from the right	right side of the frame
horizontally from the left	left side of the frame
diagonally from the bottom left corner	frame's lower left corner
diagonally from the top left	frame's upper left corner
diagonally from the top right	frame's upper right corner
diagonally from the bottom right	frame's lower right corner

Point to the appropriate area of the frame. When positioned correctly, the pointer changes to an arrowhead. Grab the frame by pressing and holding down the left mouse button. Slide the mouse to the desired location. As you move the mouse, the pointer drags an elastic outline of the window. The outline shows the new size of the window. When the elastic outline is the correct size, release the mouse button. The screen is redrawn with the window filling the outline.

Iconifying Windows

Changing a Window to an Icon

If your screen becomes cluttered with windows, you can change some of them into icons, or small graphical images, to clear up your workspace. To change a window to an icon:

1. Position the cursor on the minimize button (the small square to the immediate right of the window's title bar).

2. Click the left mouse button.

   The window changes to an icon.

Moving Icons

To move an icon, simply drag it as you would to move a window. As you drag the pointer, an outline follows, showing where the icon will be repositioned. To position the icon, release the mouse button.

Restoring a Window from an Icon

To change an icon back to a window, point to the icon and double click the left mouse button. The window appears in the same position as before it was iconified. If you can't identify the icon you want to restore because the icon names are obscured, click in the icon's title to display the entire label.

You can also click once on the icon with the left mouse button to display its menu. Non-functional options are grayed out.

DISPLAYING MENUS AND SELECTING MENU ITEMS

In some of the BnTOC modules, menu bars are displayed across the top of the window. Each word in the menu bar represents a pull-down menu, which offers more options. To display a pull-down menu, point to the menu name and click the left mouse button, or press and hold the button. Figure 2-3 shows a BnTOC menu bar.
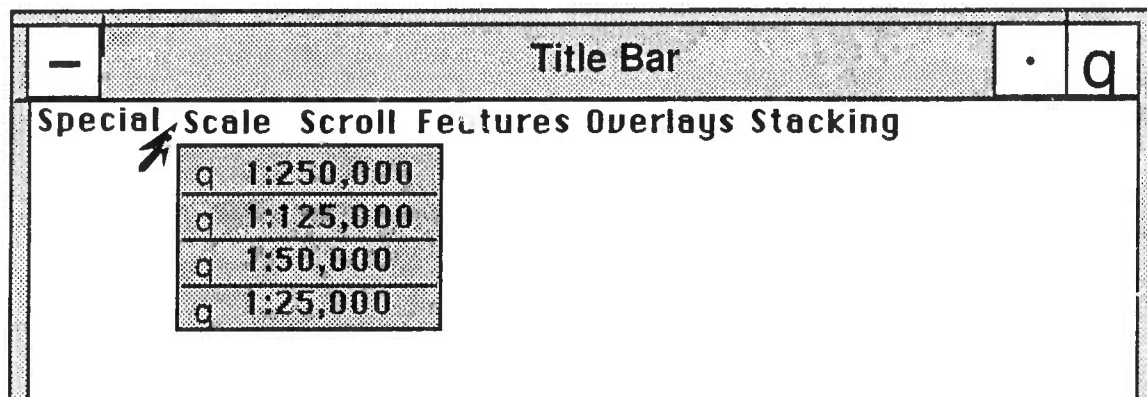
Figure 2-3. *Menu Bar*

Once the menu is displayed, there are two ways to select an item on the menu:

- If you are still holding the mouse button, drag the cursor down the menu until the desired item is highlighted, then release the button.

- If you clicked the button to display the menu, choose an item by pointing to it and clicking the left mouse button.

Raising a Window

To bring a partially concealed window to the front of the screen, click on the window's frame.

Scrolling

Whenever the information in a window is larger than the list box, scroll bars along the right and bottom edges of the box become active. The scroll bar allows you to control what portion of a larger object is displayed within the box.

Scroll bars have an arrow at each end and a rectangular slider in the middle. The slider represents the current relative position in the list box. There are two ways to mvoe a slider:

- Using the arrow buttons: Point to the arrow in the scroll bar that points in the direction you want to move. Press and hold the left mouse button until the portion of the screen you want to view appears; then release the button.

- Dragging the slider: Point to the slider, and press and hold the left mouse button to grab the slider, as shown in Figure 2-4. While still holding the button, move the pointer in the direction you wish to move.

Figure 2-4. *Using a Slider*

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3. The Map Module

The Map Module is the software that controls the Map Display and is therefore one of the most important tools of the BnTOC workstation. Analogous to the clear acetate overlays used on the Situation Display at the Battalion Tactical Operations Center, it is the BnTOC officer's primary means of visualizing the state of the battlefield and tracking the movement of friendly and enemy forces. This module allows the user to create, edit, and store overlays, manipulate map objects, adjust features of the map display, such as scale, and post information to the map.

In this section, we describe the components of the Bn TOC's Map Module and their functions. We also provide instructions for creating and editing map overlays and for manipulating overlays and overlay stacks.

MAP MODULE COMPONENTS

The Map Module has three types of components: Overlays (which can be combined into Overlay Stacks), Friendly Vehicle Icons, and IVIS Message Icons. Overlays are made up of a variety of symbols posted to a map display. The user can create Unit Symbols, Points of Interest, Control Measures, and Post-It Icons* and position them on the map using the mouse. Friendly Vehicle Icons and IVIS Message Icons are automatically posted to the map display as they are received over the network. We describe these components in detail below.

Overlays

The Map Module simulates a stack of transparencies or overlays resting on top of one another on a standard terrain background. Each workstation has its own set of overlays; however, the information on those overlays can be copied to other BnTOC workstations and then viewed by them.

Overlays are created in Overlay Edit Mode, using the Overlay Editor. The operator can select objects such as *Unit Symbols* or *Points of Interest*, assign attributes to them, e.g., Alignment and Unit Size, and position them on the map. The BnTOC workstation also provides the capability to draw *Control Measures* such as Phase Lines, FLOT, and Main Axis of Advance. Overlay objects are represented on the map with standard NATO symbols.

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* Not yet implemented.

Once objects are positioned in the Overlay, the operator can move them, change their stacking order, and delete them. In addition, the operator can express a hierarchical relationship between Unit Symbols by linking them and then select which object in the hierarchy to view. Only objects on the top layer of the stack can be manipulated; IVIS Message Icons and Friendly Vehicle Icons can always be manipulated regardless of which layer they reside on (see below for description of these icons).

You can create an unlimited number of overlays and stack any number of them so they are all visible on the map. Overlays can be moved around in the stack, i.e., towards the front or back; they can be deleted from the stack; they can be sent to other workstations or copied and edited. Overlays can be stored on the workstation's disk and retrieved to be viewed again.

Friendly Vehicle Icons

Friendly Vehicle Icons are automatically posted to the Map Display when IVIS posnav information is sent to the BnTOC from simulators on the network. They provide a means for tracking, as they move automatically on the map as the simulated vehicles move. In Release 1.0, all Friendly Vehicles are tanks, and are represented by the NATO tank symbol. If more than one Friendly Vehicle Icon appears on the map, they can be aggregated and deaggregated; their stacking order can also be changed.

IVIS Message Icons

IVIS Message Icons are posted to the Map Display from any BnTOC workstation on the network. Users compose IVIS-style reports, for example, spot or contact reports, using the Message Module (see Section 4); when reports are posted to the Map Display, icons representing objects such as vehicles or shell bursts in the report appear on the Map Display. Users can view messages associated with these icons, remove them or un-post them from the map, link them to Unit Symbols, or change their stacking order.

Object Anatomy

Each map object has characteristics common to all objects. All objects have visible parts, though different types of objects have different parts. Objects also have handles, or sensitive areas that react to mouse actions. Each object has a pull-down menu containing the operations available for that object.

In addition to the above characteristics, Unit Symbols and Points of Interest have attributes, or characteristics which alter the way their visible parts are drawn. For example, the alignment attribute will cause the same object to be drawn differently depending on whether it is designated as *friendly* or *enemy*.

Figures 3-1(a-c) show examples of Unit Symbols, Points of Interest, and Control
Measures. Figure 3-1(d) shows the symbols for a single Friendly Vehicle Icon and for a
· Friendly Vehicle Aggregate.   Figure 3-1(e) provides an example of an IVIS Message Icon.
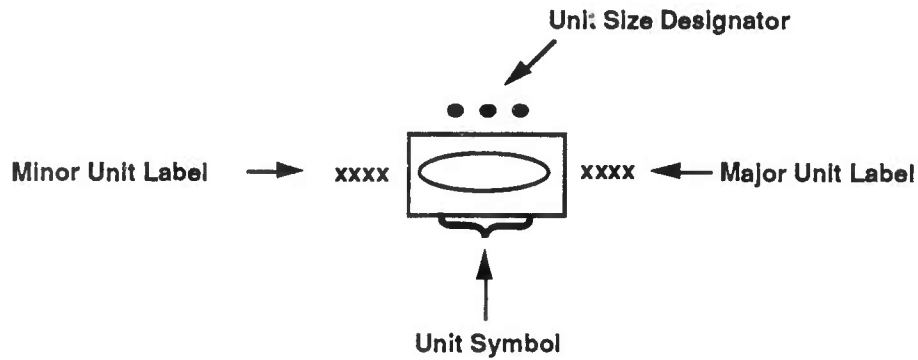
(a)   Unit Symbol
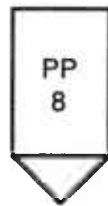
(b)   Point of Interest
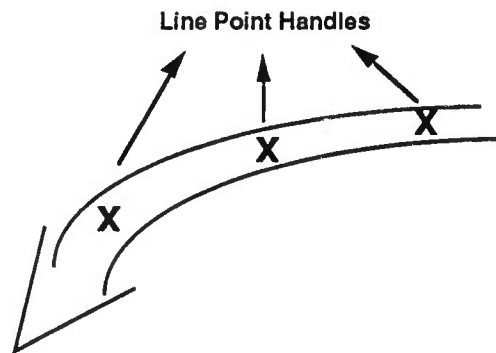
(c) Control Measure

Figure 3-1. *Map Object Examples*

(d)   Friendly Vehicle Icon—Individual and Aggregate
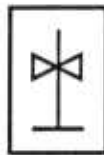
(e)   IVIS Message Icon

Figure 3-1. *Map Object Examples (cont'd)*

MAP MODULE OPERATIONS

The Map Module provides all the functional capabilities users need to interact with the Map Display. Because the Map Display is limited to a 19" diagonal screen, only a fraction of the battlefield terrain can be viewed at one time. To provide more context, the BnTOC workstation is capable of scaling and scrolling the map and displaying features such as grid lines.

When you start up the workstation (see Section 2), the Map Display on the left monitor is the active window. At the top of the screen you will see a label indicating which overlay is at the top of the overlay stack, the current scale of the map (e.g., 1:250,000), Last Checkpoint, and BnTOC Location, which shows the current UTM coordinates of the Bn TOC. At the top left of the screen is a menu bar with five options: Scale, Scroll, Features, Overlays, and Stacking. Each of these options represents a pull-down menu, which is displayed by clicking on the option or pulling down on the menu bar with the mouse.

Scaling

A dedicated command button controls the scale at which the map is displayed. Available scales are 1:250,000, 1:125,000, 1:50,000, and 1:25,000; this scale shows most of a 50kmx50km database.

To change the scale, use the menu labeled **Scale**. Simply click on the desired scale. The box to the left of the selected scale is highlighted, and the selected scale is displayed at the top center of the screen. All text and unit icons change size according to the scale selected.

Scrolling

Three scrolling methods are available on the scrolling menu to change the portion of the map displayed on the screen: scroll bars, drag scrolling, and homing. The Scroll Bars function toggles scroll bars on and off at the right and bottom of the screen. Drag Scrolling is useful for moving the map small distances; in this method the user specifies a point on the map and then drags that point to the new location on the screen. Homing centers the display on the Bn TOC UTM coordinates.

To change scrolling methods, select an option from the Scroll Menu:

Turn Drag On/Off	Toggles a mode where the map display responds to mouse clicks by scrolling from the point where you click the mouse to the point where you release it.
Home	Centers the display on the Bn TOC UTM.
Scroll Bars	Toggles the scroll bars at the bottom and right of the screen on and off.

In addition, auto-scrolling is available whenever you perform an operation that causes an object to "bump" the edge of the screen. For example, if you move an object and drag it against the right edge of the screen display, the map will scroll to the left until you drop the object or move it away from the right edge of the screen.

Selecting Features

Map features include contour lines, rivers, roads, vegetation, and grid lines. The user can control whether each feature is visible or not.

The options on the Features Menu are **Contour Lines, Grid Lines, Roads, Rivers,** and **Vegetation.** To turn a feature "on," select the feature. A highlighted box to the left of a feature indicates that the feature is selected, or "on."

CONTROLLING EXERCISE FUNCTIONS

When the system is started with the "-coordinator" switch, an additional menu option called "Exercise" appears at the top of the Map Display. This menu enables the user to control certain options common to the entire exercise, such as setting BnTOC UTM coordinates, checkpointing or saving the exercise in its current state, deleting checkpoint files, restarting the exercise using a specific checkpoint, and shutting down the exercise. When you perform one of these functions, the system sends messages to the other workstations on the network notifying them of the action taken.

Changing Bn TOC Location

To change the UTM location of the Bn TOC:

1. From the Exercise Menu, select **Bn TOC UTM** to bring up a dialog box that requests the new UTM location of Bn TOC.

2. Enter the new location using UTM coordinates.

3. Either click on the **Enter** button or press **<return>**.

The new location appears at the top right of the screen.

Checkpointing

Checkpointing is the process of saving the current state of an exercise so it can be retrieved at a later time. The following elements are saved: location of map center, map scale,

BnTOC location, all overlays belonging to a particular workstation, the set of overlays visible at the time of checkpointing, all messages in the system and their distribution (i.e., folders, journal, and workbook), and all formats belonging to a particular workstation.

To save the current state of an exercise,

1. Select **Checkpoint** from the Exercise Menu. A dialog box appears requesting you to type a new checkpoint name.

2. Enter the new checkpoint name. If you type an existing name, an error message will appear on the screen.

3. Click on the **Checkpoint** button or press **<return>**.

4. Click on the **Close** button to return to the current screen.

The date and time that the exercise state was saved appears at the top of the screen.

Deleting a Checkpoint File

Checkpoint files take up a considerable amount of disk space; it is a good idea to delete files that you no longer need. To delete a checkpoint file,

1. Select **Delete** from the Exercise Menu. A dialog box appears requesting you to select a checkpoint to delete.

2. Select the file you wish to delete by clicking on its name.

3. Click the **Delete** button. The system asks you to confirm that you want to delete the checkpoint file.

4. When you've finished deleting the checkpoint file(s), click on the **Close** button.

You are returned to the current screen.

Restarting the Exercise

To restart an exercise,

1. Select **Restart** from the Exercise Menu. A dialog box appears requesting you to select a checkpoint for restarting.

2. Select the checkpoint by clicking on its name. The system will ask you to confirm your selection.

3. Click on the **Restart** button or press **<return>**.

4. Click on the **Close** button to return to the Map Display screen.

The screen will change to reflect the status of the restarted exercise.

Shutting Down the Exercise

To shut down an exercise,

1. Select **Shutdown** from the Exercise Menu. A dialog box appears requesting you to confirm that you wish to shut down all Battalion TOC workstations.

2. Click on the **Ok** button to shut down all the workstations on the Bn TOC network.

OVERLAYS

Overlay Modes

The Bn TOC workstation has two modes for working with overlays:

- In Normal Mode, the mode you're in when you start up the workstation, you can change the stacking position of overlays, add overlays to a stack or delete them, highlight objects on the top overlay of a stack, copy an overlay from another workstation, or send an overlay to another workstation.

- In Edit Mode, you can create a new overlay or edit an existing overlay. To enter Edit Mode, select **Create...** to create a new overlay or **Edit...** to edit an existing overlay from the Overlays Menu.

Creating an Overlay

To create an overlay, select **Create...** from the Overlays Menu. The system will prompt you to name the overlay. Overlay names are limited to 14 characters, including only alphanumerics, spaces, and dashes. When you've typed in the name, click on the **Create** button or press **<return>**.

The screen then changes: a set of options representing Points of Interest and Unit Symbols appears at the top of the screen; a set of tools (lines, arrows, polygons) for drawing Control Measures is at the left. The user can select Points of Interest and Unit Symbols, assign attributes such as alignment or unit size to them, and then place them on the map. Use the drawing tools at the left to show Control Measures such as axis of advance; you can label them and specify the width of arrow heads and tails where appropriate.

Creating Points of Interest

Available Points of Interest include Check Point, Start Point, Release Point, Coordinating Point, Contact Point, Linkup Point, Passage Point, Point of Departure, Traffic Control Point, and ACP.

To create a Point of Interest,
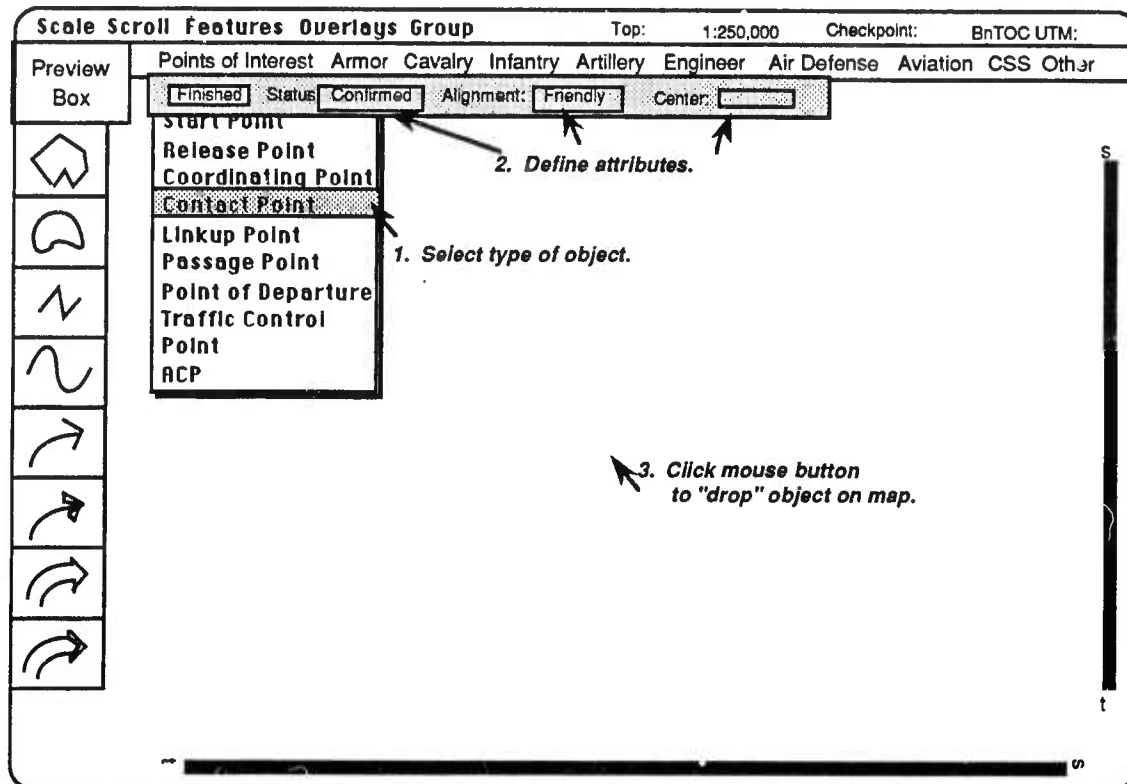
1. Select the **Point of Interest** option. A sub-menu of available options will appear on the screen.

2. Click the desired object (for example, Contact Point). The icon representing that object appears in the Preview Box at the upper left corner of the screen.

   An Attribute menu bar (example shown below) appears below the Object Menu. Only icons that need labeling will have an option for Center Label.

3. Select the appropriate attributes from each set of options; as you select them, they are applied to the icon in the Preview Box.

   Status: Selecting **Unconfirmed** draws the icon's border as a dashed line. Selecting **Confirmed** changes the border to a solid line.

Alignment: If you select the **Friendly** attribute, the icon is drawn in
                                    blue. Selecting **Enemy** changes the color to red.

Center: Only icons requiring center labels will display this option.
                                    Labels are limited to 8 characters. To enter a label, click the
                                    cursor in the label box, type the label, and press **<return>**.
                                    The label then appears inside the icon in the Preview Box.

4. After you've entered the object's attributes, position the cursor at the desired location
    on the map and click the left mouse button. The icon will "drop" on the screen in that
    position.

Creating Unit Symbols

Creating a Unit Symbol is similar to creating a Point of Interest, except that there are more
attributes to assign. Available Unit Symbols include:

Armor	Armor, Arm Cav, Arm Abn, Arm Bn TOC
Cavalry	Arm Cav, Air Cav, Cavalry, Cav Sqn TOC
Infantry	Arm Cav, Mech Inf, Mtrz Inf, Lt Inf, Ranger, BIFV Mtd, Airborne, Inf TOC, Mech TOC
Artillery	Artillery, Rocket Arty, Surf/Surf, 155 How Sp, 203 How Sp, Target Acqn
Engineer	Engineer, Bridging, Topo Eng, Amphib Eng, Survey
Air Defense	Air Defense, Surf Air, Surf Air Sp
Aviation	Helicopter, Fixed Wing
CSS	Armor Trains, Mech Trains, Ammo Sup Pt, ALOC
Other	Signal, Medical, Mil Police, CEWI, Text

To create a Unit Symbol:

1. Click the desired type of object (for example, Armor). The sub-menu of available
    options will appear on the screen.

2. Click the desired object. The icon representing that object appears in the Preview Box
    at the upper left corner of the screen.

    An Attribute Menu bar like the one below appears below the Object Menu. Note that
    only attributes required for a specific Unit Symbol appear in its Attribute Menu bar,

i.e., if labels do not apply, the options for left, bottom, and right labels do not appear in the menu bar.

| Finished | Status: Unconfirmed | Alignment: Friendly | Unit Size: none | Left: | Bottom: | Right: |

Status: Confirmed   Alignment: Enemy   Unit Size: o o o / ⊤ / ‖ / ||| / X / X X

3. Select the appropriate attributes from each set of options. As you select them, they are applied to the icon in the Preview Box.

Status: Selecting **Unconfirmed** draws the icon's border as a dashed line. Selecting **Confirmed** changes the border to a solid line.

Alignment: If you select the **Friendly** attribute, the icon is drawn in blue. Selecting **Enemy** changes the color to red.

Unit Size: The selected size designator appears above the icon's border in the Preview Box. Only icons that require a size designator will display this option.

Labels: Only icons that require labels will display this option. Labels are limited to 8 characters. To enter a label, click the cursor in the label box, type the label, and press **<return>**. The label then appears to the left, right, or bottom of the icon in the Preview Box.

4. When you've finished entering the object's attributes, position the cursor at the desired location on the map and click the left mouse button. The icon will drop on the screen in that position.

Creating Control Measures

The tools at the left of the map are used to create Control Measures. Types of symbols and their possible functions include:

- **Lines and Curves:** Use these to designate Phase Lines, FLOT, delaying actions, reconnaissance, etc.

- **Polygons:** Use these to designate operational areas.

- **Arrows:** Can be single or double sided. Use to show direction of advance, main direction of advance, axis of advance, and main axis of advance. Double sided arrows can have their width specified. Head size can be specified for single and double sided arrows.

Areas and Lines

To create an operational area or line:
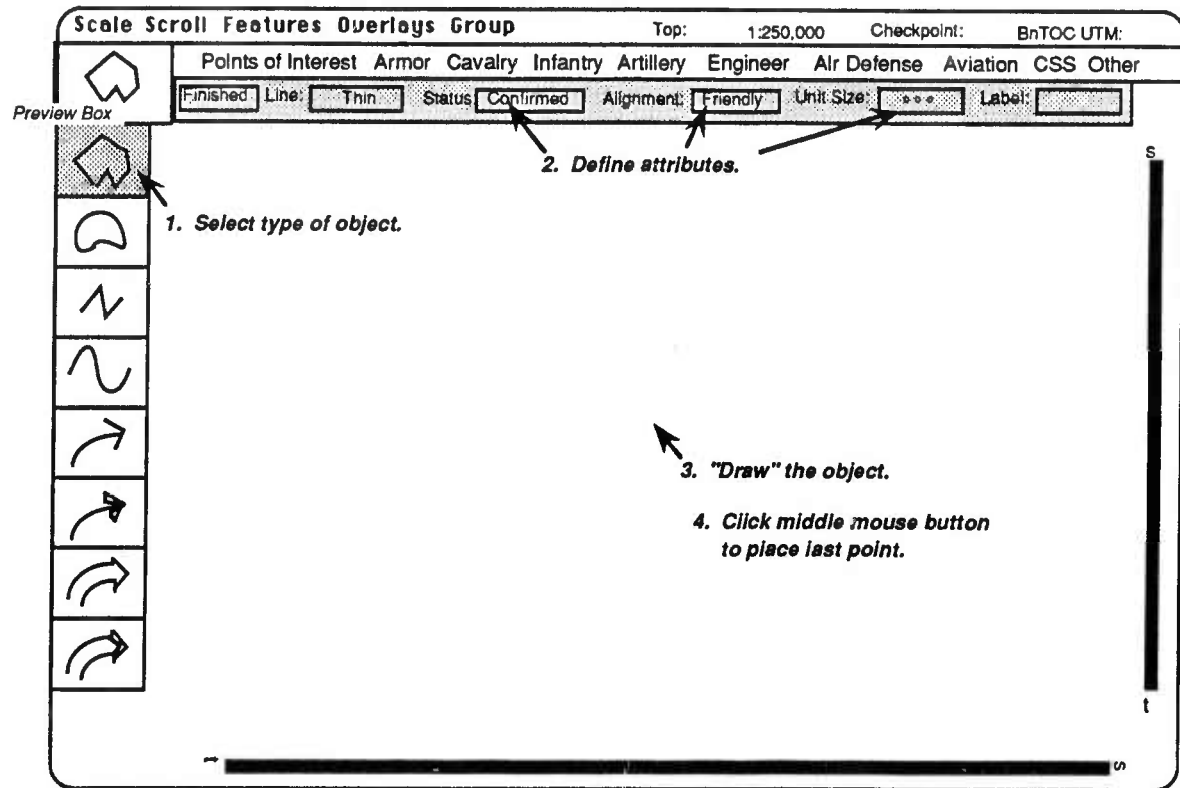
1. Select the desired type of object from the tools at the left of the screen.. The icon representing that object appears in the Preview Box at the upper left corner of the screen.

   An Attribute Menu bar appears directly above the map.

2. Select the appropriate attributes from each set of options; as you select them, they are applied to the icon in the Preview Box.

   Line: The options here represent progressively thicker lines.

Status:	Selecting **Unconfirmed** draws the symbol with a dashed line. Selecting **Confirmed** changes the border to a solid line.
Alignment:	If you select the **Friendly** attribute, the symbol is drawn in blue. Selecting **Enemy** changes the color to red.
Unit Size:	The selected size designator appears in the symbol's border in the Preview Box.
Label:	Labels are limited to 16 characters. To enter a label, click the cursor in the label box, type the label, and press **<return>**. The label then appears on the symbol in the Preview Box.

3. When you've finished entering the object's attributes, you can draw the area or line.

- Position the cursor at the desired location on the map and click the left button once. The first point of the line or area will be placed on the screen in that location.

- Move to the next location and click again; continue placing individual points in this manner.

- To place the last point and terminate the drawing process, click once on the middle button.

Arrows

To create an arrow:

1. Select the desired type of arrow from the tools at the left of the screen. An icon representing the arrow appears in the Preview Box at the upper left corner of the screen.

An Attribute menu bar like the one below appears directly above the map:

Finished	Line:	Thin	Status:	Unconfirmed	Alignment:	Friendly	Label:		Head (Km):	1	Tail (Km):	1
		Medium		Confirmed		Enemy						
		Thick										

2. Select the appropriate attributes from each set of options; as you select them, they are applied to the symbol in the Preview Box.

Line:	The options here represent progressively thicker lines.
Status:	Selecting **Unconfirmed** draws the arrow with a dashed line. Selecting **Confirmed** changes the arrow to a solid line.

Alignment:	If you select the **Friendly** attribute, the arrow is drawn in blue. Selecting **Enemy** changes the color to red.
Label:	Labels are limited to 8 characters. To enter a label, click the cursor in the label box, type the label, and press **<return>**. The label then appears on the arrow in the Preview Box.
Head (Km)*:	Enter the head width of the arrow in kilometers. The system accepts fractional values (tenths and hundredths).
Tail (Km)*:	Applies to axis–of–advance arrows only. Enter the tail width of the arrow in kilometers.

3. When you've finished entering the arrow's attributes, draw the arrow:

   • Position the cursor at the desired location on the map and click the left button once. The first point of the arrow (its tail) will be placed on the screen in that location.

   • Move to the next location and click again; continue placing individual points in this manner.

   • To place the last point (the arrow head) and terminate the drawing process, click once on the middle button.

Editing and Manipulating Objects on Overlays

Once you have created an object on an overlay, you can move it, delete it, or change its stacking order. You can also change its attributes, move its unit size designator, and add, move, and delete labels and points. In addition, Unit Symbols can be linked to other Unit Symbols or to message icons. We'll explain how to do these things in this section.

Selecting Objects

Before you can edit an object, you must select it. You can select one or multiple objects at a time. To select an individual object, simply point the cursor at it and click on the left mouse button.

There are two ways to select more than one object at a time:

   1. Point the cursor at an empty space, click the left mouse button and drag the cursor until a box surrounds all the objects you want to select; then release the mouse button.

---

* For axis–of–advance arrows, the widths of the arrow head and tail determine the distance between the lines of the arrow. They appear roughly in proportion in the Preview Box.

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2. Hold down the **<Shift>** key and click on each object you want to select.

To deselect one object in a group of selected objects, hold down **<Shift>** and click the object you do not want selected.

To perform operations on multiple objects, first select them, then use the Group Menu to move, duplicate, or delete them.

Object Menus

Each overlay object has a menu attached to it called an *object menu*. To see the menu, position the cursor over the object until a box appears around it, highlighting the object. For Control Measures, highlight one of the points. Hold down the left button of the mouse, and the object menu will appear. Object menu options differ according to the operations that can be performed on an object.

Moving Objects

You can move individual objects in two ways:

1. You can use the object menu:

   • Select **Move Object** from the object's menu to "pick up" the object. The menu disappears and a box appears around the entire object.

   • Without clicking, drag the cursor to the desired location.

   • Click the left mouse button to "drop" the object.

2. To move the object without using the menu,

   • Depress the middle mouse button to pick up the object.

   • Without releasing, drag the object to the desired location.

   • Release the button to drop the object.

There are also two options for moving multiple objects:

1. Select the objects you wish to move and select **Move** from the Group Menu. A single box appears around the selected objects, with the cursor in the middle. Move the mouse to the desired location, and click on the left button to drop the objects.

2. Select the objects you wish to move. Depress the middle mouse button to pick up the objects. Without releasing, drag the objects to the desired location. Release the button to drop the objects.

Moving Lines

Select **Move Line** from a line's object menu to move the entire line to another location. The menu disappears and a box appears around the line. Without clicking, move the cursor to the desired location. Click the left mouse button to "drop" the object.

Duplicating Multiple Objects

To duplicate a group of objects, select the objects, then select **Duplicate** from the Group Menu. A new group of objects will appear on the screen, slightly offset from the originals. If a duplicated object is linked, the linked objects are also duplicated.

Deleting Objects and Lines

Select **Delete Object** or **Delete Line** from the object menu to remove the object or line from the screen. The system will ask you for confirmation before deleting the object.

To delete multiple objects, select the objects, then select **Delete** from the Group Menu. The system will request confirmation before deleting the objects.

Selecting **Clear All** from the Overlays Menu at the top of the screen deletes all objects from the current (top) overlay. The system will ask you for confirmation before clearing the screen.

Changing Attributes of Existing Objects

If you want to change the attributes of an object, click on the object and select **Edit Attributes** or **Edit Attribs** from the object menu. The Attribute Menu bar for that object will open. Enter desired changes; changes are reflected directly on the screen, rather than in the Preview Box. Select **Finished** when you've completed entering all changes.

Moving the Unit Size Designator

Unit size designators on lines and operational areas can be moved to any point on the object. Place the cursor on the point you want to move the designator *to;* then select **Move Unit Size** entry from the object menu. The designator appears at the point from which you called up the object menu.

Changing the Stacking Order of Objects

You can change the stacking order of overlapping objects.   Selecting **Bring to Front** places the selected object on top of other objects in the overlay. Selecting **Send to Back** places the selected object beneath other objects in the overlay. If you move the object, it retains its position relative to other objects on the screen. That is, if you selected **Send to Back**, and you move the object so it overlaps with a second object, it will be stacked beneath the second object.

Linking Unit Symbols

You can express a hierarchical relationship between Unit Symbols by selecting a symbol lower in the hierarchy and linking it to a higher symbol. Any number of symbols can be linked together, but only one level of the hierarchy is visible on the screen at a time. Moving a superior object moves all the objects linked to it; when a superior object is moved, its subordinates remain in the same configuration. When a subordinate is moved, its superior is relocated based on the center of mass of *all* its subordinates.

To link a Unit Symbol to another Unit Symbol,

1. Point the cursor at the symbol lower in the hierarchy.

2. Select **Link To** from its object menu to pick up the object.

3. Move the cursor to the Unit Symbol you want to link to. An arrow attached to the first symbol appears as you move the cursor.

4. Position the arrow head on the symbol you wish to link to, and click the left mouse button. The linked object disappears from the screen.

Viewing Linked Unit Symbols

You can change which level of the hierarchy is viewed on the screen by selecting **Hierarchy** ˙ from the object's menu. **Hierarchy** ˙ is available only when the object is linked. Selecting it brings up a submenu that indicates how many layers up or down you can move (up to four in either direction). If you request to view a higher level of the hierarchy, the system shows the level you've requested and removes all subordinates from the screen. Likewise, if you request to view a lower level of the hierarchy, the system removes the superior object and shows all of its subordinates at that level. You can only view one level of the hierarchy at a time.

Unlinking Unit Symbols

To unlink an object, select **Unlink** from its object menu. If a unit icon loses all its subordinate objects as a result of unlinking, the icon will reappear on the screen.

Operations on Control Measure Labels

You can add, move, and delete labels on Control Measures.

Adding Labels

To add a label to a point, select **Add Label** from the object menu. The label will be the same as other labels on the object. You cannot add a label to a point that already has a label. If none of the points is labeled, you cannot add a label except by using the **Edit Attributes** option.

Moving Labels

To move a label, highlight it by positioning the cursor on it, and select **Move Label** from its object menu. Position the cursor at the new location and click the left mouse button. The label always maintains the same relative position to its point; for example, if you move a point, its label also moves. Similarly, if you change the scale of the map, labels will move relative to their points as they change position on the map. As with other move functions, you can depress the middle button to move the label instead of using its object menu.

Deleting Labels

To delete a label, highlight it by positioning the cursor on it, and select **Delete Label** from the object menu. **Note:** The system does **not** ask for confirmation before deleting the label.

Operations on Control Measure Points

To change the configuration of a control measure, you can add points, move them, or delete them.

Adding Points

To add a point between two existing points, click on an existing point and select **Add Point** from its object menu. A new point appears next to the point you clicked. To drop the new point, position the cursor at the desired location and click on the left mouse button.

Moving Points

To move one point of a Control Measure, highlight the point you want to move by positioning the cursor over it. Select **Move Point** from the object menu. Position the cursor at the desired location and click the left mouse button to drop the point.

To move a point without using the menu, simply depress the middle mouse button to pick up the point. Without releasing, drag the point to the desired location, and release the button to drop it.

Deleting Points

Selecting **Delete Point** removes a point from an object. Highlight the point you wish to delete by positioning the cursor over the point. Select **Delete Point** from the object menu; the point disappears from the screen. **Note:** The system will **not** ask for confirmation before deleting the point.

Saving an Overlay

To save an overlay, select **Save** from the Overlays Menu. The Overlay is stored on your workstation's disk, and you can retrieve it at any time.

You can save an overlay under a different name by selecting the **Save As...** option from the Overlays Menu. Use **Save As...** when you want to make a backup copy of an overlay, or when you want to keep the original overlay and a version with changes.

When you choose **Save As...**, the system will prompt you for a new name. Enter it and press <return> or click the **Save** button. The overlay will be saved under its new name.

Returning to Normal Mode

When you've finished creating or editing an overlay, select **Done Editing** from the Overlays Menu to return to Normal Mode. If you haven't saved changes made to an overlay, the following message appears on the screen:

```
"overlay name" has been edited.
Select the Save button if you wish to save these changes.
Select the Remove button if you wish to remove these changes.
```
| Save | | Remove |

To save the changes, click on the **Save** button or press <return>. To remove the changes, click on **Remove**.

Editing Overlays

Even though an overlay appears on the screen, its objects cannot be edited except in Edit Mode. To edit overlay objects,

1. Select **Edit...** from the Overlay Menu. A dialog box will open listing all available overlays.

2. Highlight the overlay you wish to edit by clicking on its name.

3. Press **<return>** or click the **Edit** button.

The Overlay Edit Menu will appear, and you can change the overlay as desired. Select **Done Editing** from the Overlays Menu when you've finished. The system will ask you whether you want to save or remove the changes you've entered.

MANIPULATING THE OVERLAY STACK

You can manipulate an overlay stack only when you're operating in Normal Mode, by using the Stacking Menu. Types of operations you can perform include highlighting objects on the top overlay on the stack, changing the stacking order of overlays, adding or removing an overlay from the stack, copying an overlay from your own or another workstation, sending an overlay to an IVIS simulator, and deleting an overlay from the disk. We describe how to perform these operations in the following subsections.

Highlighting Objects

When you select **Hilite Top** from the Overlays Menu, all the objects on the topmost overlay in the current stack become highlighted, and the menu option becomes **Unhilite Top**. Use this option to identify which objects are on an overlay. If you move a different overlay to the top of the stack, its objects become highlighted. Select **Unhilite Top** to turn off the highlighting option.

Changing Overlay Stacking Order

Use the **Rotate Up** and **Rotate Down** options in the Stacking Menu to rotate the entire stack of overlays by one. **Rotate Up** moves the top overlay to the bottom of the stack and all the other overlays in the stack one layer up; **Rotate Down** moves the bottom overlay to the top and all other overlays in the stack one layer down.

To change the order in which overlays are stacked, select **Stack...** from the Stacking Menu. A list of the overlays in the stack will appear on the screen. Select the overlay you wish to move by highlighting its name, and click the **To Top** or **To Bottom** button to move it to the top or bottom of the stack. When you've finished restacking the overlays, click **Close**.

Adding an Overlay to the Stack

To add an overlay to the current stack, select **Post to Map...** from the Stacking Menu. A list showing all the overlays on your disk appears on the screen. If an overlay is already open, its name does not appear on this list. Select the overlay you wish to add by highlighting its name, and click the **Post** button. The overlay is added to the top of the stack and its name is removed from the list of overlays available on disk. Click **Close** to return to the main menu.

To post an overlay to the Situation Display, select **Post to SItDlsp...** from the Stacking Menu. A list showing all the overlays on your disk appears on the screen. Select the overlay you wish to post by highlighting its name, and click the **Post** button. The overlay is added to the top of the Situation Display stack. Click **Close** to return to the main menu.

Removing an Overlay from the Stack

There are two options for removing an overlay from the stack. Selecting **Unpost From Map...** brings up a dialog box with a list of all overlays in the current stack. Highlight the overlay you wish to remove by clicking on its name. Press **<return>** or click the **Unpost** button. The overlay will be removed from the stack. The system will not request confirmation before removing the overlay; you can restore it to the stack by selecting **Post to Map...**.

Select **Unpost Top** to delete the top overlay from the stack. Again, the system does not request confirmation before removing the overlay; you can restore it to the stack by selecting **Post to Map...**.

To remove an overlay from the Situation Display, select **Unpost From SItDlsp...** to bring up a dialog box with a list of all overlays in the current stack. Highlight the overlay you wish to remove by clicking on its name. Press **<return>** or click the **Unpost** button. The overlay will be removed from the Situation Display stack. The system will not request confirmation before removing the overlay; you can restore it to the stack by selecting **Post to SItDlsp...**.

Copying Overlays

To copy an overlay from any workstation on the network,

1. Select **Copy...** from the Overlays Menu. A dialog box will open, listing all available overlays for a given workstation role. To see the overlays available on other workstation roles, click on the role box. The name of another role is displayed along with its associated overlays.

2. Highlight the overlay you wish to copy by clicking on its name.

3. If you're copying an overlay from your own workstation, you'll need to rename it. Type a new name to which to copy the overlay on your own workstation.

4. Press **<return>** or click the **Copy** button.

5. Click the **Close** button to return to the current window.

Sending an Overlay to an IVIS Simulator

To send an overlay to an IVIS simulator,

1. Select **Send...** from the Overlays Menu. A dialog box will open, listing all available overlays for your workstation.

2. Highlight the overlay you wish to send by clicking on its name.

3. Select the destination workstation by clicking on it.*

4. Click the **Send** button.

5. Click the **Close** button to return to the current window.

Deleting an Overlay from Disk

To delete an overlay from disk,

1. Select **Delete...** from the Overlays Menu. A dialog box will open, listing all the overlays on your disk.

2. Select the overlay you wish to delete by clicking on its name. The system will request confirmation.

3. When you confirm by clicking **OK** or pressing **<return>,** the overlay is deleted from the disk. If you don't want to confirm, click the **Cancel** button.

4. To return to the current window without deleting an overlay, click the **Close** button.

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* Note: For this release of the BnTOC workstation, the only available destinations are BnCmd Network and SitDisp WorkStation. Other destinations will be added as they are implemented.

TRACKING FRIENDLY VEHICLES

As posnav information comes in over the network, Friendly Vehicle Icons are automatically posted on the Map Display. As a vehicle moves, its icon's position also changes on the Map Display.

Vehicle Aggregation/Deaggregation

Friendly Vehicle Icons are different from all other map objects in that they can be aggregated and deaggregated into a specified unit size (battalion, company, platoon, or vehicle).

When you select **Aggregate** from a Friendly Vehicle Icon's object menu, a sub-menu with the options Battalion, Company, Platoon, and Vehicle pops up on the screen. Select the unit size you want represented; if the unit size is larger than that currently displayed, all related vehicles in that unit disappear from the screen and are replaced by a Friendly Vehicle Aggregate icon (see Figure 3-1d). This icon has a label that identifies the unit. The position of an aggregate symbol on the screen is determined by its component positions. If the requested unit size is smaller than what is currently displayed, the larger unit disappears from the screen and the selected smaller units are displayed.

Battalion and Company Commanders' vehicles are an exception to this aggregation scheme. If you aggregate a group of vehicles within a company to the platoon level, the Company Commander's vehicle remains separate from the platoon icons. When you aggregate vehicles in the company to the company level, however, the Company Commander's vehicle disappears from the screen. Similarly, the Battalion Commander's vehicle remains on screen when you aggregate vehicles in that battalion to the company or platoon level. However, when you aggregate battalion vehicles to the battalion level, the Battalion Commander's vehicle disappears from the screen.

The map scale you're working in affects the way Friendly Vehicle Icons are aggregated. A different aggregation state is maintained at each scale, i.e., when you change the aggregation level at one scale, that change is not implemented at the other scales. The Bn TOC system automatically aggregates Friendly Vehicle Icons to a certain unit size as they are posted to the Map Display, depending on the current scale and whether the vehicles belong to your own battalion or to another battalion. The following table shows the default aggregation levels for each scale.

Scale	Default Agg Level for Own Bn Units Upon Receipt	Default Agg Level for Other Bn Units Upon Receipt
1:25,000	Platoon	Company
1:50,000	Platoon	Company
1:125,000	Company	Company
1:250,000	Battalion	Battalion

As an example, if your Map Display is scaled to 1:50,000, Friendly Vehicle Icons (FVIs) belonging to another battalion are automatically posted as aggregate icons at the Company level, and FVIs belonging to your own battalion are posted at the Platoon level. You can de-aggregate icons if you want to view them at a different level; simply select the desired level from the icon's object menu. The current size of the aggregated unit will not be activated on the menu, that is, if vehicles are aggregated at the Company level, **Company** will not not be available as an option.

Off-Screen Arrows for Friendly Vehicle Icons

When you aggregate or deaggregate Friendly Vehicle Icons, it is possible that some or all of the resulting objects will be off screen. When this is the case, an arrow appears at the edge of the screen, pointing at the off-screen object. One arrow appears for each off-screen object. Arrows remain on the screen until another aggregate operation is performed.

To identify what the arrow is pointing at, point your cursor at the arrow. The associated icon will appear on screen, nearby.

Off-screen arrows have object menus. Selecting **Delete** will remove the arrow from the screen. The associated icon is *not* deleted, however. Selecting **Go To** centers the arrow's associated icon on the screen.

You can also perform operations on objects associated with off-screen arrows without the objects being on screen. Click on the middle mouse button while pointing at the arrow, and the object's menu will appear. Perform operations just as you would on the object itself.

OPERATIONS ON IVIS MESSAGE ICONS

As IVIS messages are posted to the Map Display from the Message Module or the network, message icons appear on the screen. (See Figure 3-1e for an example of an IVIS Message Icon.) You can perform several operations on message icons from the Map Module:

- Link a posted message icon to a Unit Symbol. Any number of message icons can be linked to a Unit Symbol.

- View the message associated with a particular icon.

- Change the stacking order of the icons.

We describe these operations in the following subsections.

Linking Message Icons to Unit Symbols

Any number of message icons can be linked to a Unit Symbol. However, to link a message icon to a Unit Symbol, the Unit Symbol must be part of the overlay you're editing. To link a message icon to a Unit Symbol,

1. Point the cursor at the message icon and select **Link To** from its object menu.

2. Move the cursor to the Unit Symbol you want to link to. An arrow attached to the message icon appears as you move the cursor.

3. Position the arrow head on the Unit Symbol, and click the left mouse button. The message icon disappears from the screen.

The message icon is now linked to the Unit Symbol.

Viewing a Message

To view the messages associated with a Unit Symbol, select **View** from the Unit Symbol's object menu. A folder outline appears on the Communications and Planning Display (the right-hand monitor). Position the outline where you want it, click on the left mouse button to drop it on the screen. This temporary folder contains the message titles associated with the Unit Symbol. You can open the messages for viewing by double-clicking on the message title or by highlighting the title and clicking on the **Selected** option in the View Messages menu.

To view the messages associated with an *unlinked* message icon, select **View** from the message icon's object menu. A Message Viewer will pop up on the Map Display detailing the contents of the message.

Changing Message Stacking Order

You can change the stacking order of overlapping message icons. Selecting **Bring to Front** places the selected icon on top of other objects in the overlay. Selecting **Send to Back** places the selected icon beneath other objects in the overlay.

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4.   The Message Module

The Message Module is the BnTOC component used to

- Receive IVIS-style reports (spot, contact) from IVIS simulators and other BnTOC workstations on the network

- Record them into the BnTOC workstation's message database

- Compose IVIS-style reports and distribute them to other users on the network

- Organize and manage messages by means of folders and the Workbook

In this section, we describe the components of the Message Module and their functions. We also provide instructions for composing messages, displaying contents of folders, and viewing and disposing of messages (including sending them to another user on the network, storing them in folders, and posting them to maps).

MESSAGE MODULE COMPONENTS

The Message Module uses a system of folders to organize and manage messages. Individual folders are used to store IVIS messages; they also provide the basis for the journal and the workbook. Four special folders (In, Journal, Map Display, and Situation Display) and the Workbook always appear on each workstation. The Workbook has (TBD) standard sections; other workbook sections can be created by the user as needed. Any user on the network can read the information in a folder, but only the BnTOC workstation that creates a folder can write to it.

Messages

IVIS-style reports are the only type of message used by the BnTOC workstation. They can be received over the network from IVIS simulators, or they can be created at a BnTOC workstation using the Message Module.

Depending on which folder is current, you can perform the following types of operations on messages:

- Receive incoming messages

- Designate which types of messages you wish to receive from IVIS simulators, i.e., filter out certain message types

- Compose new messages

- View the details of a selected message

- Route messages to other BnTOC workstations or IVIS simulators

- Store a message in a specific folder or workbook section

- View the contents of folders belonging to other workstations on the network

- Delete messages

Folders and The Workbook

Four special folders are standard on each workstation: InFolder, the Journal Folder, the Map Display Folder, and the Situation Display Folder.

- All new messages are placed in the *InFolder* as they arrive. The operator can then view the messages, forward them to another workstation on the network, copy them to another folder, or delete them. When a message is copied to the Map Display or Situation Display folder, it is automatically posted to the corresponding map. The InFolder is always open; you access other folders through it. The InFolder is shown in Figure 4-1.

- The *Journal* folder provides a means of recording a chronological record of events, usually for a 24-hour period. It can serve as a permanent record for training, operational reviews, or historical research.

- Copying a message to the *Map Display Folder* posts the information in that message (i.e., a particular object at a specific location) on the Map Display (the local display on the left monitor).

- Copying a message to the *Situation Display Folder* posts the information in that message on the Situation Display.

In addition to the four special folders, the Workbook contains a set of standard sections, including TBD. You can also create new sections in the Workbook. Use the Workbook to organize messages coming into the TOC, and as a reference for preparing plans, orders, and reports.

```
┌─────────────────────────────────────────────────────┐
│                   Role ID/InFolder                    │
├─────────────────────────────────────────────────────┤
│  Folder    Filter   Compose                           │
├─────────────────────────────────────────────────────┤
│  View Messages:│ Previous │  │ Selected │  │  Next  │ │
│                                                       │
│  Dispose of Messages: │  Route  │  │ Delete │        │
├─────────────────────────────────────────────────────┤
│                                                    s  │
│                                                    █  │
│                                                    █  │
│                                                    █  │
│                                                    █  │
│                                                    █  │
│                     List Box                       █  │
│                                                    █  │
│                                                    █  │
│                                                    █  │
│                                                    █  │
│                                                    █  │
│                                                    t  │
└─────────────────────────────────────────────────────┘
```
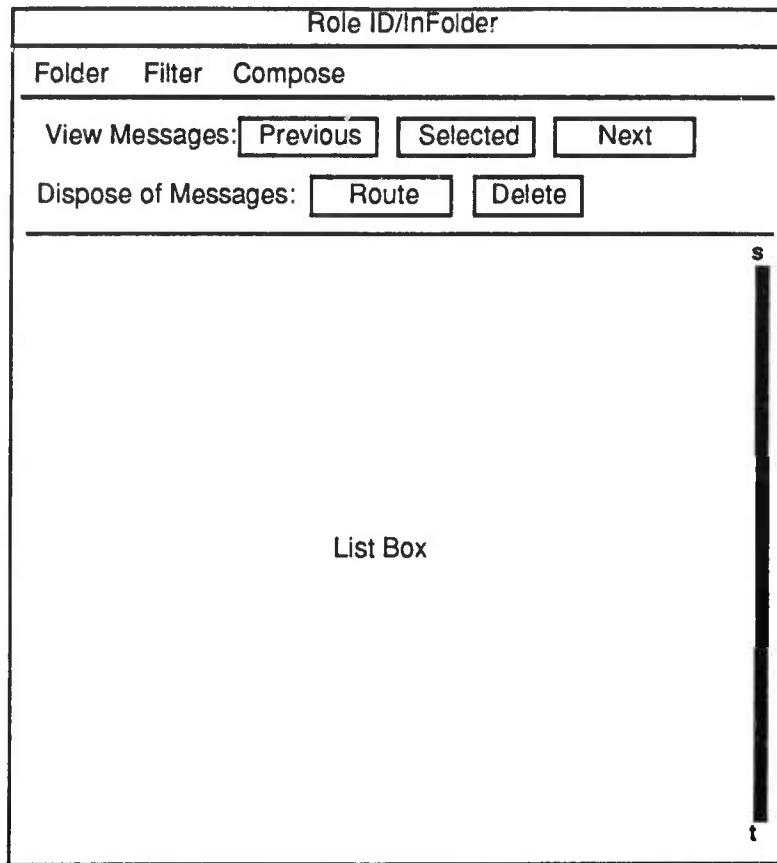
Figure 4-1. *Message   Module   InFolder*

USING THE MESSAGE MODULE

After startup, the InFolder is always displayed on the right monitor. To activate the folder window, slide the mouse to the right until the cursor arrow appears on the right-hand monitor. Click anywhere on the InFolder area. The window frame changes color, indicating that the InFolder is active.

Operations on Messages

Depending on which folder is current, users can filter, sort, receive, view, dispose of, and compose messages. These operations are described in this section.

Before you can perform an operation on a message, you must select it. To select a message, click on the message information line in the list box. To select multiple messages, click on each message with the left mouse button. Selected messages are highlighted. To deselect a message, simply position the cursor over the desired message and click the left mouse button.

Filtering Incoming Messages

You can determine which types of reports are received from IVIS simulators by your workstation by using the **Receive Filter...** option on the Filter Menu. When you select **Receive Filter...**, a Filter Messages box appears on the screen. Select the types of desired IVIS messages by clicking next to them, then click the **Apply** button or press **<return>**. You will be returned to the current folder.

Sorting Messages

Not yet implemented.

Receiving Messages

As messages come in over the network, they are automatically placed in the InFolder. Upon receipt, a one-line tag providing information about the message is displayed in the List Box. This information includes message status, date, time, originator, and message type (e.g., spot or contact). A typical incoming message line might look like this:

NA 21 1515:54 Y02 Contact

where **NA** indicates the message status, **21** is the date, **1515:54** is the time, **Y02** the duty position of the originator (in this case, the Battalion Y S2), and **Contact** the message type.

There are three message status codes: **N** (New), **A** (Aggregate), and **C** (Component). **N** simply means that the message is new and has not been viewed. **A** (Aggregate) indicates that the message received is composed of more than one report referring to the same battlefield incident; reports are automatically aggregated by the BnTOC system. **C** (Component) means that the message is part of an aggregate report. A message cannot be coded as both Aggregate and Component.

Incoming messages remain in the InFolder for five minutes. If they are not disposed of within that period, they are automatically copied to the Journal Folder and deleted from the InFolder.

Message Aggregation

As mentioned above, messages are automatically aggregated by the BnTOC system. When a message arrives, the BnTOC system checks the messages already in the InFolder to see if the new message should be aggregated. Aggregation is based on two criteria:

- Time—The message refers to a battlefield event within a given time frame, which is established upon system startup.

- Location—Enemy targets are within a given radius (established upon system startup) of each other.

If both criteria apply, the message is aggregated. The original component messages are removed from the folder and the aggregate put in their place. Original components can be viewed from the aggregate and added back into the folder. (See *Viewing Messages* below.)

Viewing Messages

To view a received message, simply double-click on the message information line in the InFolder's list box. A box labeled "Message Viewer" will appear on the screen showing all the associated information for that message. For example, a Contact Report will show what kind of vehicle was contacted, and where. Spot Reports indicate vehicle types, damaged vehicles, location, heading, enemy action, own action, and when the vehicle was spotted. You can send the message by clicking on the **Route** button; click the **Cancel** button to return to the current folder. Figure 4-2 shows an example of the Message Viewer.

II = "Components" for aggregate messages
    "Add Component" for component messages
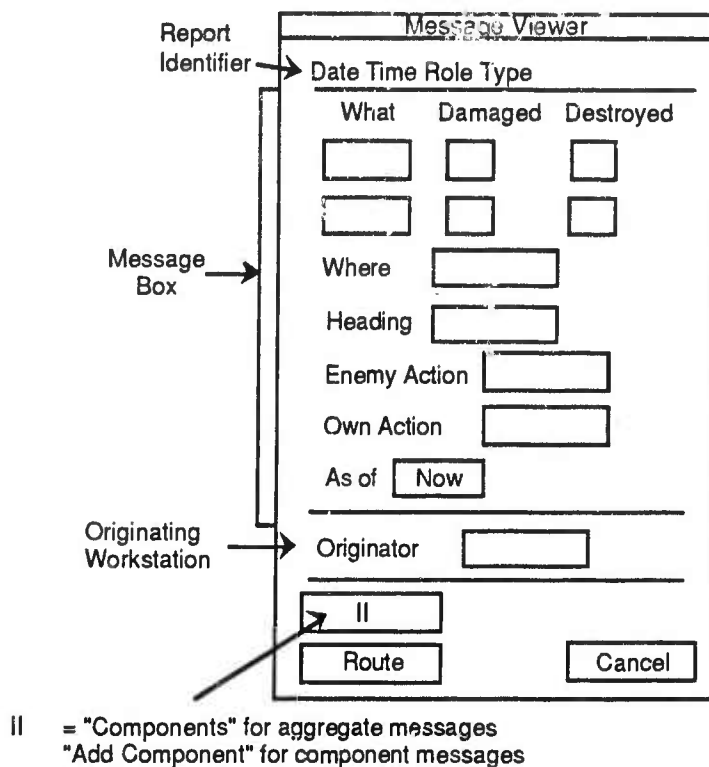
Figure 4-2. *Message   Viewer*

If a message is categorized as an Aggregate, the button in the lower left corner of the viewer will be labeled **Components**. Clicking on it will bring up individual viewers for all the message components. When you've finished viewing a component, click on the **Close** button.

If you're viewing a Component, the button in the lower left corner of the viewer will be labeled **Add Component**. To explicitly add the component back into the InFolder, click in the **Add Component** button.

You can also use the **View Messages** Menu as a quick means of moving among and looking at messages in the current folder. This menu has three options: **Previous**, **Selected**, and **Next**. All three options assume that a message has already been selected (by clicking on it in the list box). When a message is selected for viewing, the icons associated with it will be highlighted on the map.

Previous:	Clicking on **Previous** selects the previous message and opens it for viewing.
Selected:	Clicking on **Selected** opens the selected message for viewing.
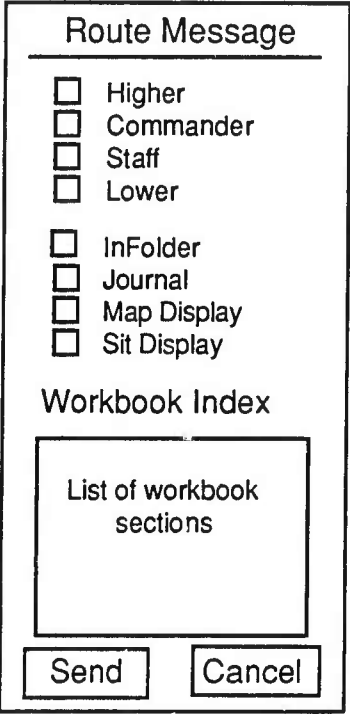
Next: Clicking on **Next** selects the next message and opens it for viewing.

When you've finished viewing the message, click the **Close** button to return to the current folder.

Routing Messages

To forward a message to another workstation or an IVIS simulator, or place it in a specific folder:

1. Select the message you want to send by clicking on it.

2. Click on **Route** to bring up the following dialog box:

```
┌─────────────────────────────┐
│      Route Message          │
│    ─────────────────        │
│   ☐  Higher                 │
│   ☐  Commander              │
│   ☐  Staff                  │
│   ☐  Lower                  │
│                             │
│   ☐  InFolder               │
│   ☐  Journal                │
│   ☐  Map Display            │
│   ☐  Sit Display            │
│                             │
│    Workbook Index           │
│                             │
│   ┌─────────────────────┐   │
│   │                     │   │
│   │   List of workbook  │   │
│   │      sections       │   │
│   │                     │   │
│   │                     │   │
│   │                     │   │
│   └─────────────────────┘   │
│                             │
│   ┌────────┐  ┌──────────┐  │
│   │  Send  │  │  Cancel  │  │
│   └────────┘  └──────────┘  │
└─────────────────────────────┘
```

3. Click on the box(es) next to the desired destination(s) or on specific workbook section names to select them. Selected boxes will be highlighted.

4. Click **Send** to send the message. The message is sent and you are returned to the current folder.

5. Click **Cancel** to return to the current folder without sending the message.

Deleting Messages

Click on **Delete** to remove a selected message from the current folder. The system does not request confirmation before deleting the message.

Deleting a message from the Map Display folder or the Sit Display folder also deletes its icon from the Map Display or Situation Display.

Composing IVIS Messages

The Compose Menu allows you to quickly compose a variety of reports. Selecting this menu brings up a list of report types that you can create. These include: Adjust Fire, Ammunition Status, Suppression, Contact, Intelligence, Shell, Spot, Free Text, NBC, and Situation Reports. Selecting a report type brings up a dialog box, called the Message Composer, requesting information.

Three types of fields are provided for entering information in Message Composer windows: menus offering a set of valid responses, lists of destination options, and location fields requiring UTM coordinates. The first two types are entered by making a selection with the mouse. The third type, location fields, can be entered in two ways:

(1) You can simply type the UTM coordinates in the "Where" box and press
    `<return>`.

(2) Highlight the "Where" box, and click at the appropriate location on the Map
    Display. If there is more than one "Where" box, highlight each one before clicking
    on the map to enter the location.

In either case, an icon appears temporarily on the map when the coordinates are entered. If an object is associated with a location, for example, an enemy tank or obstacle, its associated icon appears on the map. If the object is unknown, a generic IVIS message icon appears (Figure 4-3). Once the message is sent, the icon disappears from the Map Display. To post an IVIS message to the Map Display, you must copy/post it to the Map Display Folder.
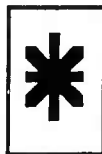
Figure 4-3. *Generic IVIS Message Icon*

Composing an Adjust Fire Report

Selecting **Adjust** brings up a Message Composer that allows you to direct fire to an enemy target. It also identifies the originating workstation and provides access to the Route Message dialog box, so you can send the message to other workstations or place it in a folder or workbook section.

```
┌─────────────────────────────────────────┐
│           Message Composer               │
│ ┌─────────────────────────────────────┐  │
│ │  Adjust Fire Report                 │  │
│ │  ─────────────────────────────────  │  │
│ │                      ┌───────────┐  │  │
│ │  Target:             │           │  │  │
│ │                      └───────────┘  │  │
│ │       --OR--                        │  │
│ │                   ┌────────┐        │  │
│ │  LR Shift:        │        │        │  │
│ │                   └────────┘        │  │
│ │                   ┌────────┐        │  │
│ │  AD Shift:        │        │        │  │
│ │                   └────────┘        │  │
│ │  ─────────────────────────────────  │  │
│ │  ☐ FFE    ☐ EOM                     │  │
│ │  ─────────────────────────────────  │  │
│ │               ┌───────────┐         │  │
│ │  Originator   │           │         │  │
│ │               └───────────┘         │  │
│ │  ─────────────────────────────────  │  │
│ │ ┌─────────────┐    ┌─────────────┐  │  │
│ │ │    Route    │    │   Cancel    │  │  │
│ │ └─────────────┘    └─────────────┘  │  │
│ └─────────────────────────────────────┘  │
└─────────────────────────────────────────┘
```

1. To enter the initial location of a target, type in the UTM coordinates of the target in the box labeled "Target" and press **<return>**, or click on the Map Display to enter the location of the target.

2. To adjust fire, use the LR (Left/Right) Shift and AD (Add/Drop) Shift Boxes to select the required adjustment. Clicking on the **LR Shift** box brings up the following options: L50, L100, L150, L200, R50, R100, R150, and R200. The **AD Shift** box offers the same options, labeled A and D, respectively.

3. Click on the FFE (fire for effect) and EOM (end of mission) boxes, if appropriate. When selected, the boxes are highlighted.

4. The **Originator** box defaults to the call sign of the workstation you're composing on. To edit the originator, highlight the **Originator** box, type in any valid call sign, and press **<return>**.

5. Click on the **Route** button to bring up the Route Message dialog box; select the desired destinations, click **Send**, and then **Cancel** to return to the Message Composer.

6. Click **Cancel** to return to the InFolder without sending a message.

Composing an Ammunition Status Report

Selecting **Ammo** brings up a Message Composer window that allows you to provide information about ammunition status. It also identifies the originating workstation and provides access to the Route Message dialog box, so you can send the message to other workstations or place it in a folder or workbook section.

```
┌─────────────────────────────────────────┐
│            Message Composer               │
├─────────────────────────────────────────┤
│                                           │
│       Ammunition Status Report            │
│       ──────────────────────────         │
│       Ammo            Status              │
│       Heat:         ┌──────────┐          │
│                     └──────────┘          │
│       Sabot:        ┌──────────┐          │
│                     └──────────┘          │
│       50:           ┌──────────┐          │
│                     └──────────┘          │
│       7.62:         ┌──────────┐          │
│                     └──────────┘          │
│       Smoke:        ┌──────────┐          │
│       ──────────────└──────────┘          │
│                                           │
│       Originator  ┌──────────┐            │
│       ────────────└──────────┘────────    │
│   ┌─────────────┐      ┌─────────────┐    │
│   │    Route    │      │   Cancel    │    │
│   └─────────────┘      └─────────────┘    │
└─────────────────────────────────────────┘
```

1. To designate the status of each type of ammunition, click on the box in the Status column. The options Green, Amber, Red, and Black will appear; select the appropriate one by clicking on it.

2. The **Originator** box defaults to the call sign of the workstation you're composing on. To edit the originator, highlight the **Originator** box, type in any valid call sign, and press <return>.

3. Click on the **Route** button to bring up the Route Message dialog box; select the desired destinations, click **Send**, and then **Cancel** to return to the Message Composer.

4. Click **Cancel** to return to the InFolder without sending a message.

Composing a Call for Fire Report

Selecting **CFF** brings up a Message Composer window that allows you to provide information about an enemy target. It also identifies the originating workstation and provides access to the Route Message dialog box, so you can send the message to other workstations or place it in a folder or workbook section.

```
┌─────────────────────────────────────────┐
│           Message Composer               │
│  ┌────────────────────────────────────┐  │
│   Call for Fire Report                   │
│  ──────────────────────────────────────  │
│   What              Where                │
│   ┌──────────┐      ┌──────────────┐     │
│   └──────────┘      └──────────────┘     │
│  ──────────────────────────────────────  │
│   Originator    ┌──────────────┐         │
│                 └──────────────┘         │
│  ┌──────────────┐    ┌──────────────┐    │
│  │    Route     │    │    Cancel    │    │
│  └──────────────┘    └──────────────┘    │
└─────────────────────────────────────────┘
```

1. Click in the box in the **What** column to bring up a spot menu listing the types of possible contacts: Tank, Helo, FWAir, ARTY, Truck, Troop, ATGM, and PC.

2. Select the appropriate vehicle type by clicking on it; it automatically appears in the box.

3. To enter location, click in the corresponding box in the **Where** column and type in the UTM coordinates and press **<return>**. Or you can simply click on the Map Display at the desired location.

4. The **Originator** box defaults to the call sign of the workstation you're composing on. To edit the originator, highlight the **Originator** box, type in any valid call sign, and press **<return>**.

5. Click on the **Route** button to bring up the Route Message dialog box; select the desired destinations, click **Send**, and then **Cancel** to return to the Message Composer.

6. Click **Cancel** to return to the InFolder without sending a message.

Composing a Contact Report

Selecting **Contact** brings up a Message Composer window that requests information about the type of contact made and its location. It also identifies the originating workstation and provides access to the Route Message dialog box, so you can send the message to other workstations or place it in a folder or workbook section.

```
┌──────────────────────────────────────────┐
│           Message Composer                │
│  ════════════════════════════════════════ │
│   Contact Report                          │
│   ─────────────────────────────────────   │
│   What                 Where              │
│   ┌───────────┐        ┌───────────┐      │
│   │           │        │           │      │
│   └───────────┘        └───────────┘      │
│   ┌───────────┐        ┌───────────┐      │
│   │           │        │           │      │
│   └───────────┘        └───────────┘      │
│   ┌───────────┐        ┌───────────┐      │
│   │           │        │           │      │
│   └───────────┘        └───────────┘      │
│   ┌───────────┐        ┌───────────┐      │
│   │           │        │           │      │
│   └───────────┘        └───────────┘      │
│   ──────────────────────────────────────  │
│   Originator    ┌──────────────┐          │
│                 │              │          │
│                 └──────────────┘          │
│   ──────────────────────────────────────  │
│   ┌───────────┐        ┌───────────┐      │
│   │   Route   │        │  Cancel   │      │
│   └───────────┘        └───────────┘      │
└──────────────────────────────────────────┘
```

1. Click in a box in the **What** column to bring up a spot menu listing the types of possible contacts: Tank, Helo, FWAir, ARTY, Truck, Troop, ATGM, and PC.

2. Select the appropriate vehicle type by clicking on it; it automatically appears in the box.

3. To enter location, click in the corresponding box in the **Where** column and type in the UTM coordinates and press **<return>**. Or you can simply click on the Map Display at the desired location.

4. The **Originator** box defaults to the call sign of the workstation you're composing on. To edit the originator, highlight the **Originator** box, type in any valid call sign, and press **<return>**.

5. Click on the **Route** button to bring up the Route Message dialog box; select the desired destinations, click **Send**, and then **Cancel** to return to the Message Composer.

6. Click **Cancel** to return to the InFolder without sending a message.

Composing an Intelligence Report

Selecting **Intel** brings up a Message Composer that requests information about enemy and friendly units and obstacles. It also identifies the originating workstation and provides access to the Route Message dialog box, so you can send the message to other workstations or place it in a folder or workbook section.

```
┌──────────────────────────────────────────┐
│            Message Composer               │
├──────────────────────────────────────────┤
│ Intelligence Report                       │
│ ─────────────────                         │
│              Enemy Unit  Friendly Unit    │
│     What      ┌─────┐     ┌─────┐         │
│               └─────┘     └─────┘         │
│     Where    ┌───────┐   ┌───────┐        │
│              └───────┘   └───────┘        │
│     Number    ┌───┐       ┌───┐           │
│               └───┘       └───┘           │
│     Activity ┌───────┐   ┌───────┐        │
│              └───────┘   └───────┘        │
│     Heading  ┌───────┐   ┌───────┐        │
│              └───────┘   └───────┘        │
│  ───────────────────────────────────────  │
│        Obstacles                          │
│     What      ┌────────┐                  │
│               └────────┘                  │
│     Where     ┌────────┐                  │
│               └────────┘                  │
│     Where     ┌────────┐                  │
│               └────────┘                  │
│  ───────────────────────────────────────  │
│      As of            ┌───────┐           │
│                       │  Now  │           │
│                       └───────┘           │
│  ───────────────────────────────────────  │
│     Originator   ┌─────────┐              │
│                  └─────────┘              │
│  ───────────────────────────────────────  │
│  ┌─────────┐          ┌─────────┐         │
│  │  Route  │          │ Cancel  │         │
│  └─────────┘          └─────────┘         │
└──────────────────────────────────────────┘
```

1. Clicking in a **What, Number,** or **Activity** box brings up a spot menu listing available options. Select the appropriate option by clicking on it; it automatically appears in the box.

2. To enter the vehicle's location and heading, click in the corresponding boxes and type in the UTM coordinates and press **<return>**. Or simply click on the Map Display at the desired location.

3. Click on the **As of** box to list the following options: Now, -5, -10, -15, -20, -30, and -45 minutes prior to the creation of the report. Again, select the correct time by clicking on it.

4. The **Originator** box defaults to the call sign of the workstation you're composing on. To edit the originator, highlight the **Originator** box, type in any valid call sign, and press **<return>**.

5. Click on the **Route** button to bring up the Route Message dialog box; select the desired destinations, click **Send**, and then **Cancel** to return to the Message Composer.

6. Click **Cancel** to return to the InFolder without sending a message.

Composing a Shell Report

Selecting **Shell** brings up a Message Composer window that requests information about the number and location of shells, and when they were spotted. It also identifies the originating workstation and provides access to the Route Message dialog box, so you can send the message to other workstations or place it in a folder or workbook section.

```
+---------------------------------------------------+
|              Message Composer                     |
|  +---------------------------------------------+  |
|   Shell Report                                    |
|   _____    |
|   Number              Where                       |
|   +----------+        +----------+                |
|   |          |        |          |                |
|   +----------+        +----------+                |
|                       +----------+                |
|   As of               |  Now     |                |
|                       +----------+                |
|   _____     |
|   Originator  +------------------------+           |
|               |                        |           |
|               +------------------------+           |
|   _____     |
|  +----------+              +------------+          |
|  |  Route   |              |  Cancel    |          |
|  +----------+              +------------+          |
+---------------------------------------------------+
```

1. Click in the **Number** box to bring up a spot menu listing available options. Select the appropriate option by clicking on it; it automatically appears in the box.

2. To enter shelling location, click in the **Where** box and type in the UTM coordinates and press **<return>**. Or simply click on the Map Display at the desired location.

3. Click on the **As of** box to list the following options: Now, -5, -10, -15, -20, -30, and -45. Again, select the correct time by clicking on it.

4. The **Originator** box defaults to the call sign of the workstation you're composing on. To edit the originator, highlight the **Originator** box, type in any valid call sign, and press **<return>**.

5. Click on the **Route** button to bring up the Route Message dialog box; select the desired destinations, click **Send**, and then **Cancel** to return to the Message Composer.

6. Click **Cancel** to return to the InFolder without sending a message.

Composing a Spot Report

Selecting **Spot** brings up a Message Composer window that requests information about the type of enemy target spotted, damaged vehicles, location, heading, enemy and own actions taken, and when the vehicle was spotted. It also identifies the originating workstation and provides access to the Route Message dialog box, so you can send the message to other workstations or place it in a folder or workbook section.

```
┌──────────────────────────────────────┐
│         Message Composer              │
│  ┌──────────────────────────────────┐ │
│  │ Spot Report                      │ │
│  │  ──────────────────────────────  │ │
│  │   What      Number    Destroyed  │ │
│  │  ┌──────┐   ┌───┐      ┌───┐      │ │
│  │  └──────┘   └───┘      └───┘      │ │
│  │  ┌──────┐   ┌───┐      ┌───┐      │ │
│  │  └──────┘   └───┘      └───┘      │ │
│  │                                  │ │
│  │  Where      ┌────────┐           │ │
│  │             └────────┘           │ │
│  │  Heading    ┌────────┐           │ │
│  │             └────────┘           │ │
│  │  Enemy Action ┌────────┐         │ │
│  │               └────────┘         │ │
│  │  Own Action  ┌────────┐          │ │
│  │              └────────┘          │ │
│  │  As of  ┌──────┐                 │ │
│  │         │ Now  │                 │ │
│  │         └──────┘                 │ │
│  │  ──────────────────────────────  │ │
│  │  Originator  ┌────────┐          │ │
│  │              └────────┘          │ │
│  │  ──────────────────────────────  │ │
│  │  ┌────────┐        ┌────────┐    │ │
│  │  │ Route  │        │ Cancel │    │ │
│  │  └────────┘        └────────┘    │ │
│  └──────────────────────────────────┘ │
└──────────────────────────────────────┘
```

1. Click in the **What** box to bring up a spot menu listing the types of possible vehicles: Tank, Helo, FWAir, ARTY, Truck, Troop, ATGM, and PC.

2. Select the appropriate type by clicking on it; it automatically appears in the box.

3. Clicking in a **Number** box provides a list of numbers to select from.

4. Clicking in a **Destroyed** box provides a list of numbers to select from.

5. To enter the vehicle's location, click in the corresponding boxes and type in the UTM coordinates and press **<return>**. Or simply click on the Map Display at the desired location.

6. Enter the vehicle's heading by clicking in the box and typing in the information or clicking on the Map Display.

7. Clicking on the **Enemy Action** or **Own Action** box brings up a list of possible actions: Gnd Atk, Air Atk, Fire, Defend, Delay, and Recon. Select the appropriate action by clicking on it, and it will automatically appear in the box.

8. Click on the **As of** box to list the following options: Now, -5, -10, -15, -20, -30, and -45. Again, select the correct time by clicking on it.

9. The **Originator** box defaults to the call sign of the workstation you're composing on. To edit the originator, highlight the **Originator** box, type in any valid call sign, and press **<return>**.

10. Click on the **Route** button to bring up the Route Message dialog box; select the desired destinations, click **Send**, and then **Cancel** to return to the Message Composer.

11. Click **Cancel** to return to the InFolder without sending a message.

Composing a Free Text Report

Selecting **Free Text** brings up a Message Composer window that allows you to type in
text as desired, to record incidents, for example. It also identifies the originating
workstation and provides access to the Route Message dialog box, so you can send the
message to other workstations or place it in a folder or workbook section.

```
┌─────────────────────────────────────────┐
│            Message Composer              │
│                                          │
│   Free Text Report                       │
│   ┌───────────────────────────────┐      │
│   │                               │      │
│   │                               │      │
│   │                               │      │
│   │                               │      │
│   │                               │      │
│   │                               │      │
│   │                               │      │
│   │                               │      │
│   │                               │      │
│   └───────────────────────────────┘      │
│                                          │
│   Originator  ┌──────────────┐           │
│               └──────────────┘           │
│  ─────────────────────────────────────   │
│   ┌──────────────┐      ┌──────────────┐ │
│   │    Route     │      │    Cancel    │ │
│   └──────────────┘      └──────────────┘ │
└─────────────────────────────────────────┘
```

1. Place the cursor in the empty box and begin typing your message.

2. The **Originator** box defaults to the call sign of the workstation you're composing
   on. To edit the originator, highlight the **Originator** box, type in any valid call
   sign, and press **<return>**.

3. Click on the **Route** button to bring up the Route Message dialog box; select the
   desired destinations, click **Send,** and then **Cancel** to return to the Message
   Composer.

4. Click **Cancel** to return to the InFolder without sending a message.

Composing an NBC Report

Selecting **NBC** brings up a Message Composer window that requests information about nuclear, biological, and chemical attacks. It also identifies the originating workstation and provides access to the Route Message dialog box, so you can send the message to other workstations or place it in a folder or workbook section.

```
┌─────────────────────────────────────────┐
│           Message Composer               │
│ ┌───────────────────────────────────────┤
│ │NBC Report                             │
│ │                                       │
│ │  Obs Loc.  [          ]               │
│ │  Atk Loc.  [          ]               │
│ │  Burst    [     ]                     │
│ │  Attack   [        ]                  │
│ │  Flash/Bang Time  [ ]                 │
│ │  Number Shells  [ ]                   │
│ │  Nuc Crtr Diam (m)  [ ]               │
│ │  Nuc Cloud Wi (Deg)  [ ]              │
│ │  Nuc Cloud Hi (Deg)  [ ]              │
│ │  ─────────────────────────────        │
│ │  Originator  [          ]             │
│ │  ─────────────────────────────        │
│ ├─────────────────┬─────────────────────┤
│ │     Route       │      Cancel         │
│ └─────────────────┴─────────────────────┘
```

1. To enter the observer and attack locations, click in the **Obs Loc.** and **Atk Loc.** boxes and type in the UTM coordinates and press **<return>**. Or simply click on the Map Display at the desired location.

2. Clicking in the **Burst** box provides the options "Air" or "Surface" to select from.

3. Clicking in the **Attack** box allows you to choose the type of attack: Nuclear, Biological, or Chemical.

4. The remaining options refer to nuclear attacks; provide the information requested by typing it in each box.

5. The **Originator** box defaults to the call sign of the workstation you're composing on. To edit the originator, highlight the **Originator** box, type in any valid call sign, and press **<return>**.

6. Click on the **Route** button to bring up the Route Message dialog box; select the desired destinations, click **Send**, and then **Cancel** to return to the Message Composer.

7. Click **Cancel** to return to the InFolder without sending a message.

Composing a Situation Report

Selecting **SitRep** brings up a Message Composer window that allows you to provide the details of a Situation Report. It also identifies the originating workstation and provides access to the Route Message dialog box, so you can send the message to other workstations or place it in a folder or workbook section.

```
┌──────────────────────────────────────────────┐
│            Message Composer                    │
│ ┌──────────────────────────────────────────┐ │
│  Situation Report                             │
│  ─────────────────────────────────────────   │
│    As of  ┌──────┐                            │
│           │ Now  │                            │
│           └──────┘                            │
│    FLOT       ┌──────────────────┐            │
│               │                  │            │
│               └──────────────────┘            │
│               ┌──────────────────┐            │
│               │                  │            │
│               └──────────────────┘            │
│    Enemy Act  ┌──────────┐                    │
│               │          │                    │
│               └──────────┘                    │
│    Enemy Act Level ┌──────────┐               │
│                    │          │               │
│                    └──────────┘               │
│    Crit Short                                 │
│    ☐ Pers                                     │
│    ☐ Ammo                                     │
│    ☐ Fuel                                     │
│    ☐ Equip                                    │
│    Cdr Intent ┌──────────────────┐            │
│               │                  │            │
│               └──────────────────┘            │
│    ─────────────────────────────────────────  │
│    Originator ┌──────────────┐                │
│               │              │                │
│               └──────────────┘                │
│    ─────────────────────────────────────────  │
│  ┌──────────┐          ┌──────────┐           │
│  │  Route   │          │  Cancel  │           │
│  └──────────┘          └──────────┘           │
└──────────────────────────────────────────────┘
```

1. Click on the **As of** box to list the following options: Now, -5, -10, -15, -20, -30, and -45. Select the correct time by clicking on it; it automatically appears in the box.

2. Enter location in the FLOT boxes by highlighting the corresponding boxes and typing in the UTM coordinates and pressing **<return>**. Or simply click on the Map Display at the desired locations.

3. Clicking on the **Enemy Act** or **Enemy Act Level** boxes brings up a list of options for those categories. Select the appropriate option by clicking on it.

4. Indicate Critical Shortages by clicking on the appropriate boxes. When selected, the boxes are highlighted.

5. Clicking on the **Cdr Intent** box provides a list of possible actions: No Change, Attack, Recon, Defend, Delay, and Withdraw. Select an option by clicking on it.

6. The **Originator** box defaults to the call sign of the workstation you're composing on. To edit the originator, highlight the **Originator** box, type in any valid call sign, and press **<return>**.

7. Click on the **Route** button to bring up the Route Message dialog box; select the desired destinations, click **Send**, and then **Cancel** to return to the Message Composer.

8. Click **Cancel** to return to the InFolder without sending a message.

Managing Folders and the Workbook

All folders and workbook sections are accessed from the InFolder. Once you open a folder or the workbook, you can view messages, route them to other workstations or place them in other folders, and delete them.

Folders—Journal, Map Display, and Situation Display

To open a folder, simply click on its name in the Folder Menu. You can now view the messages in the folder, route them to other workstations or place them in other folders, and delete them.

```
┌─────────────────────────────────────────────────────────────┐
│                      Role ID/InFolder                         │
├─────────────────────────────────────────────────────────────┤
│  ▓Folder▓ Filter   Compose                                    │
│ ┌──────────┐───────────────────────────────────────────────  │
│ │ Journal  │                                                  │
│ │ MapDisp  │es: │ Previous │   │ Selected │   │   Next   │    │
│ │ SitDisp  │                                                  │
│ │ Workbook...│essages: │  Route  │   │ Delete │             │
│ ├──────────┤                                                  │
│ │ Remote...│                                               ▪s │
│ └──────────┘                                                ▪ │
│                                                             ▪ │
│                                                             ▪ │
│                                                             ▪ │
│                                                             ▪ │
│                         List Box                            ▪ │
│                                                             ▪ │
│                                                             ▪ │
│                                                             ▪ │
│                                                            ▪t │
└─────────────────────────────────────────────────────────────┘
```
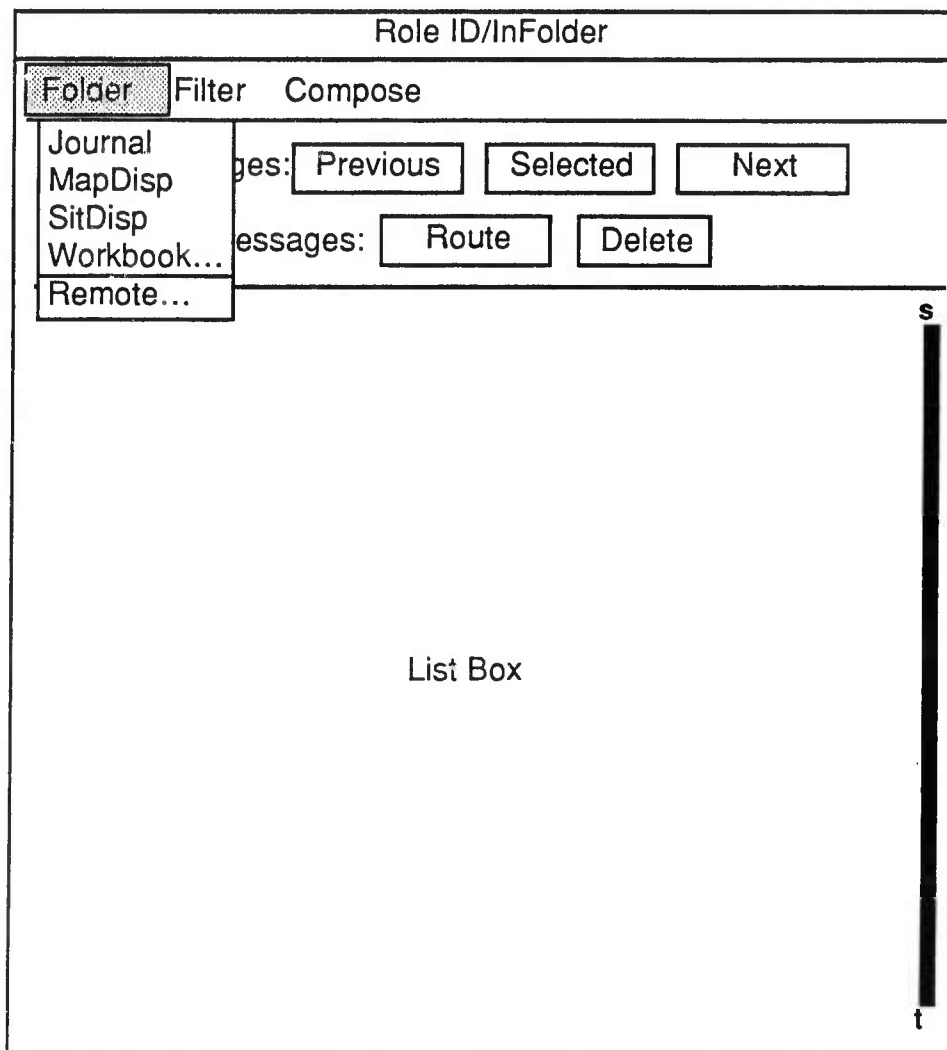
The Journal Folder

The Journal Folder keeps track of actions taken on messages, such as where it was sent or whether it was posted to the Map or Situation Display. The following table lists possible actions taken and the abbreviations used in the message identification line:

Map Display	M1
Situation Display	M2
Staff	S
Journal	J
Commander	C
Air Liaison Officer	ALO
Artillery Line Officer	Arty
Higher Headquarters	H
Subordinate Units	L
Workbook	W

As you route messages, these actions are automatically entered in the message viewers stored in the Journal Folder. You can also enter arbitrary text (up to 80 characters) to be displayed in the comments box. An example of a message viewer in the Journal Folder is shown on the next page.

Map Display and Situation Display Folders

When messages are routed to the Map Display or Situation Display folders, message icons also appear on the Map Display and Situation Display, respectively.

```
┌──────────────────────────────────────┐
│            Message Viewer            │
├──────────────────────────────────────┤
│ Date Time Role Type                  │
│ ─────────────────────────────────    │
│    What      Damaged    Destroyed    │
│  ┌────────┐  ┌─────┐    ┌─────┐       │
│  └────────┘  └─────┘    └─────┘       │
│  ┌────────┐  ┌─────┐    ┌─────┐       │
│  └────────┘  └─────┘    └─────┘       │
│                                      │
│  Where      ┌──────────┐             │
│             └──────────┘             │
│  Heading    ┌──────────┐             │
│             └──────────┘             │
│  Enemy Action  ┌──────────┐          │
│                └──────────┘          │
│  Own Action   ┌──────────┐           │
│               └──────────┘           │
│  As of   ┌──────┐                     │
│          │ Now  │                     │
│          └──────┘                     │
│ ─────────────────────────────────    │
│  Action Taken:                       │
│  ┌────────────────────────────┐      │
│  │ M1/M2                      │      │
│  └────────────────────────────┘      │
│  ┌────────────────────────────┐      │
│  │                            │      │
│  │        Comments Box        │      │
│  │                            │      │
│  └────────────────────────────┘      │
│ ─────────────────────────────────    │
│  Originator  ┌──────────┐            │
│              └──────────┘            │
│ ─────────────────────────────────    │
│  ┌──────────┐        ┌──────────┐    │
│  │  Route   │        │  Cancel  │    │
│  └──────────┘        └──────────┘    │
└──────────────────────────────────────┘
```

The Workbook

To open the workbook, click on **Workbook...** in the Folder Menu. The following dialog box appears:

```
┌─────────────────────────────────────────┐
│               Workbook                   │
├─────────────────────────────────────────┤
│  Workbook Index                          │
│   ┌───────────────────────────────────┐  │
│   │                                   │  │
│   │    .....                          │  │
│   │                                   │  │
│   │    .....                          │  │
│   │                                   │  │
│   │    .....                          │  │
│   │                                   │  │
│   │    .....                          │  │
│   │                                   │  │
│   └───────────────────────────────────┘  │
│  Create Workbook Section                 │
│                                          │
│   ┌───────────────────────────────────┐  │
│   │                                   │  │
│   └───────────────────────────────────┘  │
│  ┌───────┐┌────────┐┌────────┐┌───────┐  │
│  │ Open  ││ Create ││ Delete ││ Close │  │
│  └───────┘└────────┘└────────┘└───────┘  │
└─────────────────────────────────────────┘
```
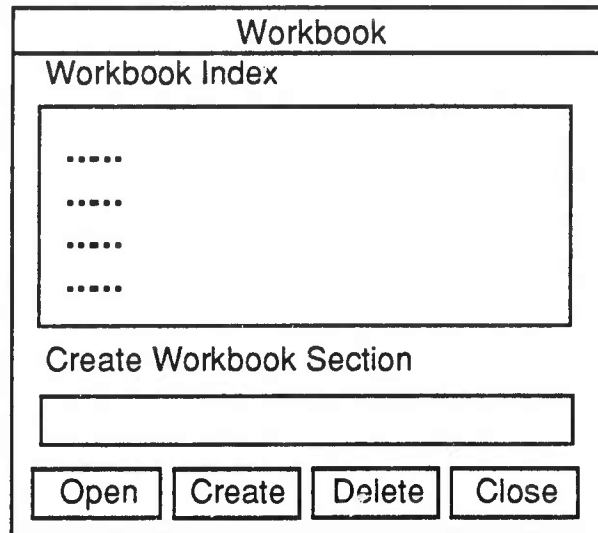
You can now open an existing section, create a new section, and delete user-created sections. Instructions for these operations follow.

To open a workbook section...

1. Select the name of the section you wish to open by clicking on its name in the Index box.

2. Click on the **Open** button. The section opens and you can perform operations on the messages in it, such as viewing and routing.

If the section contains no messages, the following error message will pop up on the screen:

```
┌─────────────────────────────────────────────────────┐
│  ⊘    Section Name contains no messages; NOT opened. │
│ ───────────────────────────────────────────────────  │
│ ┌────┐                                               │
│ │ OK │                                               │
│ └────┘                                               │
└─────────────────────────────────────────────────────┘
```
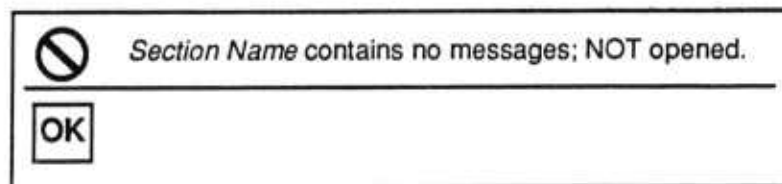
To create a new workbook section...

1. Position the cursor in the box labeled "Create Workbook Section."

2. Type the name of the section you wish to create and press **<return>** or click on the **Create** button. The name of the new section will be added to the list of available sections.

To delete a workbook section...

1. Select the name of the section you wish to delete by clicking on its name in the Index box.

   NOTE: The system <u>does not</u> ask for confirmation before deleting the workbook section.

2. Click on the **Delete** button. The section is deleted.

If the section is a standard folder, the following error message will appear on the screen:

> Ⓢ   *Section Name is a standard folder, NOT deleted.*
>
> [OK]
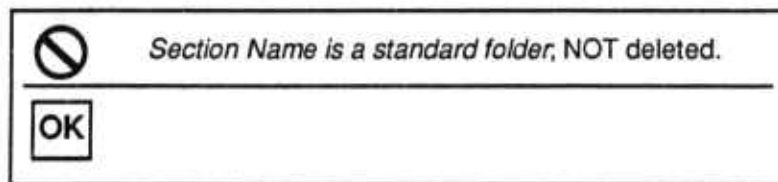
To close the workbook and return to the InFolder...

Click on the **Close** button.

Remote Workstations

To look at folders on other workstations, select **Remote** from the Folder Menu. A list of standard folders and available workbook sections for the selected workstation will appear in a dialog box, shown below.

```
                    ┌──────────────────────────┐
                    │      Remote Folders      │
                    ├──────────────────────────┤
                    │    ☐  InFolder           │
                    │    ☐  Journal            │
                    │    ☐  Map Display        │
                    │    ☐  Sit Display        │
                    │                          │
                    │    Workbook Index        │
                    │   ┌──────────────────┐   │
                    │   │                  │   │
                    │   │  List of workbook│   │
                    │   │     sections     │   │
                    │   │                  │   │
                    │   │                  │   │
                    │   └──────────────────┘   │
   Role/ID            │   ┌──────────────────┐   │
            ─────────────▶│     S3 Folders   │   │
                    │   └──────────────────┘   │
                    │  ┌──────┐   ┌────────┐   │
                    │  │ Open │   │ Cancel │   │
                    │  └──────┘   └────────┘   │
                    └──────────────────────────┘
```
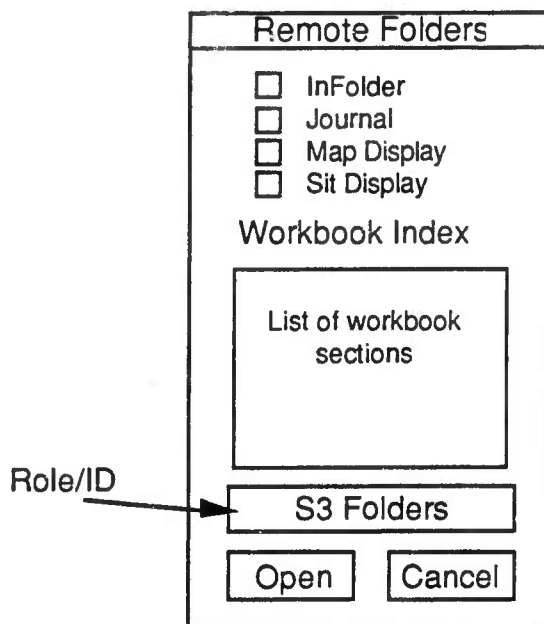
1. To select a different workstation than the one shown, simply click on the Role/ID box.

2. Then select a folder or workbook section by clicking on its box or name.

3. Click on the **Open** button to open the folder or section.

4. Click on the **Cancel** button to return to the InFolder.

5. The Format Module

The Format Module resides in the Format Manager window on the Communications and Planning Display (the right-hand monitor). It provides a set of standard Army formats that can be edited as desired by users to create reports. Reports can be saved on the workstation's disk and copied and edited again.

This section describes how to use the Format Manager window. Operations include creating, editing, and copying, and deleting reports.

THE FORMAT MANAGER WINDOW

Figure 5-1 shows the Format Manager window. Available S2 and S3 formats are listed at the top of the window. When you select a format type by clicking in its corresponding box, all reports of that type available on your workstation are shown in the List Box. You can then either create a new report, or select an existing report to open and edit, delete, or copy. However, *you can only create, delete, or copy reports for types of formats belonging to your role,* i.e., if you are the S2 officer, you cannot create, delete, or copy S3 reports. You can, however, open them for editing. Instructions for these operations are given in the remainder of this section.
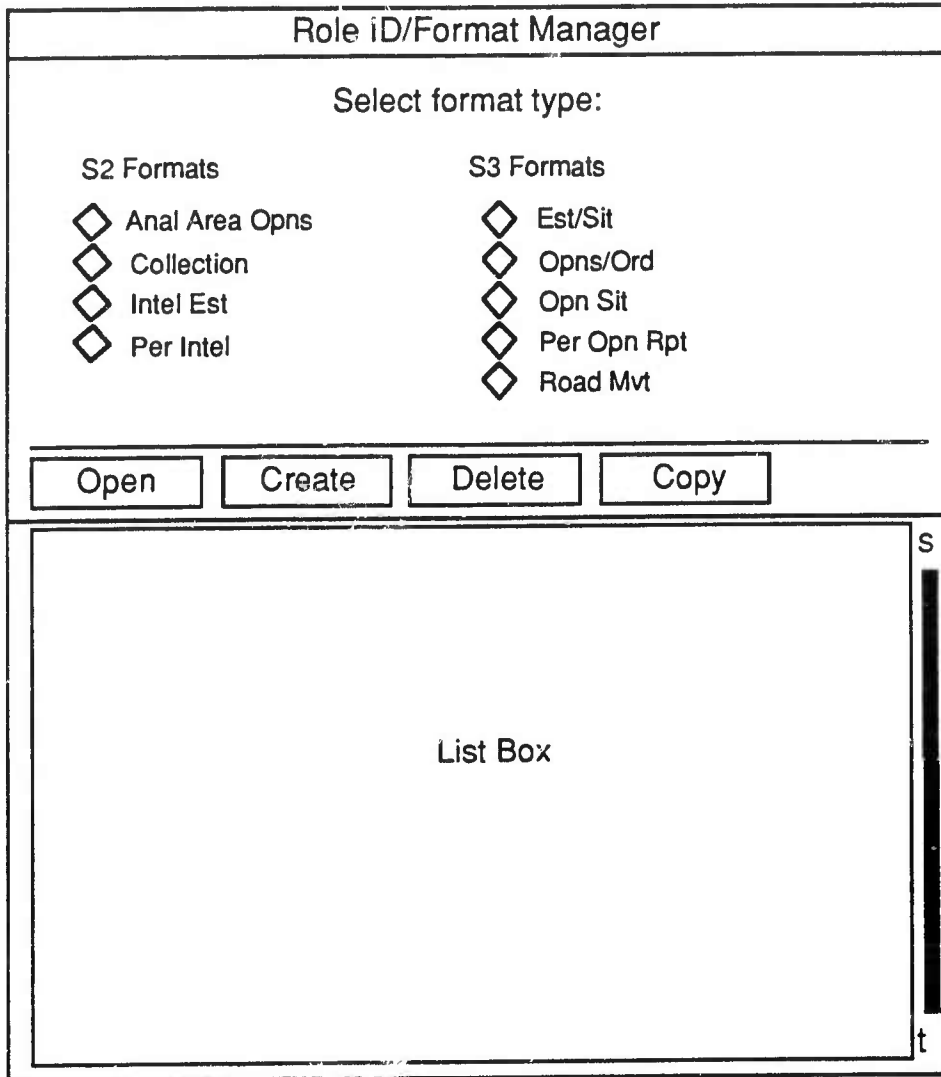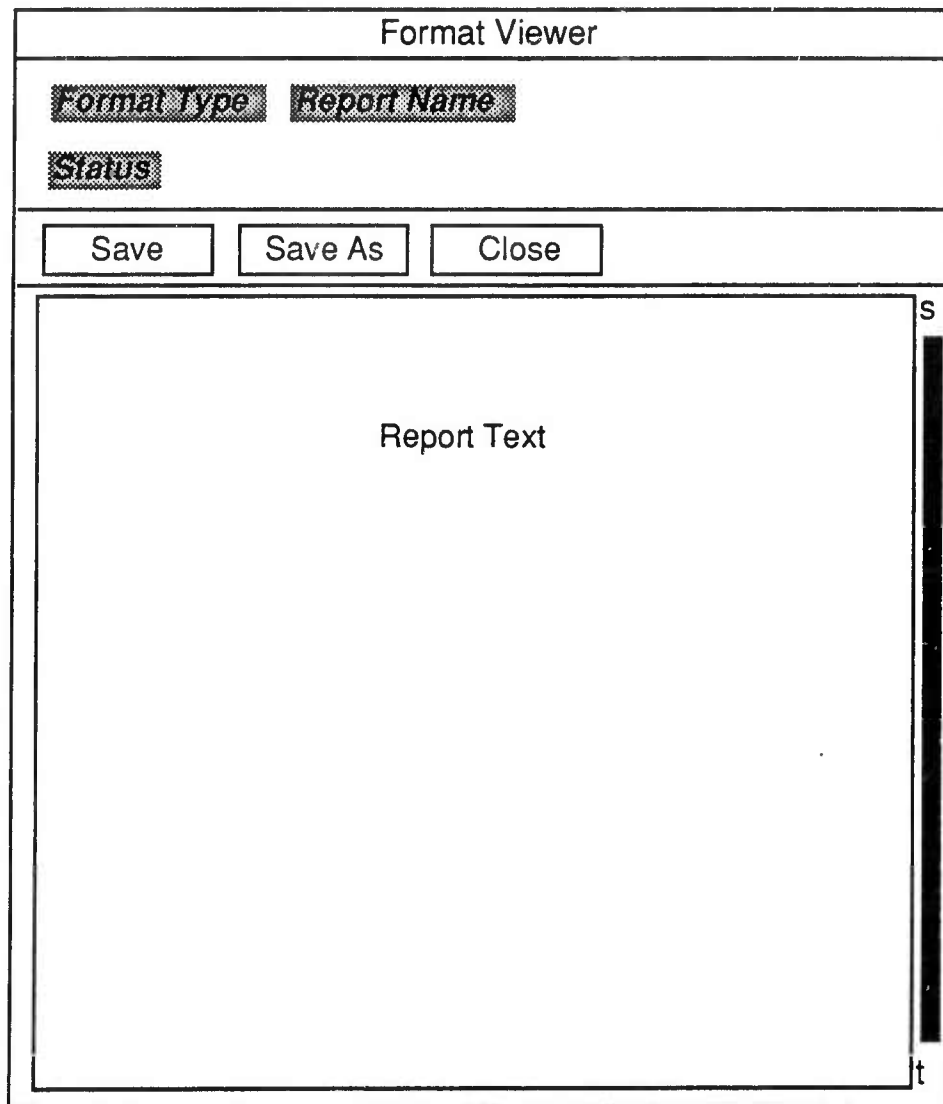
Figure 5-1. *The Format Manager Window*

CREATING REPORTS

To create a report,

1. Select the type of report you wish to create by clicking on the box next to the appropriate format type. Click on the **Create** box, and a dialog box appears on the screen, asking you to name the report.

2. Click in the box and type the new report's name, then press **<return>** or click on the **Create** box. The Format Viewer window will appear on the screen.

```
+--------------------------------------------------------------+
|                      Format Viewer                           |
+--------------------------------------------------------------+
|  ▓Format Type▓   ▓Report Name▓                               |
|                                                              |
|  ▓Status▓                                                    |
+--------------------------------------------------------------+
|  [   Save   ]   [  Save As  ]   [   Close   ]                |
+--------------------------------------------------------------+
|  +-------------------------------------------------------+ s |
|  |                                                       |█  |
|  |                                                       |█  |
|  |                    Report Text                        |█  |
|  |                                                       |█  |
|  |                                                       |█  |
|  |                                                       |█  |
|  |                                                       |█  |
|  |                                                       |█  |
|  |                                                       |█  |
|  |                                                       |█  |
|  |                                                       |█  |
|  |                                                       |█  |
|  +-------------------------------------------------------+ t |
+--------------------------------------------------------------+
```

At the top of this window you'll see some identifying information about the type and name of the report and its status. When you've just created a report, its status is "New." Other status descriptions include "Unchanged," "Changed," and "Saved." The text of the report appears in the lower part of the window.

---

3. To change any of the text in the report, simply click in the window and type your changes. As soon as you begin typing, the report's status becomes "Changed."

SAVING REPORTS

You can save a report at any time by clicking on the **Save** box. The report will be stored on your workstation's disk, and you can retrieve it at any time. (See *Editing Reports*, below.) When you save a report, its status becomes "Saved."

You can save a report under a different name by selecting the **Save As** option. Use **Save As** when you want to make a backup copy of a report, or when you want to keep the original report and a version with changes.

When you choose **Save As**, the system will prompt you for a new name. Enter it and press <return> or click the **Save As** button. The report will be saved under its new name.

EDITING REPORTS

To edit an existing report,

1. Click on its format type at the top of the Format Manager window. A list of all reports of that type will appear in the List Box.

2. Select the report you wish to edit by clicking on its name, then click the **Open** button. The Format Viewer window will appear on the screen. The report's status will be "Unchanged" when you first open the report.

3. Change the text as desired.

4. Close without saving, or use the **Save** or **Save As** options to save the report.

COPYING REPORTS

You may want to copy a report so you can modify it. To do so,

1. Click on the appropriate format type at the top of the screen. A list of all reports of that type will appear in the list box.

2. Select the report you wish to copy by clicking on its name.

3. Click the **Copy** box. A dialog box requesting the new report name appears on the screen.

4. Type in the new report name, and press **<return>** or click the **Copy** button. The name of the new report appears in the report box.

DELETING REPORTS

To delete a report,

1. Click on the desired format type at the top of the screen. A list of all reports of that type will appear in the list box.

2. Select the report you wish to delete by clicking on its name.

3. Click the **Delete** box. The system will request confirmation before deleting the report.

LEAVING THE FORMAT VIEWER

To go back to the Format Manager window, select **Close.** If you haven't saved the most recent changes you made, the system will ask you to confirm that you really want to close the report without saving the changes. If you indicate that you want to save the changes, the system will do so and return you to the Format Manager window.

5-6

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6.   Echelon Module

Not implemented in Release 1.5.

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