Functional Specifications for Selected Staff Workstations Within the Close Combat Test Bed's Automated Battalion Tactical Operations Center

September 1992

Fort Knox Field Unit
Training Systems Research Division

U.S. Army Research Institute for the Behavioral and Social Sciences

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Functional Specifications for Selected Staff Workstations Within the Close Combat Test Bed's Automated Battalion Tactical Operations Center

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This report contains functional specifications for simulating an Automated Battalion Tactical Operations Center (BN TOC) within the Close Combat Test Bed (CCTB). These specifications are an important step in simulating new systems and technologies. The simulation allows researchers at the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) to address training and soldier performance issues related to command, control, and communications (C3) during the early stages of systems development. The Automated BN TOC consists of S2 (Intelligence), S3 (Operations), and BN Executive Officer workstations to support mission planning and execution. Descriptions of these staff support functions provide background information to those interested in the functional and operational details of this BN TOC. Information contained in this report will assist in determining requirements for C3 systems and training development programs for military personnel.

Subject Terms:
- Close Combat Test Bed (CCTB)
- Combat Vehicle Command and Tactical Operations Center (TOC)
- Control System (CVCC)

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Functional Specifications for Selected Staff Workstations Within the Close Combat Test Bed's Automated Battalion Tactical Operations Center

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The U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) investigates issues pertaining to soldier performance in simulated future combat environments. Simulation of new systems and technologies provides ARI researchers with a method for addressing training and soldier performance issues related to command, control, and communications (C3) during the earliest stages of systems development.

This report was prepared under the science and technology task entitled "Training Requirements for the Future Integrated Battlefield." ARI's involvement in this research supports two Memoranda of Understanding. One agreement, between ARI and the United States Army Armor Center and School that focuses on research in future battlefield conditions, was signed on 12 April 1989. The second, between ARI and the Tank Automotive Command (TACOM), focuses on the Combat Vehicle Command and Control System (CVCC) and was signed on 22 March 1989.

This report documents the current Automated Battalion Tactical Operations Center (BN TOC) within the Close Combat Test Bed (CCTB), formerly referred to as the Simulation Networking-Developmental Facility, or SIMNET-D. The physical and functional descriptions of the selected staff workstations include how the workstations fit into and interact with other components of the Combat Vehicle Command and Control program. This effort is especially pertinent to researchers interested in automated command, control, and communications (C3) because it details a current, interactive, working system that has been tested under realistic conditions.

The results of this effort have been briefed to the Director and Chief of the Analysis and Simulation Division, Combat Developments, U.S. Army Armor School.

EDGAR M. JOHNSON
Technical Director
FUNCTIONAL SPECIFICATIONS FOR SELECTED STAFF WORKSTATIONS WITHIN
THE CLOSE COMBAT TEST BED'S AUTOMATED BATTALION TACTICAL
OPERATIONS CENTER

EXECUTIVE SUMMARY

Requirement:

This report provides functional specifications documentation
for the simulation of Automated Battalion Tactical Operations
Center (BN TOC) workstations within the Close Combat Test Bed
(CCTB).

Procedure:

Multiple approaches were taken to complete this report. For
documentation of the BN TOC, a hands-on approach was used.
Researchers consulted with the CCTB staff and engineers to
determine the functionality of the system. These approaches were
taken so that the maximum information available on the Automated
BN TOC could be included in the report.

Findings:

Staff workstations within the BN TOC are complex and
flexible, as can be seen in the documentation of the system.
Flexibility was built into the system to allow a TOC staff to
easily accomplish their duties in a manner that best suits their
needs. The power of the system is evident in the functionality
built into the system to accomplish tasks previously done
manually with paper maps, grease pencils, handwritten
 correspondence, and voice radio traffic.

Utilization of Findings:

This report can most effectively be employed by developers
and users of systems like the BN TOC. Users can determine how
the current system within the CCTB operates and either build a
system like the one documented, improve on the existing system,
or develop new features for the current system. The report will
also help with the training of military personnel who will either
test or use the system themselves.
FUNCTIONAL SPECIFICATIONS FOR SELECTED STAFF WORKSTATIONS WITHIN THE CLOSE COMBAT TEST BED’S AUTOMATED BATTALION TACTICAL OPERATIONS CENTER

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FUNCTIONAL SPECIFICATIONS FOR SELECTED STAFF WORKSTATIONS
WITHIN THE CLOSE COMBAT TEST BED'S AUTOMATED BATTALION
TACTICAL OPERATIONS CENTER

Introduction

The purpose of this document is to provide functional and physical documentation for the Automated Battalion (BN) Tactical Operations Center (TOC) workstations within the Combat Vehicle Command and Control (CVCC) environment. This document is intended to provide the reader with a detailed understanding of the functional or “how the system” works description of the BN TOC. This document addresses only the prototype systems located in the Close Combat Test Bed (CCTB) and does not provide discussions on alternative designs or current "real world" systems that exist.

A tactical operations center or TOC is used to provide consolidated Command and Control (C2) at unit levels of battalion and above. FM 101-5 (1984) “Staff Organizations and Operations” provides details on the duties of a staff within a TOC.

The Automated BN TOC is a futuristic version of what is currently done in a manual/nonautomated fashion to accomplish consolidated C2. The Automated BN TOC program is an extension of the CVCC program going on at the Close Combat Test Bed in Fort Knox, Kentucky. Both the Automated BN TOC and CVCC programs are designed to help in the concept formulation stages of future weapon systems and organizations for the Army.

The automated TOC fits in with recent C2 automation developed within CCTB tank simulators. These simulators have the capability to send and receive digital messages and map overlays to and from other deployed vehicles. With this increased capability, an appropriate TOC was needed and subsequently developed to handle these new prototype communication methods. This document details the functionality of how this equipment works and fits into the CVCC environment.

This documentation will be limited to the systems within the BN TOC that make up the TOC workstations and the interaction with other CVCC systems either within vehicle simulators, other TOC workstations, or higher level units. The prototype BN TOC system presented is associated with version 1.6 of the BN TOC software. Any later release of the above software will not be reflected in this document unless it is appended at a later date.

Overview of the Document

This document will begin with general requirements for the TOC workstations that currently make up the Automated BN TOC. Then, the general functioning of the TOC workstations is discussed. Finally, a detailed description of the functionality of the TOC workstations is provided.
General BN TOC Requirements

The Automated BN TOC is designed around the concept of the OC workstation. The TOC workstation is used to replace the current organization of a "real world" TOC, which has each section working out of its own vehicle with its own maps and radios. Within the automated TOC, each relevant section/activity will utilize a computer workstation to perform both its planning and mission execution duties. The Automated BN TOC workstations have initially been developed to incorporate the S3 (Operations), S2 Intelligence), and overall supervisory (BN Executive Officer--O) responsibilities within the BN TOC. A special configuration of any of the above workstations is the Coordinator workstation. Coordinator workstation is used to control any test or use of the BN TOC workstations and simulators hooked into the system at that time.

TOC Workstations

The equipment currently in the TOC includes two identical workstations and a large screen situation display. The workstations consist of a SUN SPARCstation 1 computer with a keyboard, two each 19" color monitors, and a mouse. The workstations are set up with the monitors in a side-by-side configuration. The left color monitor is always the Map Display, which shows a military map, and the right color monitor is the Communication and Planning Display, which allows communication and written planning to occur. This configuration is shown in Figure 1.

![Figure 1. BN TOC Workstation Configuration](image)
The workstations allow the planning and mission execution duties normally conducted on acetate, paper maps, and radio to be performed on the workstation in a digital computer medium. The workstations receive all Position Navigation (POSNAV) data on vehicles outfitted with such equipment. This allows the TOC operators to track the location of all vehicles within their own and adjacent units.

The workstations are also connected to the Single-Channel Ground and Airborne Radio System (SINCGARS) allowing both voice and digital message communication with deployed vehicles and the higher level headquarters. All digital and voice transmissions are sent out through this radio system.

A local area network provides the communication links necessary for information to be passed among workstations and the Situation Display within the automated BN TOC. The workstations are capable of sending and receiving the same digital reports that are available within the tank simulators.

The Situation Display consists of a Sun SPARCstation 1 computer, keyboard, a mouse, and a single large screen TV. Currently, the Situation Display has a limited subset of the functions that will be discussed with the other workstations (i.e. S2 and S3 workstations). The only functions currently available on the Situation Display allow overlays, message/report icons, and Position Navigation (POSNAV) icons to be stored and displayed on its screen. Overlays, messages, and formats cannot be created as can be done on the other workstations.

General Workstation Functionality

Workstation Modules

The workstation software functions are broken down into four (4) basic modules that interact. The four modules are: Message Module, Format Module, Map Module, and Echelon Module. For a detailed discussion of the different modules, see "SIMNET CVCC Battalion TOC Workstation User Manual Release 1.5" (Bolt, Beranek, and Newman, Inc. [BBN], 1991).

Screen Layout

The TOC workstation displays are broken down into three (3) main types of screens based on the modules above. The first consists of screens from the Message module. These screens are for sending, receiving, and filing messages. These functions are provided in the Infolder or other folders that originated from the Infolder. The second type of screen comes from the Format module. These screens are available when planning formats are being developed to plan for a future operation. Screens from the Message and Format module appear on the Communications and Planning Display. The last type of screen comes from the Map
module. These screens are displayed on the Map Display. These screens show relevant POSNAV data, overlays, message icons, and digital map terrain of the area of operation.

**Interface Structure**

The operator interface of the BN TOC is based on a hierarchy of menu types and selectors. The types of menus and selectors available are: Menu Bars, Pulldown Windows, Cascading Windows, Radio Buttons, Highlighted Fields, and Scroll Bars. A detailed description of these display features is available in the "SIMNET CVCC Battalion TOC Workstation User Manual Release 1.5" (BBN, 1991). The operator uses these menus and selectors to execute functions of the TOC workstations.

There are two input devices available for the workstation. These include the workstation's keyboard and mouse. No other input devices are available. There are three conventions used in this document that refer to the methods for inputting data. They are: Selecting, Designating, and Typing. Selecting is used to pick desired fields, functions, words, symbols, or numbers on the screen. Designating is used to pick locations for input into a report. Typing is used to type text into messages or to create formats or overlays.

The menu structure of the BN TOC workstations is very flexible yet logical in its approach. The user can perform almost any function within a module, and many from different modules in the middle of performing an operation. However, there is a logical system of error messages and functionality that requires the user to perform certain functions before other functions can be attempted. This structure is detailed in the functional description of the workstations.

**Supporting Subsystems**

The following paragraph will detail the subsystems that are required to operate and support the automated TOC workstations. The method of transport and vehicular support for the Automated BN TOC would normally play an integral part in the specification for the BN TOC. However, this is not discussed within this documentation as it is not required within CCTB for the system to function. The BN TOC workstations do require subsystem support in order to portray the information exchange required of the system. The BN TOC workstations provide the interface to integrate inputs from the SINCGARS and POSNAV systems.

**SINCGARS**

Simulated SINCGARS radios are currently used to send both digital and voice transmissions. The radio system is fully integrated with the BN TOC workstations and the TOC local area
network. All reports, messages, and overlays can be sent out through the radio system.

**POSNAV**

The POSNAV system is a key component to the BN TOC. The POSNAV system is embedded within the workstation's interface. All POSNAV data is displayed on the Map Display at each of the workstations. The POSNAV system provides up-to-date position locations for all deployed vehicular elements and a terrain data base for the workstations. Manipulation of the terrain data base within the BN TOC workstations allow users to rapidly perform operations normally conducted on standard military topographic maps.

**Data Capture and Instrumentation**

A primary purpose for developing a simulation-based prototype of an automated command and control system is to assess soldier performance as a function of this developmental system. The ability to automatically capture data for C² activities allows for instant recording of soldier performance and utilization patterns, comparing automated and non-automated performance, predicting training requirements, and documenting operational effectiveness as a function of the system and the soldier's use of the system.

A primary requirement was that the Bn TOC components be fully instrumented. Instrumentation includes automatic recording of user inputs and activities associated with system utilization. More specifically, this includes user activation of system functions such as the time that an overlay, report, or message is sent out. Instrumentation supports the development of summary indices of user inputs by activity type, function, and sub-function. Through instrumentation, C² performance within the simulation-based C² system is retained in a manner that allows researchers and developers to relate system-based activities with simulation-based activities. This allows events to be reconstructed to help determine the "how and why" of users' actions and relate different performances. Investigators of the new system can then use the user performances to determine the utility of the new system or make improvements to the system.

**Map Characteristics**

The following section details some of the general functional characteristics of the Map Display. It includes manipulating maps and graphics.

**Discrimination**

The system presents standard map information and control measures in such a manner that highlights and clearly discriminates terrain, graphical control measures, friendly units,
and enemy units. The map colors are displayed in the standard five map colors: Blue - Rivers, Green - Vegetation, Black - Man-made objects, Red - Roads, and Brown - Relief. The map display is capable of displaying land contour, rivers, roads, vegetation, and map grid lines. The display of the map area is consistent with military paper maps according to FM 21-26 (1988), "Map Reading".

Scaling

On the Map Display, standard military map scales of 1:25,000, 1:50,000, and 1:250,000 are available. Also, a non-standard scale of 1:125,000 is available so there is not such a large jump in scale between the 1:50,000 and 1:250,000 maps. The 1:50,000 scale shows the desired detail but not the desired area while the 1:250,000 scale shows the desired area but not in enough detail. The 1:125,000 scale bridges the gap between these two scales. Map, unit, and graphic control measure symbology are scalable with respect to the map scale selected for the system. All posted graphical control measures and unit symbols (both friendly and enemy) automatically rescale in direct relation to changes in map scales. Unit symbols and POSNAV displayed icons automatically aggregate to different unit levels when the scale of the map is changed.

Map Movement

The map on the Map Display can be positioned either through the use of scroll bars displayed on the right and bottom borders of the map or by dragging the map to the desired location. This allows the workstation user to position the map in the desired location for the current activity being conducted. The map can also be moved to a default location when the grid location for the BN TOC is entered into the system. With this option, the map is repositioned on the Map Display so that the BN TOC location is moved to the center of the Map Display.

Control Measures

Control Measures are defined as "directives given graphically or orally by a commander to subordinate commands in order to assign responsibilities, coordinate fires and maneuver, and to control combat operations." (FM 101-5-1, 1985, p. 1-19) A very important feature of the BN TOC workstation is it's ability to depict and update graphical control measures. This is some of the most critical information available for users of the workstations, because the TOC is responsible for providing these controls to deployed units. The ability to easily create and send out control measures avoids the time consuming and difficult process of having subordinate units come to the TOC to receive a hard copy of the operational graphics. The TOC operators can display the graphical control measures in either black or red. Some examples of different control measures are: boundaries, objectives, coordination points, and contact points.
Icons

Icons are graphic representations of information from which one can view and discern information. Icons are posted to the Map Display in two colors: red and blue. Red is for enemy unit information and blue is for friendly units. Figure 2 shows the distinct set of icons used to display both the friendly and enemy information.

The system also gives the workstation user an indication of where icons or graphics are located; however, they cannot be displayed on the map due to viewing limitations on the screen. These indications appear as red and blue arrowheads for pointing to the graphic or icon. Red is for enemy related information and blue is for friendly.

Posted icons also retain a link to their source report or unit. The report or unit is the method by which the icon appears on the screen. If the icon is POSNAV generated, the displayed icon retains a link to this information. If the icon is report generated, then the icon retains a link to the report associated with it. Through this link, the report or unit associated with the icon can be recalled from the icon and displayed on the Map Display.

Figure 2. Icons
Reports

Reports available on the Communication and Planning Display are standardized reports based on current Army report formats (FM 101-5, 1984, Appendix B). The reports on the BN TOC workstations include the same information as on the vehicle-based CVCC reports. However, the format and manner in which report data is entered is different. The BN TOC workstation allows the complete report to be viewed and uses pulldown windows for report data entry.

Formats

The planning formats available on the Communication and Planning Display are also standardized formats based on current Army formats (FM 101-5, 1984, Appendix G). These formats consist of specific reports for both the S2 and S3. S2 formats are as follows: AnalAreaOpns (Analysis of Area of Operations), Collection (Collection Plan), IntelEst (Intelligence Estimate), and PerInt (Periodic Intelligence Report). S3 formats are as follows: EST/Sit (Estimate of the Situation), OpnsOrd (Operations Order), OpnSit (Operational Situation Report), PerOpnRpt (Periodic Operation Report), and RoadMvt (Road Movement Order). These formats can be found in FM 101-5 "Staff Organization and Operations".

The above sections have detailed the general functionality of the BN TOC workstations. The next section will go into the detailed functionality of how the workstations work and the specific operations that can be performed.

Detailed Description of BN TOC Workstation Functionality

Conventions

The following are the conventions used in the detailed description of the BN TOC workstation functionality. These conventions refer to the written description of the functionality used to describe the system.

In the written description, the following conventions are used:

- Names of options, functions, windows, buttons or fields have the first letter of each word in the name capitalized if they are not in a list (e.g. Where field, Route window, Cancel).

- Screen names only have the first letter of each word in the name capitalized (e.g., Build and Edit Overlays Screen, Format Module, etc.).

- Within the written description, a series of flow charts are referenced. The references are to figures found in Appendix A.
Functional Description of the BN TOC Workstation

The following sections relate the user interface screens to the functional description of the BN TOC Workstation. The descriptions are laid out in the following manner: First, there is a written description of the screen or functions. This is followed by figures of the screens as they appear when paging through them. Finally, a series of flow charts show the functionality of the screen or function.

Main System Level

Within this documentation, the Main System Level is used to show the flexibility of the system. Figure A-1 shows that options on either of the two screens or any of the software modules are available.

Figure 3 shows the layout of the map module on the Map Display and Figure 4 shows the Message and Format Modules on the Communication and Planning Display. The workstation user can make a selection within the same software module, on a different software module on the same screen, or on a different software module on the alternate screen at this level. Whenever the cursor is moved to a different module, the color of the window changes to indicate which window is being controlled by the cursor. Figure A-1 shows the flow of operations at the system level. The color changes stated in Figure A-1 are consistent for any operations that are performed within a module.

![Map Display](image)

Figure 3. Map Display
Infolder/Folder

The purpose of the Infolder and subsets of the Infolder, is to handle all message actions whether it be composing, sending, filing, or reading reports. Folders also provide the TOC operator a way of organizing reports for different operations. The folder operations are analogous to using an Electronic Mail (E-mail) system. Just like an E-mail system, messages can be filled out, filed in folders (directories), sent out to single or multiple stations (addresses), and also be read when received.

There are four different levels of functions that can occur from either the Infolder or other message folders. The four levels are: Infolder Main Menu, View Messages Menu, Dispose of Messages Menu, and Close. No folder, including the Infolder has all four levels. The Infolder (Figure 4) can perform all functions on all menus except Close. The Infolder is the only folder that cannot be closed or deleted and is the only folder that can access the Infolder Main Menu. All other folders are accessed through the Infolder Main Menu. If Close is available on a folder, then it is located below the Dispose of Messages window. When that option is selected, the folder disappears off of the Communication and Planning Display. Figure A-2 shows the flow of operations on folders at the different menu levels.

Figure 4. Communication and Planning Display
**Infolder Main Menu**

The purpose of the Infolder Main Menu is to provide access to other folders (either standard or created), set message filters, and compose messages.

The Infolder Main Menu is located at the top of the Infolder, as shown in Figure 4. There are three options that are available from this menu: Folder, Filter, and Compose. Selections are made from this menu by moving the mouse to the desired option and pressing the left mouse button. This causes a pulldown window to appear under the selected option.

The Folder option allows access to other folders on that workstation. The Filter option is used to set the receive filter on the workstation allowing only certain messages to be received. The Compose option is used to compose standard military reports. These options and pulldown windows will be discussed in greater detail in the following sections. Figure A-3 shows the flow of operations from the Infolder Main Menu.

**Message Folder**

The purpose of the Message folder is to provide the workstation user with a capability to keep an orderly filing system of all reports that are received by the workstation. The user can either use standard folders or make a custom filing system to perform this organization.

Message folders are accessed through the Folder option of the Infolder Main Menu. Figure 5 shows the pulldown window associated with the Folder option when Folder is selected. The options available are: Journal, MapDisp, SitDisp, Workbook, and Remote.

![Folder Window](image)

*Figure 5. Folder Window*
Journal, MapDisp, and SitDisp are three standard folders within the Infolder that cannot be deleted. Selecting one of these options brings up the associated folder. These three folders have the same functionality as others with the exception of the Journal. Messages that are posted to the Journal cannot be deleted.

When Workbook is selected, the Workbook window is displayed (Figure 6). The window is used to create, delete, and view workbook sections. Within this window, workbook sections are displayed on a scrollable list. This list includes a set of standard workbook sections that cannot be deleted. These sections are: Air, Armor, Artillery, Infantry, Miscellaneous, and NBC. Any created workbook sections are also displayed on this list. Created workbook sections perform as folders yet they can be deleted.

When the operator selects Remote, the Remote window is displayed, as shown in Figure 7. Remote allows the workstation operator to access the folders and workbook sections of other workstations that are located on the BN TOC local area network.

Figures A-4 through A-11 show the flow of folder operations from the Infolder Main Menu.

Filter Message

The purpose of the Filter function is to allow the workstation operator to receive only those reports that he/she needs to accomplish the mission. Setting the message filter also
ensures that the message list is usable and not cumbersome in the execution of the TOC's mission. For example, the S2 may set the receive filter so that Situation Reports (SitReps) are not received at the S2 workstation. While the SitRep is an important report, it is important to the S3 and not the S2. Having these reports appear on the S2 workstation is undesirable because they are of no use to the S2.

The Filter function is found on the Infolder Main Menu. Selecting this option causes the Filter window, as shown in Figure 8, to appear. The options available from this window are: Sort Messages and Receive Filters. The Sort Messages option is not operational at this time.

![Filter Window](image)

Figure 8. Filter Window

When the operator selects Receive Filter from the Filter window, the Filter Messages window (as shown in Figure 9) appears. In this window, the operator selects the messages he/she wants to receive. Once the workstation operator has selected the desired messages to filter, the filter must be applied to the system so that the workstation can properly pass the messages. Once the filter is applied, only the messages selected to be received will be displayed on the workstation. Those messages selected to be filtered out will not appear in the workstations Infolder. Figure A-12 shows the flow of filter operations from the Infolder Main Menu.
The purpose of the Compose function is to provide the workstation operator with the capability to develop or compose reports and messages that can be transmitted digitally to vehicles within the battalion.

Compose is a function found on the Infolder Main Menu. When an operator selects this option, the Compose pulldown window (shown in Figure 10) appears. The options available from this window are: Adjust, Ammo, CFF (Call for Fire), Contact, Intel, Shell, Spot, Free Text, NBC, and SitRep.
When the operator selects a type of report to compose, that particular report window will appear as shown in Figures 11-20. The report can then be filled out, edited, and transmitted by using the mouse and keyboard on the workstations to other stations. The reports are compatible with the reports developed for the vehicle based CVCC system. LaVine (1991) documents the options and manner of filling out reports on the vehicle based CVCC system. Figure A-13 shows the flow of composing messages from the Infolder Main Menu.

![Message Composer](image1)

**Figure 11. Adjust Fire Report**

![Message Composer](image2)

**Figure 12. Ammo Report**
Figure 13. Call for Fire Report

Figure 14. Contact Report
Figure 15. Intelligence Report

Figure 16. Shell Report
Figure 17. Spot Report

Figure 18. Free Text Message
Figure 19. NBC Report

Figure 20. Situation Report
**View Messages**

The purpose of the View Messages function is to allow the workstation operator to display desired message(s) from the displayed message list. This list can be acquired either from the Infolder, another folder, or workbook section.

The View Messages menu, as shown in Figure 4, is available on all folders. This menu provides access, through its three options, on what message is to be displayed. The three options available are: Previous, Selected, and Next. A message from the displayed list must first be selected, then viewed. Figures A-14 and A-15 show the operations associated with viewing messages from folders.

**Dispose of Messages**

The purpose of the Dispose of Messages function is to allow the operator to file, transmit, and delete messages from the folder's message list. This allows the workstation user to continue work with message lists that are not cumbersome. It also allows him or her to retain messages that may be used at a later time.

The Dispose of Messages function, as shown in Figure 4, is available on all folders. Through its two options, this function allows messages to be filed, sent, and deleted. The two options available are: Route and Delete.

The delete option is not available in the Journal Folder. Once messages are posted to this folder, they cannot be deleted. This is because the Journal is considered a historical document of everything that takes place within the TOC. Once something is posted to the Journal, it remains as a permanent record of what has happened.

In order for a message to be disposed, the workstation operator must first select a message from the displayed list. When the operator selects Delete, any highlighted messages are deleted and removed from the message list.

When Route is selected, the Route window appears. The Route Message section details the procedures associated with this function. Figure A-16 shows the functions associated with disposing of messages.

**Route Message**

The purpose of the Route Message function is to provide the workstation user with the capability to both send and file messages that have been received from others or composed by himself.
This function is accessed either through the Route option on the Dispose of Messages menu in a folder or from a specific report's menu from the Compose function. See either the Dispose of Messages or Compose Message sections of this report for the details of these functions. From either function, when the operator selects Route, the Route Window (as shown in Figure 21) appears. This window allows the selected message to be transmitted to a variety of locations either to be filed there or sent to another station. The standard stations and folders that reports can be sent to are Higher, Commander, Staff, Lower, Infolder, Journal Map Display, and Situation Display. Also, messages can be routed to the standard workbook sections along with any sections created by the user. Figure A-17 and A-18 show the operations and system actions associated with the Route function.

![Route Window](image)

Figure 21. Route Window
Format Module

The Format Module allows the operator to create standard Army report formats as shown in FM 101-5 "Staff Organization and Operations". These formats are used by tactical units in the planning of future operations and actions.

The Format Module (Figure 4) consists of a listing of report formats available along with a listing area for created formats. The formats available are: S2-Analysis of the Area of Operations, Collection Plan, Intelligence Estimate, and Periodic Intelligence Report, S3-Operational Estimate of the Situation, Operations Order, Operational Situation Report, Periodic Operations Report, and Road Movement Order.

The formats for both the S2 and S3 workstations can be displayed on either the S2 or S3 workstation. However, only the report formats for the specific workstation can be created or edited. The report formats for the alternate workstation can only be viewed. An example of this is that the S2 can create an Intelligence Estimate on his workstation, but the S3 can only view this on his workstation. The reverse is also true with respect to the S3 being able to create Operations Order on his workstation and the S2 can only view the order on his workstation.

The functions available from the Format Module are: Open, Create, Delete, and Copy. Figure A-19 shows the flow of operations of the Format Module.

Open Report Format

The purpose of the Open Report Format function is to allow the operator to view or edit a desired report format.

The Open Report Format function is selected from the Format Module shown in Figure 4. The operator must first select a format type and a format from the displayed format list. When Open is selected, that report format is opened. Formats for each specific type of workstation (i.e. S2 or S3) can be edited. Formats from the alternate workstation cannot be edited.

Figures 22 and 23 show the opened formats for like and alternate workstations respectively. Once opened, the format can be either viewed or edited. Figure A-20 shows the functioning of the Open Report Format function.
Figure 22. Like Format Viewer

Shaded buttons indicate that these functions are non-operational.

Figure 23. Alternate Workstation Viewer
Create Report Format

The purpose of the Create Report Format function is to provide the workstation user the capability to create new and mission-specific planning reports and estimates.

The user first selects the type of format desired on the Format Module. Then, the user selects the Create Report Format function from the Format Module shown in Figure 4. When Create is selected, the Create Report window appears, as shown in Figure 24. The options available on this window are: Close, Create, and typing or editing a report format name. Once the format name is entered and Create is selected, a blank report format for the type of report format selected, is displayed. FM 101-5 "Staff Organization and Operations" shows the formats for the type of report format selected. Figures A-21 and A-22 show the flow of operations associated with the Create Report Format function.

![Create Report Format Window](image)

Figure 24. Create Report Window

Delete Report Format

The purpose of the Delete Report Format function is to give the workstation user the capability to delete unnecessary report formats from the workstation.

The Delete Report Format function is selected from the Format Module shown in Figure 4. The user then selects a report format from the displayed list. When Delete is selected, confirmation is requested from the user to delete this report. When the user provides an affirmative response, the system deletes the selected report. Figure A-23 shows the flow of operations associated with the Delete Report Format function.
Copy Report Format

The purpose of the Copy Report Format function is to provide the workstation operator the capability to copy a selected report format and rename it. This function would most likely be used to copy a report format and then edit it for a different operation such as a contingency operation.

The operator selects Copy Report Format function from the Format Module (shown in Figure 4). In order for this function to work, the operator must select a report format from the displayed list. When the Copy function is selected, the Copy Format window appears, as shown in Figure 25. The options available on this window are: Cancel, Copy, and typing or editing a format name. Once the format name is entered and Copy is selected, the newly named format is added to the format list. Figures A-24 and A-25 show the flow of operations associated with the Copy Report Format function.

![Copy Format Window]

Figure 25. Copy Format Window

Edit Function

The Edit function is available to the workstation user when a blank report format is open, or when a previously created report format is open. There is only a limited capability to edit report formats built into the system. Basically, text can only be inserted and deleted within the format. Text is inserted by moving the cursor to the desired location within the report and then typing the desired text. Text is deleted by by dragging the cursor over the text the user wants to delete and then pressing the delete button on the keyboard. Figure A-26 shows the flow of operations when editing a format.
Save Function

The purpose of the Save function is to allow the workstation operator to save a created or edited report format. Within the system, any report that is created or edited is not automatically saved. The operator must insure that he/she saves the report. If a report format is created or edited and not saved, the edits made are not saved.

The Save function is available when a blank report format or a previously created format is open, as shown in Figure 22. When the operator selects the Save function, he/she saves the changes and edits made to the displayed report format under it's current file name. Figure A-27 shows the flow of operations for the Save function.

Save As Function

The purpose of the Save As function is to allow the workstation user to save an edited report format under a different name than the original so that the original report can remain in the report list unchanged. This function could also be used when contingency operations need to be planned. The user can develop the initial Operations Order. Then, by editing the original order to include the contingency operation and using the Save As function, both reports remain within the workstation for use.

The Save As function is available when a blank report format is open, or when a previously created report format is open (See Figure 22). When the user selects Save As, the Save As window (shown in Figure 26) appears. The options available on this window are: Cancel, Save As, and type or editing a format name. Once the new name is typed in and Save As selected, the edited format is saved under the new name. The original format remains in its original condition. Figures A-28 and A-29 show the flow of operations for the Save As Format function.

![Save As Window](Figure 26. Save As Window)
Map Screen

The Map Screen contains the system level functions for the Map Display. This level allows the workstation user to interface with the different functions available on the Map Display.

The Map Screen shown in Figure 3 allows the workstation user to gain access and manipulate the functionality of the Map Display. The Map Screen has a main menu bar at its screen top with the following function options: Scale, Scroll, Features, Overlays, Stacking, and Exercise. These functions allow the workstation user to move and display map information, manipulate overlays, and control exercises being conducted on the CCTB network. The Exercise option is only available on a workstation that is initiated or powered up as a Coordinator Workstation.

Other functions that can be conducted from the Map Screen are: selecting displayed icons, using displayed scroll bars, and dragging the map to display different portions of the digital map. The Scroll Bar and Drag functions are available when the user selects them from the first set of functions. Figure A-30 shows the functioning of operations at the Map Screen level on the Map Display.

Scale Operations

The purpose of the Scale function is to allow the workstation user to change the scale of the displayed digital map to a scale that suits the current needs of the user. For example, the S3 may need to have the map at the 1:50,000 scale to review the deployment of the battalion, but the scale has to be changed to 1:125,000 to review the battalion's deployment with respect to the parent brigade.

The user selects the Scale function from the main menu bar of the Map Screen shown in Figure 3. When selected, the Scale window, as shown in Figure 27, is displayed. The options available on this window are: 1:25,000, 1:50,000, 1:125,000, and 1:250,000. When the desired scale is selected, the displayed digital map will change to the newly selected scale. Figure A-31 shows the functioning of the Scale Operations.
The purpose of the Scroll function is to allow the workstation operator to select the manner in which the map can be moved around on the Map Display. This allows the operator to position the digital map on the display so that the mission can be planned or executed easily and effectively.

The operator selects the Scroll function from the main menu bar of the Map Screen shown in Figure 3. When the scroll feature is selected, the Scroll window as shown in Figure 28 is displayed. The options available on this window are: Home, Scroll Bars, and Turn Drag On/Turn Drag Off.

The Home function repositions the map so that the location designated as the BN TOC UTM Grid is placed in the center of the Map Display. (The Exercise Operations section details this function.) The Scroll Bars function enables and disables the displayed scroll bars. If scroll bars, as shown in Figure 28, are displayed on the Map Screen, they are active. The Turn Drag On/Turn Drag Off function respectively enables and disables the cursor from being in the drag mode when on the digital map. The Turn Drag Off option is available when the Drag is enabled, and Turn Drag On is available when the Drag is disabled. When Drag is enabled, the cursor is active when on the digital map. Pressing the left mouse button with the cursor on the digital map, moving the cursor, and releasing the mouse button causes the map to be repositioned such that the map location selected moves to the location where the mouse button was released. This allows the workstation user to position the digital map so that it can be...
viewed in the desired location. Figures A-32 through A-36 show the functioning of the Scroll Operations.

![Scroll Window](image)

**Figure 28. Scroll Window**

**Features**

The purpose of the Features function is to allow the workstation user to display the map features desired onto the Map Display. This can help declutter the digital map and also allows the user to tailor the digital map to his/her desired features.

The user selects the Features function from the main menu bar of the Map Screen shown in Figure 3. When selected, the Features window (shown in Figure 29) is displayed. The options available on this window are: Contour lines, Grid Lines, Roads, Rivers, and Vegetation. Next to each option is a selection box. When the associated selection box is highlighted, that feature is displayed on the Map Screen. When the selection box is not highlighted, that feature is removed from the Map Screen. The user can select any combination of features to be displayed. Figure A-37 shows the operations associated with the Features function.
The Overlay Operations functions provide the workstation operator with the capability to create, send, edit, copy, and delete overlays on the Map Display.

The operator selects the Overlay Operations functions from the main menu bar of the Map Screen shown in Figure 3. When selected, the Overlay pulldown window (shown in Figure 30) is displayed. The options available on this window are: Create, Edit, Send, Copy, Delete, and Hilite Top/Unhilite Top. These functions allow the workstation user to perform many required overlay operations within the Automated BN TOC. The Unhilite Top function is available when the top overlay is hilited, and Hilite Top is available when the top overlay is not hilited. Figure A-38 shows the flow to specific overlay operations.
Create Overlay

The Create Overlay function allows the workstation user to create new overlays on the Automated BN TOC workstation. For example, the S2 would use this function if he/she were to develop a new enemy situation overlay.

The user selects Create from the Overlay pulldown window shown in Figure 30. When Create is selected, the Create Overlay window (shown in Figure 31) is displayed. The options available on this window are: Cancel, Create, and typing or editing a new overlay name. Once the user enters a name and selects Create, the Build and Edit Overlays Screen appears on the digital map of the Map Screen. The Build and Edit Overlays Screen section documents this functionality. Figures A-39 and A-40 show the flow of operations associated with creating an overlay.
The Edit Overlay function allows the workstation operator to edit and change existing overlays within the BN TOC system. An example of this is the TOC developing a FRAGO for a contingency operation in the same area of their current mission. The TOC can call up the current overlay and make the necessary changes by editing this overlay instead of creating a totally new overlay.

The operator selects the Edit Overlay function from the Overlay pulldown window shown in Figure 30. When Edit is selected, the Edit Overlay window (shown in Figure 32) is displayed. The Edit Overlay window displays a list of overlays available on that workstation and has three options that can be performed. The options available are: Cancel, Edit, and selecting an overlay from the displayed list. Once the operator selects an overlay from the list and then selects Edit, the Build and Edit Overlays Screen appears. The selected overlay appears in the edit mode on the digital map of the Map Screen. At this point, the overlay can be edited according to the Build and Edit Overlays Screen section. Figure A-41 shows the flow of operations associated with editing an existing overlay.
Send Overlay

The purpose of the Send Overlay function is to allow the workstation operator to transmit existing overlays to either deployed vehicles, other TOCs, or other workstations on the battalion command radio net. Taking the example presented above, when the FRAGO overlay developed is finished, it now needs to be transmitted to the required units. The Send Overlay function enables the overlay to be transmitted over the radio to the desired units.

The operator selects the Send Overlay function from the Overlay pulldown window shown in Figure 30. When Send is selected, the Send Overlay window (shown in Figure 33) is displayed. The Send Overlay window displays a list of overlays available on that workstation and has four options that can be performed. The options available are: Close, Send, selecting an overlay to send, and selecting a station to send the overlay. Once the operator selects an overlay, a location to send the overlay, and Send, then the selected overlay is sent out over the SINCGARS radio to the designated stations. Only one overlay can be sent at a time, but that overlay can be sent to multiple locations. Figures A-42 and A-43 show the flow of operations associated with sending an overlay to other stations.

Copy Overlay

The purpose of the Copy Overlay function is to allow the workstation user to copy an existing overlay either from the user's own workstation or another workstation. For example, the S2 might initially develop a template, based on doctrinal deployment, for a Motorized Rifle Battalion in the defense. He/she might then copy this overlay to a new mission-specific name, and then edit the mission-specific overlay.

The user selects the Copy Overlay function from the Overlay pulldown window shown in Figure 30. When Copy is selected, the Copy Overlay window (shown in Figure 34) is displayed. The Copy Overlay window displays a list of overlays available on the
selected workstation and has five options that can be performed. The options available are: Close, Copy, selecting a listing of overlays from a different workstation, selecting an overlay to be copied, and typing a name for the new overlay. Once the user selects the desired overlay to be copied, the name for the new overlay is typed, Copy is selected, then the selected overlay is copied to the new name. The overlay name is added to the workstations overlay list. Figures A-44 and A-45 show the flow of operations associated with copying an overlay.

![Copy Overlay Window](image)

Figure 34. Copy Overlay Window

**Delete Overlay**

The Delete Overlay function is used by the workstation operator to remove unwanted overlays from the overlay stack and Automated BN TOC system. This function could be used by the S2 or S3 after they completed their planning process for an upcoming mission. They may need to get rid of unneeded alternate course of action overlays to keep their overlay stack from becoming too cluttered.

The operator selects the Delete Overlay function from the Overlay pulldown window shown in Figure 30. When Delete is selected, the Delete Overlay window (shown in Figure 35) is displayed. The Delete Overlay window displays a list of overlays available on that workstation. The options that can be performed in this window are: Close, Delete, and selecting an overlay to be deleted from the displayed list. Once the operator selects the desired overlay to be deleted then selects Delete, a confirmation is requested from the operator to delete the selected overlay. Once an affirmative response is received, the selected overlay is deleted from the overlay list and system. Figures A-46 shows the flow of operations associated with deleting an overlay.
The purpose of the Hilite Top/Unhilite Top function is to allow the workstation user to show which overlay is the top overlay on the Digital Map. Moving an overlay to the top of the order is explained in the Stacking Section below.

The user selects the Hilite Top/Unhilite Top functions from the Overlay pulldown window. Only one of these functions is active at a time. The functions toggle with respect to which function is active. Selecting one causes the other function to become active. When the user selects Hilite Top, the drawing points of the top overlay on the Digital Map are outlined with a black box. When Unhilite Top is selected, the boxes around the top overlay's drawing points are removed. Figure A-47 shows the flow of operations associated with highlighting and unhighlighting the top overlay on the Digital Map.

**Stacking**

The Stacking functions provide the workstation operator the capability to manipulate overlays. These functions include the posting and unposting of overlays to either the Map Screen or Situation Display and changing the stacking order of overlays that are posted to the Map Display. The S2 could use these functions to post his latest enemy situational template to the Situation Display. This would keep the Executive Officer up-to-date with the current enemy situation.

The operator selects the Stacking functions from the main menu bar of the Map Screen shown in Figure 3. When selected, the Stack pulldown window (shown in Figure 36) is displayed. The options available are: Post to Map, Unpost from Map, Unpost Top, Post to Situation Display, Unpost from Situation Display, Rotate Up, Rotate Down, and Stack. These functions allow the workstation user to post/unpost overlays to the Situation Display and the workstation's Map Display and change the stacking order of posted overlays within the Automated BN TOC. Figure A-48 shows the flow to specific Stacking operations.
The purpose of the Post to Map function is to give the workstation user the capability to post desired overlays to the Digital Map. An example of this function is the S3 posting the S2's enemy situation template overlay to his Map Display to evaluate the current Operations Overlay.

The user selects the Post to Map function from the Stack pulldown window shown in Figure 36. When Post to Map is selected, the Post to Map window (shown in Figure 37) is displayed. The Post to Map window displays a list of overlays available that have not been posted to the map and has three options that can be performed. The options available are: Close, Post, and selecting an overlay to post from the displayed list. The user must first select the desired overlay to be posted and then Post to Map. Then the selected overlay is posted to the Digital Map as the top overlay on the map. Figure A-49 shows the flow of operations associated with posting an overlay to the Digital Map.
The purpose of the Unpost from Map function is to provide the workstation operator the capability to remove overlays from the Digital Map. The workstation operators would either use this function whenever posted overlays are no longer needed on the Map Display or to just unclutter the Map Display.

The operator selects the Unpost from Map function from the Stack pulldown window shown in Figure 36. When Unpost from Map is selected, the Unpost from Map window (shown in Figure 38) is displayed. The Unpost from Map window displays a list of overlays that are posted to the map and has three options that can be performed. The options available are Close, Unpost, and select an overlay to remove from the displayed list. Once the user selects the desired overlay to be removed and Remove, the selected overlay is removed from the Digital Map. Figure A-50 shows the flow of operations associated with unposting an overlay from the Digital Map.

The Unpost Top function provides the workstation user the capability to quickly remove the top overlay from the Digital Map. The S3 could use this function to remove an enemy situational template that he/she had posted to check the operations overlay.
The user selects the Unpost Top function from the Stack pulldown window shown in Figure 36. When Unpost Top is selected, the top posted overlay is removed from the Digital Map. Figure A-51 shows the flow of operations associated with unposting the top overlay from the Digital Map.

**Post to SitDisp**

The purpose of the Post to SitDisp function is to provide the workstation operator with the capability to post overlays to the Situation Display. The S3 would use this function to post the latest Operations Overlay to the Situation Display so that the Commander or Executive Officer can review the current situation.

The operator selects the Post to SitDisp function from the Stack pulldown window shown in Figure 36. When Post to SitDisp is selected, the Post to SitDisp window (shown in Figure 39) is displayed. The Post to SitDisp window displays a list of overlays that are not posted to the Situation Display and has three options that can be performed. The options available are: Close, Post, and selecting an overlay to post. Once the operator selects the desired overlay to be posted then selects Post, the selected overlay is posted to the Situation Display. Figure A-52 shows the flow of operations associated with posting an overlay to the Situation Display.

![Post to SitDisp Window](image)

**Unpost from SitDisp**

The purpose of the Unpost from SitDisp function is to provide the workstation user the capability to remove overlays that are posted to the Situation Display. Either the S2 or S2 could use this function to remove any overlays they had posted to the Situation Display.

The user selects the Unpost from SitDisp function from the Stack pulldown window shown in Figure 36. When Unpost from SitDisp is selected, the Unpost from SitDisp window (shown in Figure 40) is displayed. The Unpost from SitDisp window displays a list of overlays that are posted to the Situation Display by that workstation and has three options that can be performed. The
options available are: Close, Unpost, and selecting an overlay, from the displayed list to remove. Once the user selects the desired overlay to be removed then selects Unpost, the selected overlay is removed from the Situation Display. Figure A-51 shows the flow of operations associated with posting an overlay to the Situation Display.

Figure 40. Unpost From SitDisp Window

**Rotate Up**

The purpose of the Rotate Up function is to allow the workstation operator to change the stacking order of posted overlays by moving the top overlay to the bottom of the overlay stack and moving the rest of the posted overlays up one position.

The operator selects the Rotate Up function from the Stack pulldown window shown in Figure 36. When Rotate Up is selected, the stacking order of overlays posted to the Digital Map is changed. The top overlay is moved to the bottom of the overlay stack, and the rest of the posted overlays are moved up one position. Figure A-54 shows the operations associated with using the Rotate Up function.

**Rotate Down**

The Rotate Down function provides the workstation user the capability to change the stacking order of posted overlays by moving the bottom overlay to the top of the overlay stack and moving the rest of the posted overlays down one position.

The user selects the Rotate Down function from the Stack pulldown window shown in Figure 36. When Rotate Down is selected, the stacking order of overlays posted to the Digital Map is changed. The bottom overlay is moved to the top of the overlay stack, and the rest of the posted overlays are moved down one position. Figure A-55 shows the operations associated with using the Rotate Down function.
Overlay Stack

The purpose of the Stack function is to give the workstation user the capability to selectively change the stacking order of posted overlays by individually moving overlays to either the top or bottom of the overlay stack.

The user selects the Stack function from the Stack pulldown window shown in Figure 36. When Stack is selected, the Overlay Stack window (shown in Figure 41) is displayed. The Overlay Stack window displays a list of overlays that are posted to the Digital Map and has four options that can be performed. The options available are: Close, To Top, To Bottom, and selecting an overlay from the displayed list. Once the user selects the desired overlay to be moved and either Top or Bottom, the selected overlay is either moved to the top or bottom of the overlay stack, respectively. Figure A-56 shows the flow of operations associated with using the Stack function to change the stacking order of posted overlays.

![Overlay Stack Window](image)

Figure 41. Overlay Stack Window

Exercise Operations

The purpose of the Exercise functions is to provide evaluators and testers the capability to control exercises, operations, and tests being conducted using the Automated BN TOC.

The Exercise functions are only available on the workstation that is brought up as a Coordinator workstation. A Coordinator workstation is used to control exercises, operations, and tests being conducted on the Automated BN TOC within CCTB. The Exercise functions are selected from the main menu bar shown in Figure 3 of the Map Screen. When a tester or evaluator selects Exercise, the Exercise pulldown window (shown in Figure 42) is displayed. The options available are: BN TOC UTM, Checkpoint, Shutdown, Restart, and Delete. These functions allow the Coordinator workstation to control and save the conditions of nodes on the CCTB. Figure A-57 shows the flow to specific Exercise operations.
The purpose of the BN TOC UTM function is to provide the coordinator workstation operator the capability to change the grid coordinate associated with the BN TOC. This allows the other workstation operator to "home" the Digital Map to a different location. The Home function is documented in the Scroll Operation section of this document.

The operator selects the BN TOC UTM function from the Exercise pulldown window shown in Figure 42. When BN TOC UTM is selected, the BN TOC UTM Grid window (shown in Figure 43) is displayed. The BN TOC UTM Grid window has three options that can be performed. The options available are: Cancel, pressing the "Enter" key, and entering a new grid coordinate location. The grid coordinate entered by the operator must have the two letter Grid Zone Designator and have an even number of grid coordinates up to a maximum of eight. Once the operator enters the desired UTM grid and presses "Enter", the new BN TOC UTM grid is entered into the BN TOC workstations. Figure A-58 shows the flow of operations associated with using the BN TOC UTM function.
The purpose of the Checkpoint function is to provide the coordinator workstation operator the capability to save the state of all workstations and vehicle simulators on the same network as the Coordinator workstation. The Checkpoint file is used to restart workstations and vehicle simulators in a predetermined location and condition.

The operator selects the Checkpoint function from the Exercise pulldown window in Figure 42. When Checkpoint is selected, the Checkpoint window (shown in Figure 44) is displayed. The Checkpoint window has three options that can be performed. The options available are: Close, Checkpoint, and typing in a checkpoint name. Once the operator enters the desired name and selects Checkpoint, the current status of all workstations, simulators, and anything else on the network is saved. Figures A-59 and A-60 show the flow of operations associated with checkpointing.

The purpose of the Restart function is to provide the coordinator workstation operator with the capability to restart all workstations and simulators on the CCTB network from a previously saved Checkpoint file. This function can be used to run multiple TOC crews through the same scenario and compare the performance between TOC staffs.
The operator selects the Restart function from the Exercise pulldown window shown in Figure 42. When Restart is selected, the Restart window (shown in Figure 45) is displayed. The Restart window displays a list of all Checkpoint files and has three options that can be performed. The options available are: Close, Restart, and selecting a Checkpoint file. Once the operator selects the desired Checkpoint file then selects Restart, a message is displayed requesting confirmation from the operator to restart all workstations and vehicle simulators. Once an affirmative response is received, all workstations and simulators are restarted under the selected Checkpoint file. Figure A-61 shows the flow of operations associated with restarting the workstations and vehicle simulators.

![Figure 45. Restart Window](image)

**Exercise Delete**

The purpose of the Delete function is to provide the coordinator workstation operator the capability to delete Checkpoint files that are no longer needed.

The operator selects the Delete function from the Exercise pulldown window shown in Figure 42. When Delete is selected, the Delete Exercise window (shown in Figure 46) appears. The Delete Exercise window displays a list of available Checkpoint files and has three options that can be performed. The three options are: Close, Delete, and selecting a Checkpoint file from the list. Once the operator selects the desired Checkpoint file then selects Delete, a message is displayed requesting confirmation from the operator to delete the selected Checkpoint file. Once an affirmative response is received, the Checkpoint file name is removed from the displayed list and the file is deleted. Figure A-62 shows the flow of operations associated with deleting a Checkpoint file from the system.
SELECTED COMPONENT.

Checklist List Area

Delete 

Figure 46. Delete Exercise Window

Displayed Icons

Selecting a displayed icon is the remaining function that can be performed at the Map Screen level on the Map Display. The purpose of selecting displayed icons is to provide the workstation user the capability either to gain more information about icons displayed on the Digital Map or to change the icons so that information can be added or removed from the Digital Map. An example of this might be the S2 selecting a report generated icon on his/her map display to determine what report caused this icon to be displayed. The S3 could select a POSNAV displayed icon to change the icon aggregation level so that he/she can unclutter the map display.

The user can select displayed icons at any time on the Map Display except when the drag is turned on. Then selecting an icon causes nothing to happen. There are three different types of icons that can be displayed. They are: POSNAV/Graphic icons, report generated icons, and pointing arrow-heads on the side of the Digital Map.

If the user selects a POSNAV icon, a pulldown window (shown in Figure 47) is displayed with the following options: Aggregate, Bring to Front, and Send to Back. Moving the cursor to Aggregate causes a cascading window to appear with the following options: Battalion, Company, Platoon, and Vehicle. Selecting one of these levels causes the selected icon to be aggregated to the selected level. If the user selects Bring to Front or Send to Back, the level at which the icon is displayed on the Digital Map changes. This means the icon will be shown on the display either in front of or behind any other graphic on the display, with the exception of the map.
If the user selects a report generated icon, the pulldown window (shown in Figure 48) is displayed with the following options: Link To, View, Delete, Bring to Front, and Send to Back. The Link To function is used to link report icons to either POSNAV or graphic control icons. The View function causes the report associated with that icon to appear on the Map Screen. The Delete function removes the displayed icon from the Digital Map. Selecting Bring to Front or Send to Back performs as stated above in selecting a POSNAV icon.

The user can select a pointing arrow with either the left or center mouse button. Depending on what the arrow-head is pointing at, if the user presses the center mouse button, either the pulldown menu for the POSNAV icon or the menu for the report generated icon is displayed. If the left mouse button is pressed, a pulldown window (shown in Figure 49) is displayed with the following options: Go To and Remove Arrow. Selecting Go To causes the Digital Map to reposition so that the icon being pointed to is in the center of the Map Display. Selecting Remove Arrow removes the pointing arrow-head from the Map Display.

Figures A-63 through A-68 show the flow of operations associated with selecting a displayed icon.
Build and Edit Overlays Screen

The following section details the set of functions available on the Map Display to create and edit overlays. This set of functions is only available when the workstation operator edits or creates an overlay. The purpose of the Build and Edit Overlays Screen is to provide the operator the capability to create and edit overlays. The operator uses this function to build any overlay, whether it is an Operations Overlay or an Enemy Situational Template.

The operator can enter the Build and Edit Overlays Screen (shown in Figure 50) either through the Create or Edit functions from the Overlay pulldown window on the main menu of the Map Screen. These functions are documented in the Create Overlay and Edit Overlay section, respectively. When the Build and Edit Overlays Screen appears, the main menu on the Map Screen changes. The Stacking function is removed and Group is added in its place on the main menu bar. The specific options available are: selecting Overlays, drawing a control measure, posting a symbol, editing an existing symbol or drawn control measure, selecting Group, selecting a displayed icon (see Displayed Icon section), and using the scroll bars or dragging the map (see Scroll Operations section). Figure A-69 shows the flow to specific operations on the Build and Edit Overlays Screen.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Scroll</th>
<th>Features</th>
<th>Overlays</th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Points of Interest</td>
<td>Armor</td>
<td>cavalry</td>
<td>Infantry</td>
<td>Artillery</td>
</tr>
<tr>
<td>Points of Interest</td>
<td>Armor</td>
<td>cavalry</td>
<td>Infantry</td>
<td>Artillery</td>
</tr>
</tbody>
</table>

Figure 50. Build and Edit Overlays Screen
Select Overlays

Selecting Overlays from the main menu bar allows the workstation user to save or clear overlays and exit the Build and Edit Overlays Screen. These functions could be used by the user after he/she is finished editing an overlay and needs to save the overlay and exit the Build and Edit Overlays Screen.

The user selects overlays from the main menu bar of the Build and Edit Overlays Screen shown in Figure 50. When it is selected, the Select Overlays pulldown window (shown in Figure 51) appears. The options available on this window are: Save, Save As, Done Editing, and Clear All. These functions allow the workstation user to save or clear overlays and exit the Build and Edit Overlays Screen.

When the user selects Save, the current overlay displayed on the Build and Edit Overlays Screen is saved. The Save As function allows the current overlay to be saved under a new name. The Done Editing option is used to exit the Build and Edit Overlays Screen and bring the Map Screen back to the Map Display. The Clear All function clears all drawn graphics from the current overlay on the Build and Edit Overlays Screen. Figures A-70 through A-74 show the flow of the specific Overlay operations.

Figure 51. Select Overlay Pulldown Window
Draw Control Measure

A control measure is defined in FM 101-5-1, "Operational Terms and Symbols", as "directives given graphically or orally by a commander to subordinate commands in order to assign responsibilities, coordinate fires and maneuver, and to control combat operations." The purpose of the Draw Control Measure function is to provide the workstation user the ability to draw graphic control measures on overlays so that the directives required to control combat operations can be sent to subordinate elements of the TOC.

The user selects the Drawn Control Measures options from the left side of the Build and Edit Overlays Screen shown in Figure 50. The workstation has a choice of seven different types of control measures that can be drawn. These options are: Angled Shapes, Curved Shapes, Angled Lines, Curved Lines, Curved Arrows, Curved Double Headed Arrows, Curved Double Stemmed Arrows, and Curved Double Headed and Double Stemmed Arrows.

Once the user selects a drawn control measure type, the Edit Attributes Screen is displayed in the Build and Edit Overlays Screen. That control measure's attributes can now be edited. Editing control measure attributes is documented in the Edit Attributes Screen section. When the control measure's attributes are correct, the user can draw it on the overlay. The workstation operator draws the measure by moving the mouse and pressing the left and center mouse buttons. When the user presses the left button, a drawing point is placed on the screen. This point will be used to shape the control measure. Pressing the center mouse button determines the last point of the control measure. Once the center mouse button is pressed, the control measure is drawn according to its attributes onto the overlay. Figures A-75 through A-77 show the flow of operations associated with drawing a control measure on an overlay.

Edit Attributes Screen

The purpose of the Edit Attributes Screen is to provide the workstation operator with the capability to edit the attributes of drawn control measures and posted graphics.

The operator accesses the Edit Attributes Screen through the Build and Edit Overlays Screen either when a graphic control measure is being drawn, a symbol is being posted, or an existing graphic (either drawn or symbol) is being edited. A graphic's attributes are edited from the attribute bar shown in Figure 50. Table 1 shows a listing of attributes for each drawn control measure. When a graphic is selected, it appears in the Graphic Display field (shown in Figure 50). The Graphic Display field shows the workstation user a preview of the graphic before it is drawn on the Digital Map. As the graphic's attributes are edited, then the graphic control measure in the Graphic Display field
changes. Once the operator finishes drawing a graphic or selects Finished from the Attributes bar, the Edit Attributes Screen disappears. Figures A-78 through A-81 show the flow of operations associated with editing a graphic control measure's attributes.

Table 1

Drawn Control Measure Attribute Listing

<table>
<thead>
<tr>
<th>Symbol Type</th>
<th>Use</th>
<th>Status</th>
<th>Alignment</th>
<th>Unit Size</th>
<th>Label</th>
<th>Head</th>
<th>Tail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angled Shapes</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rounded Shapes</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Angled Lines</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Curved Lines</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Curved Arrows</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Curved Double Headed Arrows</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Curved Double Stemmed Arrows</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Curved Double Headed &amp; Stemmed Arrows</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
symbol by moving the cursor with the mouse and pressing the left or center button. When a mouse button is selected, the symbol is posted to the overlay. Figure A-82 and A-83 show the flow of operations associated with posting a control measure to an overlay.

Table 2
Symbol Type and Attribute Listing

<table>
<thead>
<tr>
<th>Points of Interest:</th>
<th>Status</th>
<th>Alignment</th>
<th>Unit Size</th>
<th>Left</th>
<th>Bottom</th>
<th>Right</th>
<th>Center</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>Checkpoint, Lineup Point, Passage Point, and ACP</td>
<td>X X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Startpoint, Release Point, Coordinating Point, Contact Point, Point of Departure, and Traffic Control Point</td>
<td>X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Armor: Armor, Arm Car, and Arm Atn</td>
<td>X X X X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Armor: Armor Bn TOC</td>
<td>X X X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cavity: Arm Car, Air Car, Cavity</td>
<td>X X X X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cavity: Cav/Bn TOC</td>
<td>X X X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infantry: Infantry, Mech Inf, Mz Inf, Li Inf, Ranger, BIFV (Navy), and Ad Hoc</td>
<td>X X X X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infantry: FTOC and Mech TOC</td>
<td>X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Artillery: Artillery, Rocket Artillery, Self-Prop, and Target Atn</td>
<td>X X X X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Artillery: 155 How SP and 203 How SP</td>
<td>X X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineer: Engineer, Bridging, Topo Eng, Amphb Eng, and Seaway</td>
<td>X X X X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air Defense: Air Defense, Btl Air, and Bn Air Sp</td>
<td>X X X X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aviation: Helicopter and Fixed Wing</td>
<td>X X X X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSS: Armor Trn, Mech Trn, and MLOC</td>
<td>X X X X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSS: Armor Sp Pr</td>
<td>X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other: Signal, Medics, Mil Police, and CIDHA</td>
<td>X X X X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other: Text</td>
<td>X</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
The Edit Graphic functions provide the workstation user the capability to move, adjust, and change the graphics of an overlay. An example of this is the S3 developing an operations overlay. He/she can post the graphic initially, and then either adjust it's location or change its attributes.

An overlay with posted graphics must be on the Build and Edit Overlays Screen in order for the user to edit existing graphics. There are three types graphics that the user can edit: Symbols, Drawn Graphical Control Measures, and Text Labels.

For symbols, the user moves the cursor to the desired symbol. Both the left and center mouse buttons can be used to edit the symbol. The center button moves and repositions the symbol. If the left button is pressed, the pulldown window (shown in Figure 54) appears with the following options: Move Object, Delete Object, Link To, Unlink, Hierarchy, View, Edit Attributes, Bring to Front, and Send to Back. Move Object allows the symbol to be moved and placed in another location. Selecting Delete Object removes the selected symbol from the overlay. Selecting Link To links the posted symbol to another posted symbol. The Unlink function unlinks any symbols that are linked to it. Hierarchy allows linked icons to be aggregated at the battalion, company, and platoon levels. The View function allows the workstation user to view any messages linked to the posted symbol. Selecting Edit Attributes brings up the Edit Attributes Screen with that symbol's attributes in the associated fields. The Bring to Front and Send to Back functions perform as previously stated.

```
Move Object
Delete Object
Link To
Unlink
Hierarchy
View
Edit Attributes
Bring to Front
Send to Back
```

Figure 52. Symbol Edit Pulldown Window

For drawn control measures, the user moves the cursor to a drawing point of that symbol. The user uses both the left and center mouse buttons to edit the control measure. The center button moves and repositions the drawing point. The control measure is reshaped when the button is released. If the left button is pressed, the pulldown window (shown in Figure 55) appears with the following options: Move Line, Delete Line, Add Label, Add Point, Move Point, Delete Point, Edit Attributes, Move Unit Size, Bring to Front, and Send to Back. The Move Line
function causes the selected control measure to retain its original shape but be moved to a different location on the overlay. Selecting Delete Line removes the selected line from the overlay. Selecting Add Label posts another label as defined by that control measure’s attributes to the drawing point selected. Selecting Add Point adds another point to the control measure to help the workstation user reshape the control measure. The Move Point function allows the workstation operator to move existing drawing points to reshape the drawn control measure. Selecting Edit Attributes brings up the Edit Attributes Screen with that control measure’s attributes in the associated fields. Selecting Move Unit Size moves the unit size as defined by the control measure's attributes to the drawing point selected. The Bring to Front and Send to Back functions perform as previously stated.

Figure 53. Drawn Control Measure Edit Pulldown Window

For text labels, the user must move the cursor to the desired text label on the overlay. The user can use both the left and center mouse buttons to edit the text label. The center button is used to move and reposition the text label. If the left button is pressed with the cursor on the label, the pulldown window (shown in Figure 56) appears with the following options: Move Text, Delete Text, Edit Attributes, Bring to Front, and Send to Back. The Move Text function allows operator the to move the selected text label to another location. Selecting Delete Text removes the selected text label from the overlay. Selecting Edit Attributes brings up the Edit Attributes Screen with that text label's attributes in the associated fields. The Bring to Front and Send to Back functions perform as previously stated.

Figure 54. Text Label Edit Pulldown Window

Figures A-84 through A-96 show the flow of operations associated with editing an existing graphic on an overlay.
Group

The purpose of the Group function is to provide the workstation user the capability to move, delete, and copy single or multiple graphic control measures and symbols. The S2 would use these functions to copy and post multiple symbols (such as enemy units) to develop an enemy doctrinal template.

The user selects the Group function from the main menu of the Build and Edit Overlays Screen shown in Figure 50. When Group is selected, the Group pulldown window (shown in Figure 57) appears. The options available are: Move, Delete, Duplicate, and selecting control measures on to which to perform Group functions. The user selects control measures either by dragging a box around the control measure or holding down the shift key and selecting the desired control measures with the mouse. Once a control measure is selected, then a Group function can be performed on it. Selecting Move allows the control measure(s) to be moved to a different location. The Delete option removes the selected control measure(s) from the overlay after a confirmation is received from the user. The Duplicate function causes the selected control measure(s) to be copied and posted onto the screen. Figure A-97 and A-98 shows the flow of operations associated with the Group function.

![Group Pulldown window](image)

**Figure 55.** Group Pulldown Window
Summary

As shown in the previous sections, the existing TOC workstations are very complex and flexible. This prototype system has taken many of the tasks previously performed manually and, using new technology, automated those tasks. The new automation provides new capabilities and power that previously has not existed.

This report has documented both the physical and functional aspects of the automated BN TOC workstations. It has also provided descriptions of how the automated BN TOC interacts with other CVCC systems to include tank simulators and other TOC workstations. As stated previously, the CVCC program, under which the automated BN TOC is developed, is used to formulate future weapon systems and organizations. This prototype TOC, in an interactive environment such as the CCTB, is one such system that can be used to study the impact of increased automation on C3.
References


Appendix A

Functionality Flowcharts for the Automated Battalion TOC

Flow Chart Description

The following section consists of the flowcharts that describe the actions of the BN TOC. The flowcharts follow in figure number order and the order in which they are referenced within the body of the main document.

After the figure number and title of each of the flowcharts, there is a flowchart code that is used within the flowcharts to direct the reader to the other flowcharts in this appendix. The code consists of a FC# prefix (which means "Flowchart Number") and a two, three or four letter designator followed by a number. The letter designators determine to which series the flowcharts belong. For example, all flowcharts dealing with the Message Folder have a MF designator. The number following the letter designator determines the location and order of the flow chart series.

There are four shapes used in the flowcharts. The first shape is a rectangle. The rectangle is used as the start point for all flow charts, and also shows any system actions or changes that occur. The second shape is a rectangle with rounded corners. This shape is used to depict any actions that the workstation user performs within the system. The third shape is a diamond. This shape is used for making logical decisions within the system. The last shape is shaped like the home plate on a baseball diamond. This figure is used to direct the flow to different flowcharts on another page.

When "Make Alternate Selection" is shown, it means that any other selection, available from the selections available on that screen, can be selected. For example, on the first Message Folder flow chart, alternate selections would be found on the Infolder/Folder flow chart, which is the higher or parent flowchart for the Message Folder flowcharts.
BN TOC
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- Move cursor to Message Module on the Communication and Planning Display
  - The module border changes color from light blue to tan.
    - FC# IF1: Infolder/Folder (Message Module)

- Move cursor to Format Module on the communication and Planning Display
  - The module border changes color from light blue to tan.
    - FC# FM1: Format Module

- Move cursor to Map Screen on the Map/Situation Display
  - The module border changes color from green to tan.
    - FC# MS1: Map Screen

Figure A-1. Main System Level (FC# M1)
The main menu is only available on the Infolder.

All folders except the Infolder can be closed. The Infolder does not have this function.

Figure A-2. Infolder/Folder (FC# IF1)
Figure A-3. Infolder Main Menu (FC# IN1)
Figure A-4. Message Folder (FC# MF1)
The Folder window disappears and the Workbook window appears. The workbook index is displayed with a list of all available sections. Standard sections are: Air, Armor, Artillery, Infantry, Miscellaneous, and NBC.

The cursor cannot move out of the window.

Select Close

The Workbook window disappears.

Select Delete

Select Create

Select Open

Select a workbook section from the list.

Type a new section name.

Figure A-5. Message Folder (cont.) (FC# MF2)
If folder with Workbook window displayed.

Make a alternate selection

Select Delete

Is a section from the list selected?

The following error message appears: "Must Specify Folder Name."

The cursor cannot move out of the error message box.

Select OK within the message box.

The message box disappears.

FC# MF2: Message Folder (cont.)

Does the selected section have messages in it?

No

Yes

The following error message box appears: "Section Name has messages; NOT deleted."

The selected sections are deleted and removed from the workbook section list.

FC# MF2: Message Folder (cont.)

Yes

Is a standard section selected?

The following error message box appears: "Section Name is a standard folder; NOT deleted."

FC# MF2: Message Folder (cont.)

No

Figure A-6. Message Folder (cont.) (FC# MF3)
Figure A-7. Message Folder (cont.) (FC# MF4)
The following error message appears: "Must Specify Folder Name."

Is a section from the list selected?

The cursor cannot move out of the error message box.

Select OK within the message box.

The message box disappears.

The following error message box appears: "Section Name' folder is already opened."

Figure A-8. Message Folder (cont.) (FC# MF5)
**In folder** with Workbook window displayed.

- **Make an alternate selection**
  - FC# MF2: Message Folder (cont.)

- **Select a workbook section from the displayed list.**
  - The section selected is highlighted in reverse video. More than one selection can be selected. A selected section can be deselected and it reverts back to normal video.
  - FC# MF2: Message Folder (cont.)

- **Type a new workbook section name.**
  - The name typed appears in the Create Workbook Section field. Only 14 characters can be typed.
  - FC# MF2: Message Folder (cont.)

---

**Figure A-9. Message Folder (cont.) (FC# MF6)**
Figure A-10. Message Folder (cont.) (FC#: MF7)
Read aloud: If a folder radio button is selected, then the button hilites. If a folder from the list is selected, then the folder is hilited in reverse video. More then one folder can be selected. Selections can also be deselected and they revert to unhilted for buttons and normal video for folders from the list.

Figure A-11. Message Folder (cont.) (FC# MF8)
The following error message appears: "Function not yet implemented."

The cursor cannot move out of the message box.

The message box disappears.

The Filter Messages window disappears.

The radio button is hilited. Any hilited radio button selected is unhilited. More than one radio button can be selected.

Figure A-12. Filter Message (FC# FM1)
The compose window appears. Options available are: Adjust, Ammo, CFF (Call for Fire), Contact, Intel, Shell, Spot, Free Text, NBC, and SitRep.

Select a report.

The report window for the selected report appears.

Make alternate selection

FC# IN1: Infolder Main Menu

Select Close

The report window disappears.

Select Route

The report window disappears.

Fill out selected report.

See the CCD section on reports to determine what fields are available for each of the reports. All reports that can be composed in the BN TOC are the same as the ones in the vehicles with the exception of the Free Text message. This message is only available in the TOC. The Free Text message takes its inputs from the TOC workstation keyboard.

The differences between reports generated on the workstations and from within the vehicles are that when non-grid fields are selected in the workstation, the options available for that field appear in pop-up windows from within the field. This allows the complete report to be viewed at once, unlike the vehicle report that has multiple pages and a summary page that need to be viewed.

Figure A-13. Compose Message (FC# CM1)
Figure A-14. View Messages (FC# VM1)
Figure A-15. View Messages (cont.) (FC# VM2)
Figure A-16. Dispose of Messages (FC# DM1)
Infolder/Folder with either a report displayed or the folders message list displayed.

Select Route

The Route window appears. The Report window contains the following radio buttons for routing the message: Higher, CMDR, Staff, Lower, Infolder, Journal, MapDisp, and SitDisp. Also, a listing of the available workbook sections are displayed.

Select Cancel

The selected radio button destination.

The Route window disappears.

Select Send

FC# RTE2: Route Message (cont.)

Select a radio button destination.

The selected radio button hilites. More than one can be selected at a time. If a hilited button is selected, then the button unhilites.

The selected section hilites in reverse video. More than one section can be selected. If a previously hilited section is reselected, then it reverts to normal video.

Select a workbook section.

Entry point from FC# RTE2.

Figure A-17. Route Message (FC# RTE1)
Infolder/Folder with the Route window displayed.

Make an alternate selection.

FC# RTE1: Route Message

Is a destination selected?

Yes

The following error message appears: "Must Specify Destination."

The message selected is sent to the designated
destinations either by filing in a folder or over
SINCGARS radio.

No

The cursor cannot move out of the message box.

Select OK within the message box.

The message box disappears.

Select Send

Is a message selected?

Yes

The following error message appears: "No Message Selected."

The message selected is sent to the designated destinations either by filing in a folder or over SINCGARS radio.

No

The Route window disappears.

If sending from a report, the report window also disappears.

*This decision is only relevant when routing a message from a folder. If routing from a displayed report, that report is sent.

Figure A-18. Route Message (cont.) (FC# RTE2)
The following are formats for the S2 workstation: AnalAreaOpns, Collection, IntelEst, and PerlInt.

-The following are formats for the S3 workstation: EST/Sit, OpsnOrd, OpnSit, PerOpnRpt, and RoadMvt.

Figure A-19. Format Module (FC# FM1)
The following error message appears: "Select a format type to list reports."

The cursor cannot move out of the message box.

Select OK within the message box.

The message box disappears.

The selected report is displayed. "Unchanged" is displayed under the report name.

The report cannot be edited.

The Save and Save As options are shaded and perform no operation.

---

Figure A-20. Open Report Format (FC# ORF1)
Figure A-21. Create Report Format FC# (CRF1)
Format Module

The Create Report window disappears.

A blank unedited format of the selected type is displayed.

"New" is displayed below the type name.

Make an alternate selection

Select Close

Edit Format

Select Save

Select Save As

Figure A-22. Create Report Format (cont.) (FC# CRF2)
Figure A-23. Delete Report Format (FC# DRF1)
Figure A-24. Copy Report Format (FC# CORF1)
Figure A-25. Copy Report Format (cont.) (FC# CORF2)
Figure A-26. Edit Format (FC# EF1)

*The cursor must remain in the report format window in order to be edited.*
Figure A-27. Save Format (FC# SVF1)
Format Module
with a report format displayed.

Select Save or Edit Format

See FC#s SVF1 and EF1 respectively

Select Close

Has the report been edited?

Yes

The following message appears: "This report has been edited. Please confirm that you wish to close this report viewer, losing any changes which have been made."

No

The displayed report format disappears.

The cursor cannot move out of the box.

Select Cancel

Select OK within the message box.

The message box disappears.

The message box and displayed report format disappear. The report format is not saved.

Select Save As

The Save As window appears. Options available are: Cancel, Save As, and typing a new report name.

The cursor cannot move out of the window.

FC# FM1: Format Module

FC# SAF2: Save As Format (cont.)

Figure A-28. Save As Format (FC# SAF1)
Format Module
with a report format and
Save As window displayed.

Select Cancel

FC# SAF1:
Save As Format

Select Save As

Type or edit name in
Name field.

The name appears
in the Name field.

Is a name
entered in the
Name field?

No

Yes

Were non-
alphanumerics,
spaces, or ' ' entered
into the name field?

No

Yes

Does the
typed name
already exist?

No

Yes

The following error
message box appears:
"You must enter the
name of a report."

The cursor cannot
move out of the
box.

Select OK within the
message box.

The message box
disappears.

The following error
message is
displayed: "That
report already
exists."

The cursor cannot
move out of the
message box.

Select OK within the
message box.

The message box
disappears.

FC# SAF1:
Save As Format

The report format is
saved under the
new name.

The Save As
window disappears.

The following error
message is
displayed: "Only
alphanumerics,
spaces, and ' ' are
allowed in report
names."

Figure A-29.  Save As Format (cont.) (FC# SAF2)
Figure A-30. Map Screen (FC# MS1)
Map Screen
with Scale window displayed.

Default for map scale is 1:250,000 when the system is started.

The 1:250,000 field on the Scale window is highlighted.

Make an alternate selection.

Select a scale for the Map. Options available are:
1:250,000, 1:125,000, 1:50,000, and 1:25,000

The Scale window disappears.

The Map Screen, with all features selected, rescales within 20 seconds even if the current scale is selected.

While the screen is rescaling, no other operation can be performed.

The rescaled map is displayed on the Map Screen.

The selected field highlights and then the Scale window disappears.

FC# MS1: Map Screen

Figure A-31. Scale Operations (FC# SL1)
Map Screen
with Scroll Window displayed.

The options available for the Scroll window are: Turn Drag On (Turn Drag Off)*, Home**, and Scroll Bars.

Default for Map Scrolling is:
No drag operations active but with scroll bars displayed and active.

Select Turn Drag On/Turn Drag Off*

FC# SCR2: Dragging the Map

Select Home

FC# SCR3: Homing the Map

Select Scroll Bars

FC# SCR4: Scroll Bars

Make an alternate selection.

The Scroll window disappears.

FC# MS1: Map Screen

*The Turn Drag Off options is only available when the "Drag" is turned on by the Turn Drag On option. The opposite is true when the "Drag" is turned off.

**The Home function is only available on workstations that are brought up as a Coordinator.

Figure A-32. Scroll Operations (FC# SCR1)
Map Screen with Scroll window displayed.

Select Turn Drag On

Make an alternate selection.

FC# SCR1: Scroll Operations

The Scroll window disappears from the screen.

On the Scroll Window, Turn Drag On is changed to Turn Drag Off

The cursor on the Map Screen is active.

Select desired map location, press and hold the left or center button on mouse, and move the cursor to the position that you want the selected location.

A black line appears between the location selected and the cursor until the left mouse button is released.

Release the left mouse button.

The map repositions with the location selected, in the cursor location where the left mouse button was released.

FC# MS1: Map Screen

Entry point for scrolling the map.

Figure A-33. Dragging the Map (FC# SCR2)
Map Screen with Scroll window displayed.

Make an alternate selection

Select Home*

The Scroll window disappears from the screen.

The map is repositioned so that the location, corresponding to the UTM grid displayed in the upper right corner of the Map Screen, is positioned in the center of the screen.

FC# MS1: Map Screen

*This function is only available on workstations designated as the Coordinator.

Figure A-34. Homing the Map (FC# SCR3)
Map Screen
with Scroll window displayed.

Make an alternate selection

Select Scroll Bars

FC# SCR1: Scroll Operations

The Scroll window disappears from the screen.

Figure A-35. Scroll Bars (FC# SCR4)

Select up or down arrow or drag the shaded box in the vehicle scroll bar along the left side of the map.

Select left or right arrow or drag the shaded box in the horizontal scroll bar along the bottom of the map.

Move map Up/Down or Left/Right?

L/R

U/D

Are Scroll Bars already on the map screen?

Yes

The Scroll Bars are removed from the Map Screen.

No

An UP/Down scroll bar appears on the left side of the Map Screen and a left/right scroll bar appears on the bottom of the map display.

The displayed map area, on the Map Screen moves in the selected direction.

Change the positioning of the map on the screen.

FC# MS1: Map Screen

FC# MS1: Map Screen

No
Map Screen
with Scroll Window
displayed.*

Make an alternate
selection.

Select Turn Drag Off

FC# SCR1: Scroll
Operations

The Scroll window
disappears from the
screen.

On the Scroll
window, Turn Drag
Off is changed to
Turn Drag On.

The cursor on the Map
Screen is not active.
Attempting to select
and drag a location on
the map causes
nothing to occur.

FC# MS1: Map
Screen

* As stated on FC# MS3, The "Drag" must
be on to select this option. The Scroll
option must be selected from the Map
Screen again in order for the Scroll window
to appear.

Figure A-36. Turning Drag Off (FC# SCR5)
Map Screen with Features window displayed.

The default for features is gridlines, roads, and rivers when the system is started.

The radio buttons for gridlines, roads and rivers on the Features window are highlighted.

Select a feature for the map. Options available are: Contour Lines, Grid Lines, Roads, Rivers, and Vegetation.

Is the selected feature already displayed on the map?

No

The selected feature is displayed on the map screen.

Yes

The radio button next to the selected feature unhighlights.

The Features window disappears.

The selected feature is removed from the map screen.

Make an alternate selection.

The features window disappears.

FC# MS1: Map Screen

The radio button next to the selected feature is highlighted.

FC# MS1: Map Screen

Figure A-37. Features (FC# F1)
Map Screen
With Overlay window displayed

The initial window selections for the Overlay window are: Create, Edit, Send, Copy, Delete, Post to Map, Remove, Remove Top, Hilite Top*, Rotate Up, Rotate Down, and Stack.

Select an operation for the main menu or alternate screen.

Overlays window disappears.

FC# MS1: Map Screen

Select Create

Select Edit

Select Send

Select Copy

Select Delete

Select Hilite Top*

FC# DLT1: Delete

FC# HT1: Hilite Top*

*Hilite Top toggles to Unhilite Top when it is selected and vice versa. Both operations are explained in FC# HT1.

Figure A-38. Overlay Operations (FC# OV1)
Map Screen with Overlay window displayed.

1. Make alternate selection.
   - See FC# OV1: Overlay Operations

2. Select Create
   - Overlay window disappears and Create Overlay window appears.
   - The cursor cannot move out of the window.

3. Select Cancel
   - The Create Overlay window disappears.
   - FC# MS1: Map Screen

4. Type or edit overlay name.
   - The name typed is displayed in the name field of the Create Overlay window. The name length can be unlimited, however, the first characters entered will scroll off of the window.

5. Select Create
   - FC# CRT2: Create (cont.)

Entry point from FC# CRT2.

Figure A-39. Create Overlay (FC# CRT1)
Figure A-40. Create Overlay (cont.) (FC# CRT2)
Map Screen
with Overlay Window displayed.

Make alternate selection.

See FC# OV1:
Overlay Operations

Select Edit

Overlay window disappears and Edit Overlay window appears.
The names of all overlays, available for that workstation, are
displayed in the Name field.

The cursor cannot move out of the window.

Select Cancel

Select Edit

Is an overlay from the list selected?

The following error message is displayed:
"Select an Overlay to Open."

The cursor cannot be moved out of the error message box.

Select OK within the error message box.

The error box disappears.

Select an overlay name from the available list.

The selected overlay name is highlighted in reverse video. Only
one name can be highlighted at a time.

FC# MS1: Map Screen

FC# BE1: Build and Edit Overlays Screen with
selected overlay in the edit mode.

Figure A-41. Edit Overlay (FC# EDT1)
Map Screen with Overlay window displayed.

Make alternate selection.

FC# OV1: Overlay Operations

Select Send

The Overlay window disappears and the Send Overlay window appears. The names of all overlays, available for that workstation, are displayed in the name field.

The cursor cannot be moved out of the window.

Select Close

The Send Overlay window disappears.

Select an overlay to send.

The selected overlay name is highlighted in reverse video. Only one name can be highlighted at a time.

Select a message destination.

The selected destination radio button highlights. Multiple locations can be selected. If a selected destination is reselected, the radio button will unhighlight.

Select Send

FC# SND2: Send (cont.)

Entry point for flow from FC# SND2.

Figure A-42. Send Overlay (FC# SND1)
Map Screen
with Send Overlay window displayed.

- Make alternate selection
  - FC# SND1: Send
    - The following error message is displayed: "Select an overlay to send."
      - The cursor cannot be moved out of the error message box.
      - Select "OK" within the error message box.
      - The error box disappears.

- Select Send
  - is an overlay from the displayed list selected?
    - Yes
      - The selected overlay is sent to the designated locations. The Send window remains on the map screen. The name of the sent overlay changes to normal video. The destination button remains lit.

    - No
      - Is a destination selected?
        - Yes
          - FC# SND1: Send

        - No
          - The following error message is displayed: "Select destination."

Figure A-43. Send Overlay (cont.) (FC# SND2)
Map Screen with Overlay window displayed.

Make alternate Selection.

FC# OV1: Overlay Operations

Select Copy

The Overlay window disappears and the Copy Overlay window appears. The default folder for display is the overlay folder for that workstation. The names of all overlays, available in that folder, are displayed in the name field.

The cursor cannot be moved out of the window.

Select Close

The Copy Overlay window disappears.

FC# MS1: Map Screen

Select an overlay name, from the displayed list, to be copied.

The overlay name selected is hiilted and the name is changed in the New Name field. Only one overlay can be selected at a time.

Type or edit overlay name

AlphanumericS typed are displayed in the New Name field. The character length of the new name can be 8 characters in length.

Select folder button

The folder name in the folder button changes each time it is selected. The overlays available to each folder are displayed in the name field.

Select Copy

FC# COPY2: Copy (cont.)

Figure A-44. Copy Overlay (FC# COPY1)
Map Screen
with Copy Overlay window displayed.

Make alternate selection

FC# COPY1: Copy

Is an overlay to be copied selected?

Select Copy

The following error message is displayed: "Select an overlay to copy."

The cursor cannot move out of the error message box.

Select OK within the error message box.

The error box disappears.

The following error message is displayed: "The overlay name cannot be longer than 8 characters."

The following error message is displayed: "Only alphanumeric, spaces, and '-' allowed in names."

Were more than 8 characters entered into the name of the new overlay?

Was anything other than alphanumeric entered into the name?

Does the typed name already exist?

The overlay is copied to the new name, and the new name is added to the list.

The overlay already exists.

Figure A-45. Copy Overlay (cont.) (FC# COPY2)
Map Screen
with Overlay window Displayed.

Select Delete

The Overlay window disappears and the Delete Overlay window appears.

The cursor cannot be moved out of the window.

Select Close

The Delete Overlay window disappears.

FC#OV1: Overlay Operations

Select an overlay from the displayed list.

The name of the overlay selected is highlighted in reverse video. If another overlay is selected, that name will be displayed in reverse video and the first will revert to normal video.

FC# MS1: Map Screen

Select Delete

Is an overlay selected?

Yes

The following message appears: "Overlay Name" is in the overlay stack. Please confirm that you wish to remove it from the overlay stack and delete it from disk."

The cursor cannot move out of the message box.

Select OK

Select Cancel

The selected overlay is removed from the overlay list and deleted from disk.

No

The following error message is displayed: "Select an overlay to delete."

The cursor cannot move out of the message box.

Select OK within the message box.

The message box disappears.

Figure A-46. Delete Overlay (FC# DLT1)
Map Screen with Overlay window displayed.

Make alternate selection.

Select Hilite Top

FC#OV1: Overlay Operations

All points used to plot the graphics on the top overlay are displayed by a box around the point.

The Overlay window disappears.

On the Overlay window, Hilite Top is changed to Unhilite Top.

FC# MS1: Map Screen

"The Hilite Top function also toggles to the Unhilite Top function when it is selected and vice versa. The Unhilite function works just the opposite of the Hilite function. When used, the Unhilite function removes the boxes from the top overlay. Also, the Unhilite Top function on the Overlay window is changed to Hilite Top.

Figure A-47. Hilite Top (FC# HT1)
Map Screen
with Stack window displayed.

The window selections available are: Post to Map, Unpost from Map, Unpost Top, Rotate Up, Rotate Down, and Stack.

Select an operation from the main menu or alternate screen.

Stack window disappears.

FC# MS1: Map Screen

Select Post to Map

FC# PTM1: Post to Map

Select Unpost from Map

FC# UPM1: Unpost from Map

Select Unpost Top

FC# UPT1: Unpost Top

Select Post to SitDisp

FC# PSD1: Post to SitDisp

Select Unpost from SitDisp

FC# UPSD1: Unpost from SitDisp

Select Rotate Up

FC# RU1: Rotate Up

Select Rotate Down

FC# RD1: Rotate Down

Select Stack

FC# OSTK1: Overlay Stack

Figure A-48 Stacking (FC# SKT1)
Figure A-49. Post to Map (FC# PTM1)
The Overlay window disappears and the Unpost from Map window appears. The list of overlay only contains the names of those posted on the map.

The cursor cannot be moved out of the window.

Select an overlay from the displayed list.

The name of the overlay selected is hilit in reverse video. If another overlay is selected, that name will be displayed in reverse video and the first will revert to normal video.

Was the overlay selected the top overlay?

The following error message is displayed: "Select an overlay to remove."

The cursor cannot move out of the message box.

Select OK within the message box.

The message box disappears.

The name of the removed overlay is removed from the Top field on the Map Screen.

The selected overlay is removed from the Map Screen.
Map Screen with Overlay window displayed.

Make alternate selection.

FC# STK1: Stacking

Select Unpost from Map

The Overlay window disappears and the Unpost from Map window appears. The list of overlay only contains the names of those posted on the map.

The cursor cannot be moved out of the window.

Select Close

Select an overlay from the displayed list.

The name of the overlay selected is hilited in reverse video. If another overlay is selected, that name will be displayed in reverse video and the first will revert to normal video.

Select Unpost

Is an overlay selected?

Yes

Was the overlay selected the top overlay?

Yes

The name of the removed overlay is removed from the Top field on the Map Screen.

No

The selected overlay is removed from the Map Screen.

No

The cursor cannot move out of the message box.

Select OK within the message box.

The message box disappears.

FC# MS1: Map Screen

Figure A-51. Unpost Top (FC# UPT1)
Map Screen
with Stack window displayed.

Make alternate selection.

Select Post to SitDisp.

The Stack window disappears and the Post to SitDisp window appears. All overlays in overlay file are displayed.

The cursor cannot move out of the window.

Select Close
Select an overlay from the list.
Select Post

Is an overlay selected?

Yes

The Post to SitDisp window disappears.

The selected overlay is posted to the Situation Display.

FC# MS1: Map Screen

No

The following error message is displayed:
"Select an overlay to post to SitDisp."

The cursor cannot move out of the message box.

Select OK within the message box.

The message box disappears.

FC# STK1: Stacking

Select an overlay to post to SitDisp.

Select Post to SitDisp.

The Stack window disappears.

Figure A-52. Post to SitDisp (FC# PSD1)
Figure A-53. Unpost from SitDisp (FC# UPSD1)
Figure A-54. Rotate Up (FC# RU1)
Map Screen with Stack window displayed.

Make alternate selection.

Select Rotate Down

The Stack window disappears.

The order of stacking, of posted overlays, is changed. The bottom overlay, in the stack, is moved to the top of the overlay stack, and all other posted overlays move down one position in the stack.

The Top field on the map screen is changed to display the new top overlay name.

FC# MS1: Map Screen

Figure A-55. Rotate Down (FC# RD1)
Map Screen
Stack window displayed.

Make alternate selection.

Select Stack

The Stack window disappears and the Overlay Stack window appears. The overlay list only displays the names of overlays that are already posted to the map.

The cursor cannot be moved out of the window.

Select Close

Select Top

Is an overlay selected?

No

The following error message is displayed: "Select an overlay to pop to the top."

Yes

The selected overlay is moved to the top on the Map Screen and the Stack window.

The Top field on the Map Screen is changed to the new top overlay.

Select Bottom

Is an overlay selected?

No

The following error message is displayed: "Select an overlay to pop to the bottom."

Yes

The selected overlay is moved to the bottom on the Map Screen and the Stack window.

Select an overlay from the displayed list.

The name of the overlay selected is hilit in reverse video. If another overlay is selected, that name will be displayed in reverse video and the first will revert to normal video.

Figure A-56. Overlay Stack (FC# OSTK1)
Map Screen
with Exercise window displayed*.

Make alternate selection from main menu.

The Exercise window disappears.

Select BN TOC UTM

Select Checkpoint

Select Delete

FC# BT1: Bn TOC

FC# CP1: Checkpoint

FC# EXD1: Exercise Delete

Select Restart

Select Shutdown

FC# RS1: Restart

The system/program terminates.

*This option is only available on the workstation designated as the coordinator.

Figure A-57. Exercise Operations (FC# EX1)
Map Screen
with Exercise
window displayed.

Make alternate
selection.

Select BN TOC UTM

The Exercise window disappears and the Bn
TOC UTM Grid window appears.

The cursor cannot move out of the window.

FC# EX1:
Exercise
Operations

Select Cancel

The BN TOC UTM
Grid window
disappears.

Select Enter

The BN TOC field on
the Map Screen is
cleared and no grid
is displayed in the
field.

Enter a UTM grid.

The grid entered is
displayed in the
UTM Grid field.

Was the two letter
grid zone designator
entered correctly?

The following error
message is displayed:
"Not enough leading
characters."

The following error
message is displayed:
"Odd length."

Was an odd number
of numbers entered
for the UTM grid?

No

Select Cancel

The error
message box
disappears.

Yes

Select "OK" within
the error message
box.

The error
message box
disappears.

FC# MS1: Map
Screen

FC# MS1: Map
Screen

Select "OK" within
the error message
box.

The error
message box
disappears.

Yes

Select Enter

The grid entered is the
new BN TOC grid and is
displayed in the BN TOC
field on the Map Screen.

Figure A-58. BN TOC UTM (FC# BT1)
Map Screen with Exercise window displayed.

Make alternate selection.

FC# EX1: Exercise Options

Select Checkpoint

The Exercise window disappears and the Checkpoint window appears.

The cursor cannot move out of the window.

Select Close

The Checkpoint window disappears.

FC# MS1: Map Screen

Type a checkpoint file name.

The typed name appears in the Checkpoint Name field.

Select Checkpoint

FC# CP2: Checkpoint (cont.)

Figure A-59. Checkpoint (FC# CP1)
Figure A-60. Checkpoint (cont.) (FC# CP2)
Figure A-61. Restart (FC# RS1)
Map Screen with Exercise window displayed.

Make alternate selection.

ExerdosDelete

FC# EX1: Exercise Operations

Select Delete

The Exercise window disappears and the Delete Exercise window appears. A list of all available checkpoint files is displayed.

The cursor cannot move out of the window.

Select Close

Select a checkpoint file from list.

The Delete window disappears.

The selected checkpoint file is highlighted in reverse video. Any previously highlighted file is unreversed.

Select Delete

Is a checkpoint selected?

No

The following error message is displayed: "Select a checkpoint to delete."

The cursor cannot move out of the message box.

Select OK within the message box.

The message box disappears.

Yes

The following message is displayed: "Please confirm that you wish to delete the checkpoint file name" from all Battalion TOC workstations.

The cursor cannot move out of the window.

Select Cancel

The Delete window disappears.

Select OK

The Checkpoint file is deleted and removed from list. The Delete window disappears.

FC# MS1: Map Screen

Figure A-62. Exercise Delete (FC# EXD1)
Figure A-63. Displayed Icon (FC# DI1)
Map Screen or Build and Edit Overlays Screen

- Make Alternate Selection
  - FC# D11: Displayed Icon
- Move cursor to a report generated icon
  - A black outline box appears around the icon.
  - Press center or left mouse button.
  - A pop-up window appears. Options available are: Link To, View, Delete, Bring to Front, and Send to Back.

- Entry point for FC# DI8: Displayed Icon (cont.)
- Move cursor off pop-up window and release button.
  - The pop-up window disappears.
  - Nothing happens.
- FC# MS1: Map Screen or FC# BE1: Build and Edit Overlays
- Select Link To
  - FC# D13: Displayed Icon (cont.)
- Select View
  - FC# D14: Displayed Icon (cont.)
- Select Delete, Bring to Front, or Send to Back
  - FC# D15: Displayed Icon (cont.)

Figure A-64. Displayed Icon (cont.) (FC# DI2)
Figure A-65. Displayed Icon (cont.) (FC# DI3)
Map Screen or Build and Edit Overlays Screen with pop-up window displayed.

Make Alternate Selection

FC# D12: Displayed Icon

Select View

The pop-up window disappears.

The report associated with the selected icon is displayed on the map screen. The report cannot be edited but can be sent to other stations.

See FC# RTE1: Route Message for sending and canceling reports.

FC# MS1: Map Screen or FC# BE1: Build and Edit Overlays

Figure A-66. Displayed Icon (cont.) (FC# D14)
Figure A-67. Displayed Icon (cont.) (FC# DI5)
Figure A-68. Displayed Icon (cont.) (FC$\#$ DI6)
Build and Edit Overlays Screen

The main menu bar is displayed with the Group option available in place of the Stacking options.

Select an operations from main menu except OVERLAYS

Go to M$1: Map Screen for operation function and then return to Build and Edit Overlays.

Select OVERLAYS from main menu.

FC# SO1: Select Overlays

Draw a graphical control measure on the overlay.

FC# DCMM: Draw Control Measure

Post a symbol to the overlay.

FC# PS1: Post Symbol

Edit an existing symbol or drawn control measure.

FC# EG1: Edit Graphic

Select Group

Select a displayed icon.

Make a selection on the Communication and Planning Screen.

FC# GP1: Group

FC# DI1: Displayed Icon

FC# C&P1: Communication and Planning

Use Scroll Bars is available.

FC# SCR4: Scroll Bars

Use Drag* if available.

FC# SCR2: Dragging the Map

*Only symbols can be drawn when the drag is enabled. No figures can be drawn or edited.

Figure A-69. Build and Edit Overlays Screen (FC# BE1)
Figure A-70. Select Overlays (FC# SO1)
Build and Edit Overlays Screen with Select Overlays window displayed.

Make alternate selection

FC# SO1: Select Overlays

Select Save As

The Select Overlays window disappears and Save As window appears.

The cursor cannot move out of the window.

Select Cancel

The Save As window disappears. Nothing is saved and the overlay remains in the edit mode.

FC# BE1: Build and Edit Overlays Screen

Type an overlay name

The name is entered in the New Name field.

Select Save As

FC# SO3: Select Overlays (cont.)

Figure A-71. Select Overlays (cont.) (FC# SO2)
**Figure A-72. Select Overlays (cont.) (FC# SO3)**
Build and Edit Overlays Screen
with Select Overlays window displayed.

Make alternate selection.

FC# SO1: Select Overlays

Select Done Editing

The Select Overlays window disappears.

Was the overlay edited?

No

The Build and Edit Overlays Screen is removed from the Map display.

FC# MS1: Map Screen

Yes

The following message appears: "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."

The message box disappears.

The overlay is saved and displayed.

select Save

select Remove

The message box disappears.

The overlay edits are not saved and the unedited overlay is displayed.

The cursor cannot be moved out of the box.

Figure A-73. Select Overlays (cont.) (FC# SO4)
Build and Edit Overlays Screen with Select Overlays window displayed.

Make alternate selection

FC# S01: Select Overlays

Select Clear All

The Select Overlays window disappears.

The following message appears: "Please confirm that you wish to delete all objects in the overlay."

The cursor cannot be moved out of the message box.

Select Cancel

All overlay graphics remain intact.

Select OK

All graphics are removed from the overlay being edited.

FC# BE1: Build and Edit Overlays Screen

Figure A-74. Select Overlays (cont.) (FC# S05)
Figure A-75. Draw Control Measure (FC# DCM1)
Figure A-76. Draw Control Measure (cont.) (FC# DCM2)
Figure A-77. Draw Control Measure (cont.) (FC# DCM3)

Build and Edit Overlays Screen

- Make alternate selection or edit map.
- Press the middle mouse button at the ending location.
- The selected shape is drawn according to its associated shaping algorithm.

FC# BE1: Build and Edit Overlays Screen
Build and Edit Overlays Screen with a control measure selected.

- Make alternate selection or edit map.
- Edit the shape's associated attributes.

FC# BE1: Build and Edit Overlays Screen

Select finished.

- The figure is removed from the Graphic Display field and the attributes bar disappears.

FC# BE1: Build and Edit Overlays Screen

Move the cursor to the Line field and press and hold left mouse button.

A pop-up window appears with the following line thickness options: Thin, Medium, and Thick. These options will change the line thickness of the shape.

Move cursor to the Status field and press and hold left mouse button.

A pop-up window appears with the following status options: Confirmed and Unconfirmed. Confirmed makes shapes lines solid and Unconfirmed makes shapes lines dashed.

Move cursor to the Alignment field and press and hold left mouse button.

A pop-up window appears with the following alignment options: Friendly and Enemy. Friendly makes the shape's color black and enemy makes the shape's color red.

Move the cursor within the pop-up window to make a selection and release the mouse button.

Edit the Unit Size or Label fields.

FC# EA2: Edit Attributes (cont.)

Edit the Head or Tail fields.

FC# EA3: Edit Attributes (cont.)

The selected attribute is displayed in its field on the attribute bar.

The control measure in the Graphic Display field is changed to display the graphic with the new attribute. The same is true on the Map Screen if editing an existing control measure.

FC# DCM1: Draw Control Measure or FC# PS1 Post Symbol

Figure A-78 Edit Attributes (FC# EAl)
Build and Edit Overlays Screen
with a graphic control measure selected.

Make alternate selection or edit map.

Edit the shape's associated attributes.

Select Finished or edit the Line. Status, or Alignment attribute.

A pop-up window appears with the following unit size symbol options: None, PLT, CO, BN, GEGT, BDE, and DIV. Selecting any of the above options puts the symbol for that unit size on the drawn shape.

Move the cursor within the pop-up window to make a selection and release the mouse button.

The selected attribute is displayed in its attribute field.

The control measure in the Graphic Display field is changed to display the graphic with the new attribute. The same is true on the Map Screen if editing an existing control measure.

Move cursor to the Unit Size field and press and hold left mouse button.

Type alphanumerics /Edit Label field.

The label field is active by default. If it is not active, it must be selected. The typed text is displayed in the label field. Up to 16 alphanumerics can be typed.

Press the "Enter" key on the keyboard.

The entered text is displayed at the end of all lines and arrows, and is displayed at the first point selected for shapes in both the Graphic Display field and for any edited shape on the Map Screen.

Figure A-79. Edit Attributes (cont.) (FC# EA2)
Figure A-80. Edit Attributes (cont.) (FC# EA3)
Build and Edit Overlays Screen with a graphic control measure selected.

The control measure in the Graphic Display field is changed to display the graphic with the new attribute. The same is true on the Map Screen if editing an existing control measure.

FC# DCM1: Draw Control Measure or FC# PS1 Post Symbol

Figure A-81. Edit Attributes (cont.) (FC# EA4)
Build and Edit Overlays Screen

Make alternate selection or edit map.

FC# BE1: Build and Edit Overlays Screen

Select a symbol category. Options available are: Points of interest, Armor, Cavalry, Infantry, Artillery, Engineer, Air Defense, Aviation, CSS, and Other.

A Symbols Category window appears with the symbols available for the selected option.

Select a symbol from the displayed category. See Table 2 for symbols available by category.

The Symbols Category window disappears.

A graphic of the selected symbol appears in the Graphic Display field.

The overlays function on the main menu is shaded. This function is disabled.

The attributes bar for the selected symbol is displayed. See Figure 3.53 for each shape associated attributes.

Make alternate selection.

FC# BE1: Build and Edit Overlays Screen with no Overlays option.

Entry point for redundant attribute editing.

Continue with current symbol.

Are the symbol's attributes correct?

Yes

Draw symbol

FC# PS2: Post Symbol (cont.)

No

Edit the symbols associated attributes.

FC# EA1: Edit Attributes

Figure A-82. Post Symbol (FC# PS1)
Build and Edit Overlays Screen
with a symbol ready for posting.

Is the Drag "On"?

No edits can be made to overlays.

Move cursor to desired map location to draw symbol.

Select the left or middle mouse button.

The symbol gets posted on the map for points of interest as follows: The center of mass of the Coordinating Point and ACP are located at the selected location. All other points are at the end point of their stems/pointers. The center of mass for all unit symbols is located at the point selected by the mouse.

Figure A-83. Post Symbol (FC# PS2)
Figure A-84. Edit Graphic (FC# EG1)
Build and Edit Overlays Screen
with a thin box around a posted symbol.

Move cursor off symbol.

Move cursor to desired location.

Press center mouse button.

Press left mouse button

A pop-up window appears with the following options: Move Object, Delete Object, Link to, Unlink, Hierarchy, View, Edit Attributes, Bring to Front, and Send to Back.

Release left button.

Make Selection from window.

The initial symbol is removed from the map.

The outline box disappears.

The initial symbol is redrawn in the new location.

The outline box moves with the cursor.

Figure A-85. Edit Graphic (cont.) (FC# EG2)
Build and Edit Overlays Screen with pop-up window on a displayed symbol.

Select Move Object
- The pop-up window disappears.
- A box outlining the symbol appears. It is locked to the movement of the cursor.
- Move cursor to the desired location.
- The box moves with its center of mass at the cursor location.
- Press center or left mouse button.

Select Delete Object
- The pop-up window disappears.
- The following message is displayed: "Please confirm the deletion of specified icon."
- The cursor cannot move out of the message box.
- Select Cancel
  - The message window disappears.
- Select OK
  - The message window disappears.
  - The symbol is removed from the map.

Select Link To
- FC# EG4: Edit Graphic (cont.)
- FC# EF5: Edit Graphic (cont.)

Select Unlink, Heirarchy, or View.
- FC# EG6: Edit Graphic (cont.)

Select Edit Attributes, Bring to Front, and Send to Back.

The initial symbol is removed from the map.
- The outline box disappears.
- The initial symbol is redrawn in the new location.

FC# BE1: Build and Edit Overlays

Figure A-86. Edit Graphic (cont.) (FC# EG3)
Build and Edit
Overlays Screen
with pop-up window on a
displayed symbol.

Select Move Object
or Delete Object

FC# EG3: Edit
Graphic (cont.)

Select Link To*
The pop-up window disappears.

Is the symbol
already linked to
another icon?

Yes

The following message
is displayed: "The
specified icon is already
linked to another.
Please confirm that you
wish to re-link it.

The cursor cannot
move out of the
message box.

Select Cancel
Select OK

The message box
disappears.
The message box
disappears.

FC# BE1: Build
and Edit
Overlays

No

An arrow appears
from the center of
the selected symbol
locked to the cursor.

Move cursor.

The arrow
moves with the
cursor.

Press center or left
mouse button.

Is the cursor on a
drawn object or
icon?

No

The arrow
disappears. Nothing
has happened.

FC# BE1: Build
and Edit
Overlays

The initial icon and
arrow disappear.

The "linked to" icon
disappears and is
then redrawn where
the cursor was.

*Only unit symbols can be
linked to other icons. For
points of interest, this option is
shaded and non-functioning.
Linking causes Unlink and
Hierarchy to become solid for
the unit being "linked to".

Figure A-87. Edit Graphic (cont.) (FC# EG4)
Build and Edit Overlays Screen

with pop-up window on a displayed symbol.

- Select Move Object or Delete Object
  - FC# EG3: Edit Graphic (cont.)

- Select Link To
  - FC# EG4: Edit Graphic (cont.)

- Select Unlink*
  - The pop-up window disappears.
  - The selected symbol is unlinked.
  - FC# BE1: Build and Edit Overlays

- Select Heirarchy
  - A side pop-up window appears. The unit's hierarchy is displayed both up and down if applicable.

- Select View**
  - The pop-up window disappears.
  - A folder with all reports linked to that icon appears on the communications screen.

Move cursor off windows and release mouse button.

- All windows disappear. No functions are performed.

Move cursor off windows and release mouse button.

- FC# BE1: Build and Edit Overlays

- Make a hierarchy selection.
  - The initial icon disappears and all elements at the level selected are displayed.

- When completed with Infolder then FC# BE1: Build and Edit Overlays appears.

- Select Edit Attributes, Bring to Front, and Send to Back.

- FC# EG6: Edit Graphic (cont.)

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*You can only Unlink from linked icon and not the linked to icon.

**The View option is only available if there are reports linked to the icon.

Figure A-88. Edit Graphic (cont.) (FC# EG5)
Figure A-89. Edit Graphic (cont.) (FC# EG6)
Figure A-90. Edit Graphic (cont.) (FC# EG7)
Figure A-91. Edit Graphic (cont.) (FC# EG8)
Figure A-92. Edit Graphic (cont.) (FC# EG9)
Build and Edit Overlays Screen
with a thin box around a
drawing point on a drawn
control measure.

Move cursor off
drawing point.

Press center mouse
drawings point button.

A black drawing line appears
between points on either side
of the selected point. An end
point has a line running to the
next point of the shape. The
drawing line is locked to the
movement of the
mouse/cursor.

Move cursor to
desired location.

A pop-up window appears with the
following options: Move Line, Delete
Line, Add Label, Add Point, Move
Point, Delete Point, Edit Attributes,
Move Unit Size, Bring to Front, and
Send to Back.

Release left button.

The black drawing line moves with the
cursor.

Release center
button.

The shape is
redrawn with the
new drawing point.

The black drawing line disappears.

FC# BE1: Build
and Edit
Overlays

FC# EG3: Edit
Graphic (cont.)

Figure A-93. Edit Graphic (cont.) (FC# EG10)
Figure A-94. Edit Graphic (cont.) (FC# EG11)
Build and Edit Overlays Screen
with a pop-up window on a selected drawing point.

Select Move Line, Delete Line, or Add Label

FC# EG11: Edit Graphic (cont.)

Select Add Point

The pop-up window disappears.

Select Move Point

The pop-up window disappears.

Select Delete Point

The pop-up window disappears.

For an enclosed shape, a black drawing line appears between the point selected and the preceding point. For linear shapes, the same is true except at an end point. At an endpoint, a black line appears after it. The center of the drawing line is locked to the cursor.

Move cursor

The drawing line moves.

Press center or left mouse button.

The shape is redrawn with the new point added.

FC# BE1: Build and Edit Overlays

Select Edit Attributes, Move Unit Size, Bring to Front, or Send to Back.

FC# EG13: Edit Graphic (cont.)

Figure A-95. Edit Graphic (cont.) (FC# EG12)
Build and Edit Overlays Screen with a pop-up window on a selected drawing point.

- Select Move Line, Delete Line, or Add Label
  - FC# EG11: Edit Graphic (cont.)
  - Select Add Point, Move Point, or Delete Point
    - FC# EG12: Edit Graphic (cont.)
      - When Finished is selected from Edit Attributes then FC# BE1: Build and Edit Overlays
        - *The Move Unit Size option is not available unless a unit size is currently displayed on the control measure.

- Select Edit Attributes
  - The pop-up window disappears.
  - The selected text is moved in front of any icons that were in front of it.
  - FC# BE1: Build and Edit Overlays

- Select Move Unit Size*
  - The displayed unit size on the shape moves to the selected drawing point.
  - The selected text is moved in front of any icons that were in front of it.
  - FC# BE1: Build and Edit Overlays

- Select Bring to Front
  - The pop-up window disappears.

- Select Send to Back
  - The pop-up window disappears.

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Figure A-96. Edit Graphic (cont.) (FC# ED13)
Build and Edit Overlays Screen

Make alternate selection

FC# BE1: Build and Edit Overlays

Select Group

The Group window appears. The options available are: Move, Duplicate, and Delete.

Make a selection from window.

The Group window disappears.

No operation is performed.

FC# BE1: Build and Edit Overlays

Drag a box around a control measure or press and hold the shift key and select a control measure with the left mouse button*.

The selected control measures drawing points are boxed with a thick box.

Select Group

The Group window appears.

FC# GP2: Group (cont.)

*-For a symbol, if the area outlined by its drawing points is not in the box drawn by the cursor, then the symbol is not selected.

-If the start point of a shape is not included in the box drawn by the cursor, then the symbol is not selected.

-If an end point of a linear control measure is not included in the box drawn by the cursor, then the symbol is not selected.

Figure A-97. Group (FC# GP1)
Figure A-98. Group (cont.) (FC# GP2)