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AUTOMATED VESSEL LOGS - VOLUME 3: USER'S GUIDE FOR THE LOG PROTOTYPE

WA-RD 296.3

Final Report
June 1993



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16. ABSTRACT <p>This project developed a prototype computer-aided vessel log system for the Washington State Ferry System (WSF). The researchers generated three reports that describe the results of their research. This third volume contains a user's guide for prototype software.</p> <p>The other two volumes include a summary report and a technical description of the program itself. The first volume (the summary report) contains a description of the project and summarizes the design and testing results of the prototype automated vessel log. The second volume (the technical report) contains a two-part guide that describes that prototype software program in details. Part One of the second volume was written for technical administrators who must understand the program's production to enable them to direct refinement of the prototype. Part Two of the second volume was written for the programmers who will develop the code refinements. The second volume also contains the source code listings for all of this project's programs. A diskette containing all of the program's source code and the executable programs has been sent to the WSF Service Planning Manager at Colman Dock.</p>			
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Final Report
Research Project T9233, Task 31
Automated Vessel Logbooks

AUTOMATED VESSEL LOGS — VOLUME 3:
USER'S GUIDE FOR THE LOG PROTOTYPE

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INTRODUCTION

This document presents a guide to users of the prototype computer aided vessel log system's software programs. This guide comes in two parts. Part one is devoted to the FerryLog program. Part two is devoted to the Combine program. It is the purpose of each part to give users the basic information they need to be able to use these programs. This document assumes that the reader is familiar with the fundamentals of using DOS or Microsoft Windows (3.1 or later) on an IBM Personal Computer or compatible.

The user should understand how to use a mouse or trackball, know how to select an item using a mouse, and understand the basics of opening and closing windows using a mouse. (The terms "mouse" and "trackball" are used interchangeably in this document. The FerryLog program will work with any Microsoft Windows compatible pointing device.) Information on the fundamentals of computer operation, as well as the use of Microsoft Windows can be obtained from a number of books and from training classes offered by the Washington State Department of Transportation.

Additional information on this prototype can be found in the final report for this project. Copies of the report are available from the WSDOT Research Office.

PART ONE: FERRYLOG PROGRAM

PURPOSE

The purpose of the FerryLog program is to acquire from the WSF bridge crews, log information similar to that currently recorded in the traditional WSF paper logbooks. This objective is accomplished by using a graphical users interface that interactively prompts the user for information. The data that are recorded by this program are then sent to WSF operations staff at Colman Dock for analysis and storage.

HOW TO RUN THE FERRYLOG PROGRAM

Due to a minor bug in the prototype FerryLog software, this program should be run under Microsoft Windows, version 3.1 or later, not directly from MS-DOS. This is because on some machines, FerryLog can stop the computer from running properly once the user tries to exit from the program. However, Windows has a facility that enables the user to circumvent this problem. This facility is called the *Terminate Option*, and enables the user to forcibly exit the non-Windows application after it fails to respond to commands. This option is invoked by pressing the CTRL, ALT, and DEL keys, all at the same time¹. For more information, please see the section titled How To Quit the Program, as well as the *Microsoft Windows 3.1 Users Guide*.

To start the program under Windows, double click on the FerryLog icon². This will start the program. Under Windows, the program should fill the entire screen. If the

¹ Note that under MS-DOS, the CTRL+ALT+DEL combination will reboot the computer. Under Windows (3.1), this does not happen. Instead, a screen will appear asking if the program should be terminated. If CTRL+ALT+DEL is entered a second time, the machine will reboot.

² If this icon is absent, you should either set one up, or get the administrator of the computer system to do it for you. If you do it yourself, just remember that the program that you want the icon to start is **FRRYLOG.BAT**, not the **FERRYLOG.EXE** file. The batch file will execute the **FERRYLOG.EXE** file.

program looks like it is running in a window (i.e., it fills only part of the computer screen), use the Windows command to run it on the full screen (press the ALT and Enter keys at the same time.) Without this option being set properly, the mouse/tracball won't work correctly.

The first thing that you will need to do is to confirm or change the date and time of the computer. You do this in response to the query by the machine. This query is shown below:

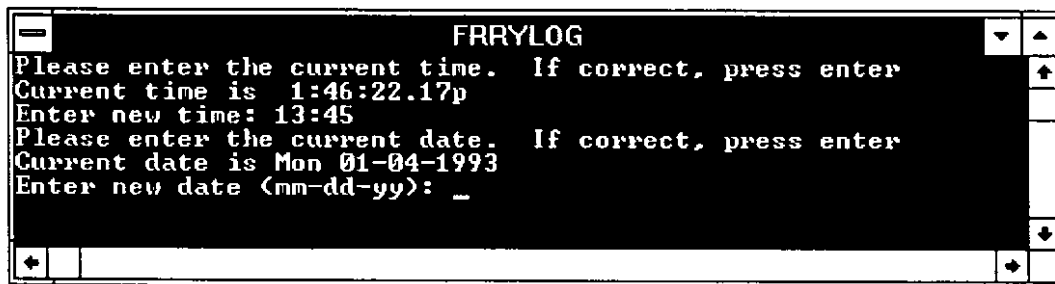


Figure 1

If the date or time is incorrect, enter the correct date and time using the keyboard on the computer. If these are correct, simply press the ENTER key. Now that these preliminaries are out of the way, the principal part of the FerryLog program will begin. Before describing how to use this program, a few terms and concepts will be introduced.

FERRYLOG PROGRAM TERMS AND CONCEPTS

The most important concept for using the FerryLog program is the concept of a *view*. A view is a framed part of the screen with various graphical elements in it that either ask for, or provide, information. For example there are views that ask for information about the tides and the weather, and views that tell whether the printer should be on but is not, or that indicate that a disk should be inserted into the floppy disk drive.

There are two types of views: locked and unlocked. Most of the views that you will encounter are unlocked. With unlocked views, you can move them, close them, or work with several at a time. With locked views, you must do something with that view before you can go on to some other part of the FerryLog program. Locked and unlocked

views can usually be distinguished by their appearance, and always by their behavior and the context in which they appear. Unlocked views usually have a small box in the upper left hand corner, which if you click on with a mouse, you can close (more on that later). Locked views usually lack this feature. You can tell for sure if a view is locked, if it will not allow additional views to be brought on to the screen.

Another term you need to know is *field*. A field is anything in a view that you can push, select, or enter data into. Buttons (the circled items on the screen that you use a mouse to select) and input lines for text, along with check boxes are the most common fields.

You also need to know what is meant by the term *active*. Both views and fields need to be active before you can use them. An active view can be distinguished by its position and appearance. A view that is active can not be partly or completely covered by another view. It will also have a double line frame around it. An inactive view will have a single line frame. An active field will have a different appearance than those around it as well. Depending on the type of field, the active field might be highlighted, have markers (») around it, or blink.

In the below example, the view with the title of Movement is active, and the view with the title Drills is inactive. In the Movement view, the button (a field) labeled Departure is active, while all the others are inactive.

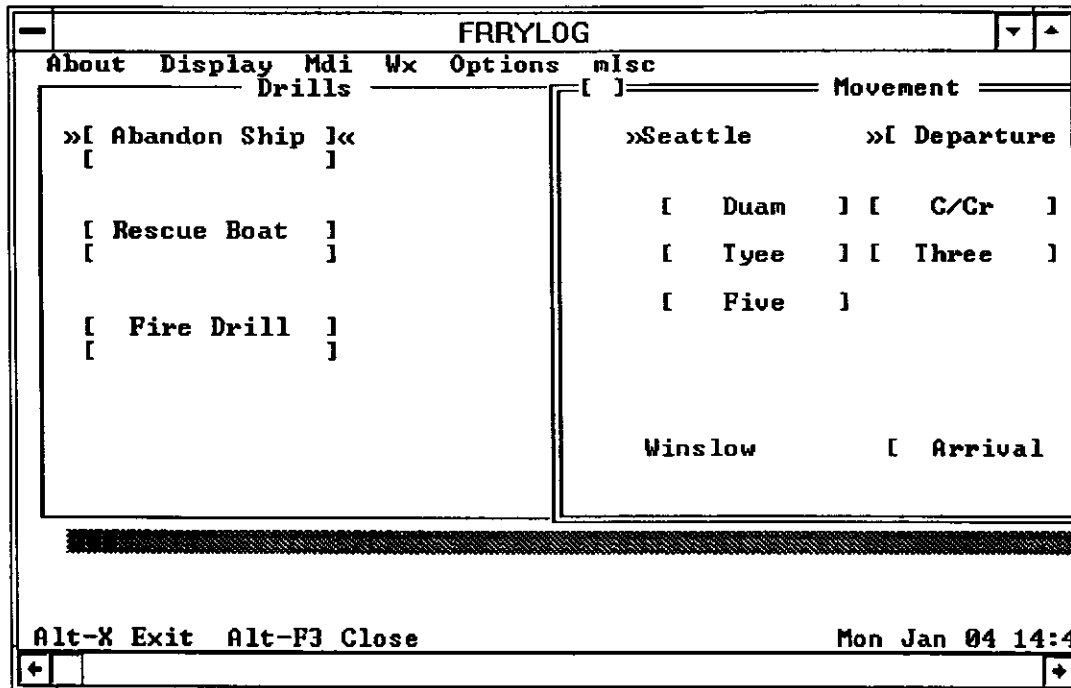


Figure 2

A field can be made active by using the mouse, or by using the tab key. If you use the mouse, simply position the pointer over the desired field and press the mouse button. If you use the tab key, simply press the key until the desired field becomes active, and then press RETURN.

The last term that you need to know about is *phase*. There are two phases to the FerryLog program. The first phase is the setup phase. In this phase, views appear automatically so that crucial information about the crew, vessel, watch, and other information can be entered. This occurs at the beginning of the program, and once this information is properly entered, phase one will not recur during the session. Phase two begins immediately after the end of phase one, and lasts until the end of the FerryLog session when you exit from the program. It is during this second phase that information that needs to be input more than once is entered. This information includes arrival, departure, and checkpoint locations and times, weather, drills, and incidents.

PHASE ONE

In phase one, you will be prompted to record information about your current session. This information includes:

- the name of the vessel that you are on,
- the name of your watch,
- the names of your crew,
- the route that you are on,
- information about the tides, and
- what the departure and arrival locations are for your current wheelhouse.

To record this information, all you need to do is to select the appropriate field using the mouse or keyboard. If the field is a button, pressing the button with the pointer will cause the information represented by that button to be recorded and the view will be replaced by the next view in the sequence. If the field is an input line, type the information you want in the field and go to the next field in the view. Once you are finished with a view that contains input fields, select the "Done" button for that view with the mouse.

The last view of phase one is reproduced in figure 3.

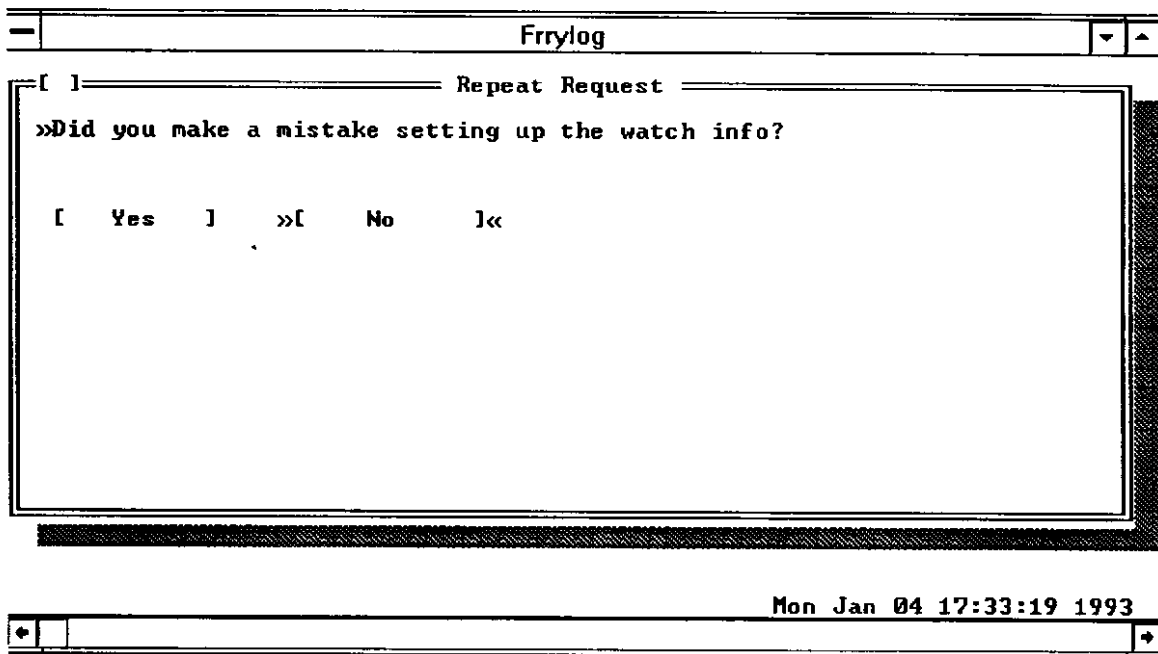


Figure 3

If you select the "Yes" button in Figure 3, phase one will be repeated so that the correct information can be entered. If you select the "No" button, phase one will end and phase two will begin.

PHASE TWO

Once you begin phase two, views will no longer pop up automatically. Instead, you need to "pull up" the views you want using the keyboard or the mouse. In order to do this, you need to know how the screen is arranged.

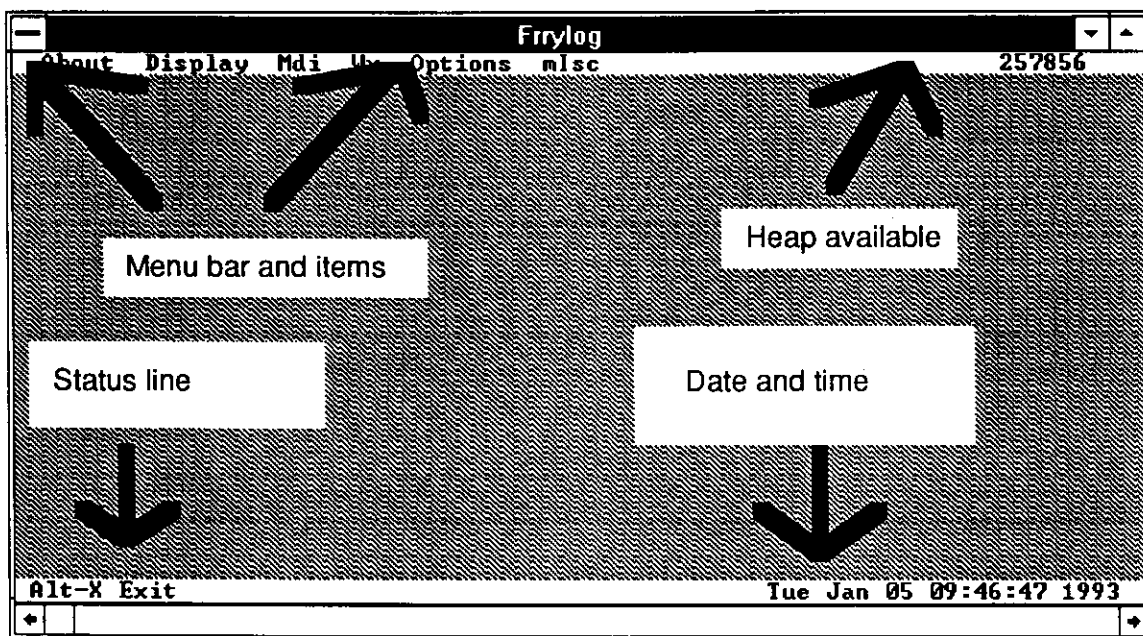


Figure 4

In figure 4, the primary elements of the Phase two screen are illustrated. These elements are: Menu Bar, Date and Time, Status Line, and Heap Available. The Heap Available field is useful only to a programmer diagnosing a problem, and so it won't be discussed further. However, if the Heap available number becomes less than 1000, you should close all your open views, and then open only the views you absolutely need. The Date and Time field is for your handy reference, but has no other function. The Status Line field reminds you how to close a view and how to exit the program. You can close any unlocked view by clicking on the area of the Status Line where it says "Alt-F3 close". Or,

you can press the Alt and the F3 keys at the same time to close the view. As mentioned earlier, an unlocked view can be closed by moving the mouse cursor to the small close box in the upper left hand corner of the view and pressing the mouse button. This button is highlighted in Figure 5.

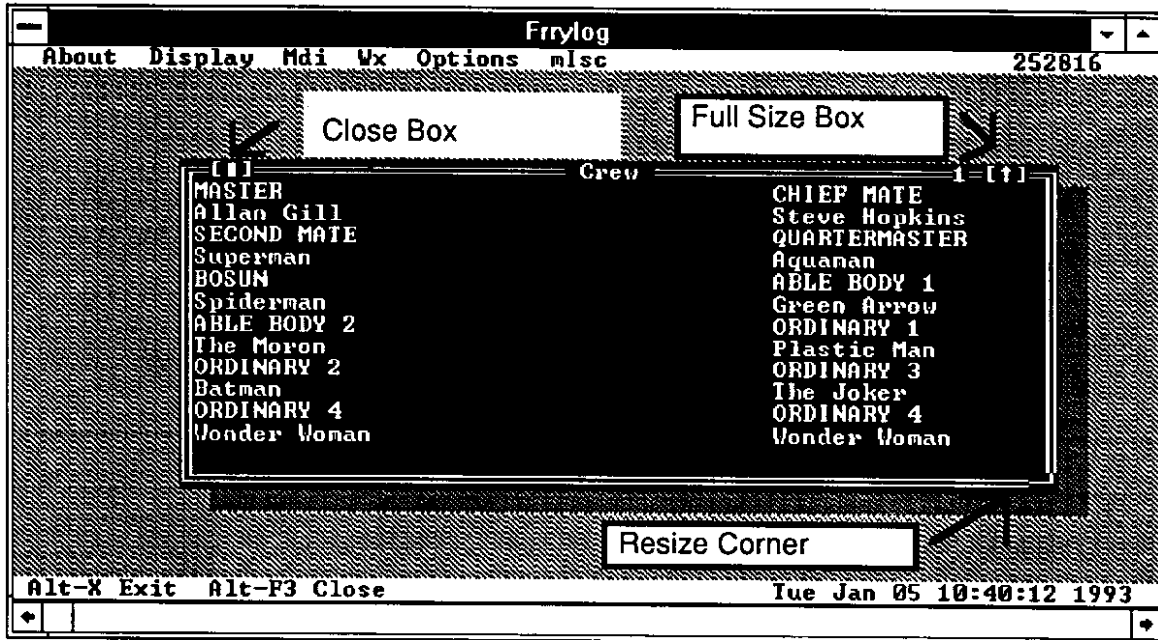


Figure 5

To be able to get these views on to the screen so that you can work with them, you need to interact with the menu bar. There are six categories on the menu bar that you can select from. Selecting any of these items will bring up a sub menu of more items to choose from. An example of this is shown in Figure 6. In order to get this sub menu to appear on the screen, you can use either the mouse or the keyboard. If you use the mouse, position the mouse pointer over the menu category of interested, then press the mouse button. In Figure 6, I chose the Display category as an example. If you use the keyboard, just press the capitalized letter that is associated with that menu selection and the ALT key at the same time. In our example, the ALT and "D" keys pressed at the same time brings up the submenu for the display category.

Once you see the submenu items, you can choose from them in a like manner. To choose using the mouse, just position the pointer over the item you want and press the

mouse button. To use the keyboard, press the function key shown on the right side of the sub menu. Alternatively, you can use the arrow keys to move the highlight bar up and down the list. Once the item of interest is highlighted, press the ENTER key. In the example in Figure 6, the F2 function key has been used to select an item. The ensuing view is similar to Figure 5, only smaller.

There is a shortcut for bringing up views. If you know the correct function key for the view that you want, you can get that view simply by pressing the appropriate function key. This saves the time of going through the menu to bring up the desired view.

The selected view can be enlarged using the mouse. To do this, position the mouse pointer on the lower right corner of the view, press the mouse button, *and while holding the mouse button down*, drag the view to the size that you want. Not all unlocked views can be resized. Only the Tides, Crew, and the Log View views can be resized.

Views can also be moved around the screen. To move a view, place the mouse pointer over the title of the view that you want to move, press the mouse button, *and while holding the mouse button down*, move the view to a new position.

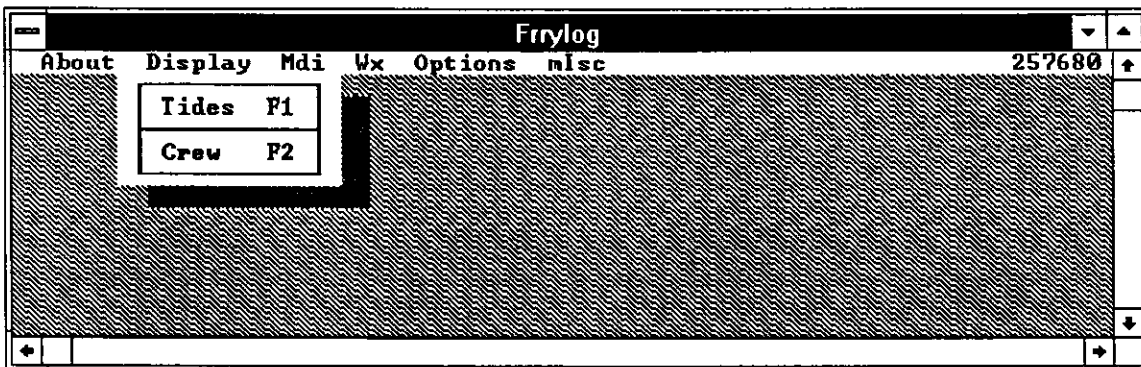


Figure 6

If two (or more) views should overlap, as in figure 7, and you wish to use a view that is not active, there are several things you can do. You can make the view that you want active simply by moving the mouse pointer to the view that you want to make active and pressing the mouse button. If a view that you wish to use is buried beneath other views, you can move the blocking views out of the way, or you can select the view that

you want from the Menu bar, and that view will come to the top. Taking figure 7 as an example, the Weather view is in front of the Movement view, blocking its use. If the mouse cursor is maneuvered to the title of the Movement view (or any other visible portion of it) and the mouse button is pressed, the Movement view will rise to the top, in front of the Weather view.

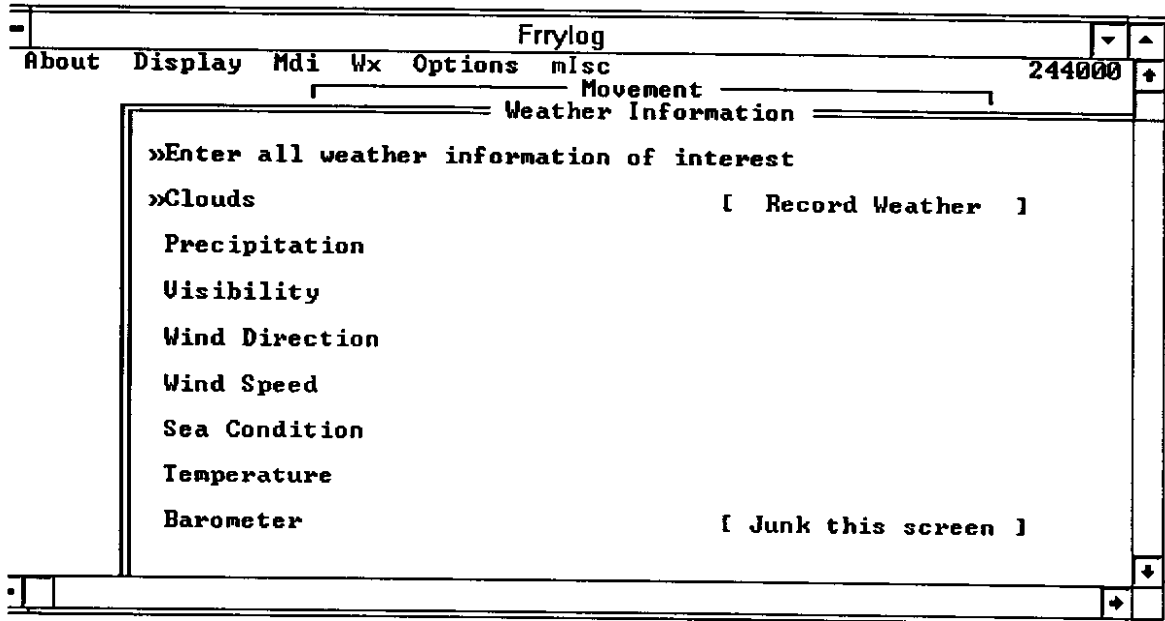


Figure 7

VIEW FUNCTIONS

About Menu

The About view gives information about the FerryLog program, such as the name of the programmer and the date that it was completed. To close this locked view, press the enter key, use the mouse cursor to click³ the Ok box, or use the "close" box in the upper left corner of the view.

³From here on in, the term click will refer to the action of moving the mouse cursor to the desired location and pressing the mouse button.

Display Menu

Tides View

The Tides view reproduces on the screen the tides information that was input during phase one of the FerryLog program. This unlocked view can be moved and resized. To close this view, click on the close box, the ALT-F3 area of the Status Line, or press ALT and F3 at the same time.

Crew View

The Crew view reproduces on the screen the crew information that was input during Phase one of the FerryLog program. This unlocked view can be moved and resized. To close this view, click on the close box, the ALT-F3 area of the Status Line, or press ALT and F3 at the same time.

MDI Menu

Movement View

The Movement view allows you to input the departure, arrival, and checkpoint times for points on the route that was given in phase one. To record the current time that you reached a particular checkpoint, simply click on the appropriate button, or use the tab key to highlight the correct button, and press the enter key. An example of this view is in Figure 2. Now, please look at figures 8 and 9. Once you click the correct button for your location, a new view will be displayed as in figure 8. To record the time as of that moment, click the Just Now button, or if it is highlighted, just press the Enter key. If you made a mistake and pressed the wrong button on the Movement view, click the "OOps!" button, and you will be returned to the Movement view. If you wish to record a time other than the current time, click the "Earlier" button. You will then see the new view illustrated in Figure 9.

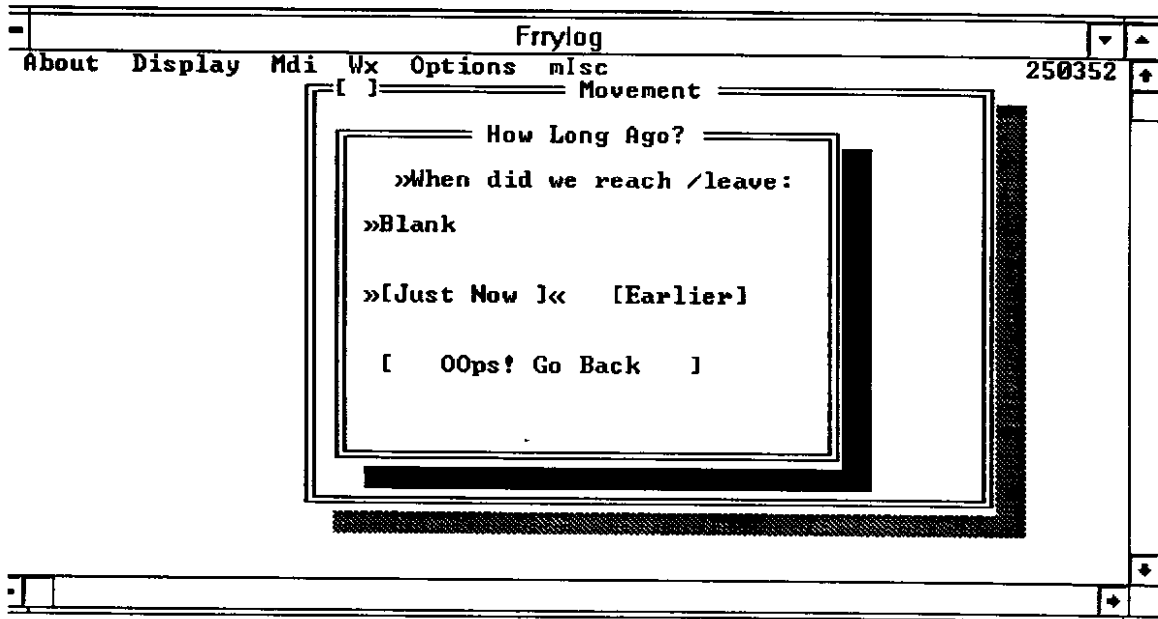


Figure 8

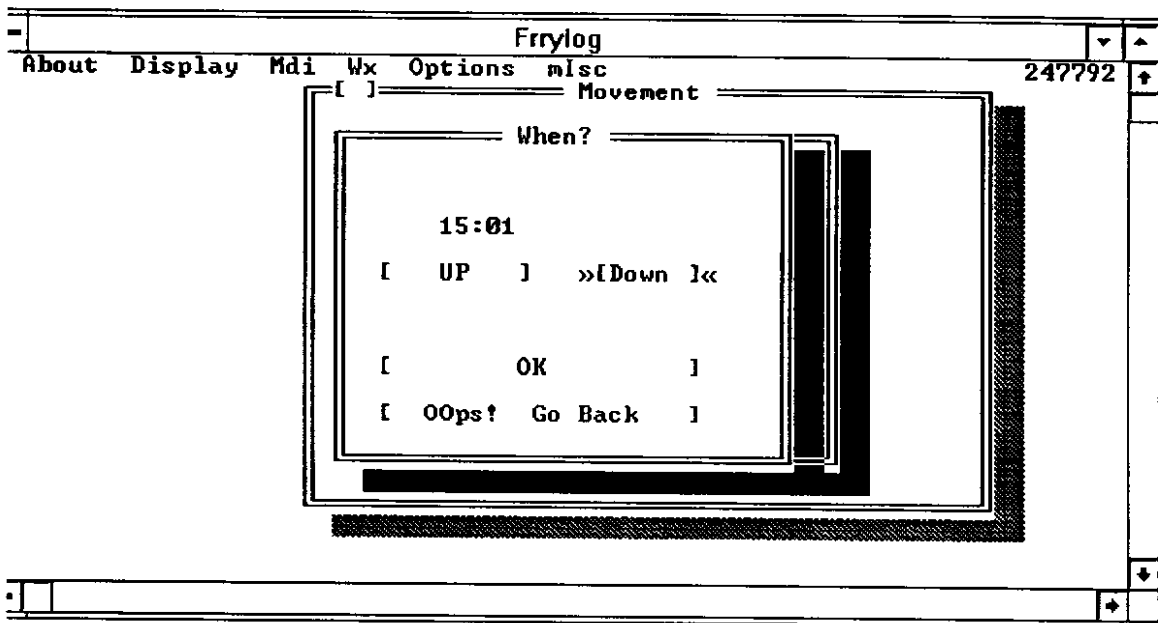


Figure 9

The time that will be recoded is displayed in the top window. To change this time, repeatedly click the mouse in either the Up or Down box to adjust the time as necessary. If you need to change the time by a large amount, you should highlight the correct button using the tab key, and then hold the enter key down until the approximate correct time appears. This is the fastest way to change the time by a large increment (more than 60

minutes). If you make a mistake, you can go back again by clicking on the OOps button. Please note that if you move the time ahead of the current time, you will be asked by the program to confirm this choice.

The Movement view is an unlocked view, but the time entry view is a locked view.

Drills View

The Drills view works in a very similar manner to the Movement view. It enables you to record information about drills that are conducted on board. This information includes the name of the drill (Abandon Ship, Fire, or Rescue Boat), the time of the drill, and a comment. Just click on the button with the name of the drill that you wish to record. A time selection screen will appear, identical to the one that appeared with the Movement drill. After the time of the drill has been recorded, a view will appear that will allow you to enter a comment. An example appears in Figure 10. The comment can be over one hundred characters, and is not limited to the width of the field on the screen. As more characters are typed, the characters will scroll to the left and out of sight, allowing you to see the new letters or numbers that you are typing.

The comment can be edited. Using the arrow keys, the backspace key, and the delete keys, you can move forward and backwards through the comment field you are typing, allowing you to remove and insert characters at will. Once you are finished writing your comment, click on the Ok button, and the information will be recorded. The Drills view is an unlocked view, but the time entry and comment entry views are locked.

Incidents View

The incidents view lets you enter information about incidents that occur on board the vessel. This information includes: time of the incident, type of incident, and a comment about the incident. The operation of this view is nearly identical to that of the Drills view. Simply select the name of the incident that you wish to record, and the time entry view and the comment view will appear as they did in the Drills view. The Incidents view is an unlocked view.

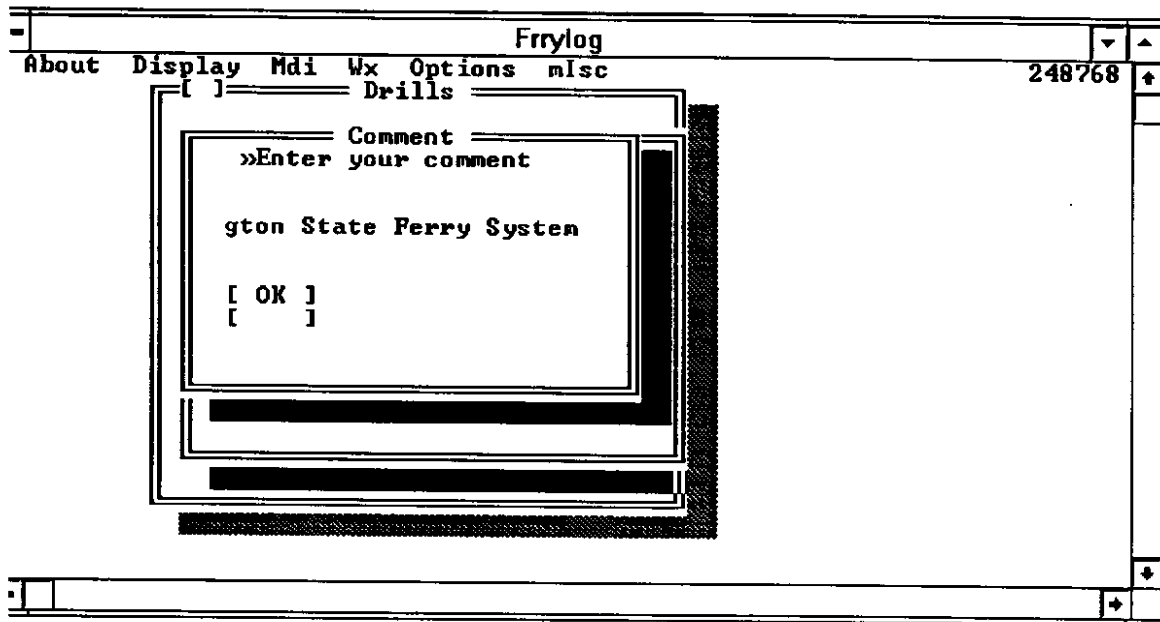


Figure 10

Wx Menu

The Wx Menu brings up the Weather view which allows you to record your observations about the weather. This view is simple to use. Just select the field that you wish to record your observations in, and then type the desired observation. When you are finished recording the weather, click the Record button to store your entries in the log. If you wish to abort entry of the weather, click the Junk button to remove this view without recording any information. The Weather view is an unlocked view.

Options Menu

The options menu currently contains the printer function for the prototype software. The Printer view allows you to select the type of printing that you want to occur. There are two types of printing that can be turned off or on. One is the Print-As-You-Go option. This option causes the program to print out the information that is recorded periodically on the attached printer. The other possible choice is the Final report option. This option causes the program to print out all of the information that has been recorded during the session in a tidy format. It also provides a space for the signatures of the master and mate. These options can be turned off or on by clicking on the boxes next to the labels marked

Off and On. When you are finished setting the options, click the Ok button. If you don't want to make changes to the options, click the Cancel button. This view is locked.

Misc Menu

The Misc Menu currently only provides access to the Logbook information previously stored on the computer. The Log view allows you to see a summary of the information that has been recorded during that session directly on the screen. There are a few limitations in using this view, however. Once the view is on the screen, it only shows the information available up to that time. If more information is recorded, it will not be reflected in a Log Info view that is already on the screen. To be able to see this information, close any Log Info views on the screen, then open a new Log Info view. The new information should be recorded on this screen, if it is available. The availability of information is governed by how much information has been stored. Currently, three or four items must be recorded before it will show up on the Log Info view. If necessary, this can be modified by a programmer during a program revision and improvement. The Log Info view is unlocked, and can be resized and moved.

HOW TO QUIT THE PROGRAM

Quitting the program is quite easy. First, make sure that you have a formatted disk that is not full in floppy drive 'A'. This is because the program is designed to write a file to this drive, and will complain until it has a floppy that it can write on. Next, either click on the Alt X Exit field on the Status Line, or press the ALT and X keys at the same time. This will cause the program to quit. After the program has successfully written its information to the floppy drive, if the Final Report print option is on, the program will print this information out. Sometime during the printing or after the printing has completed, the program will either exit cleanly, and you will return to Microsoft Windows (or the DOS prompt if you were running this program against advice and didn't use Windows) or the status line will be replaced by a new line which may have some unusual characters on the left side, and a message on the right side that says something like "Enter retry Esc Cancel".

If you see this, you need to use the Terminate Option of Microsoft Windows. Press the CTRL, ALT, and Del(ete) keys all at the same time. You will get a message from Windows telling you how to terminate the program that was running (frrylog) and how to restart your computer. When you see this screen, press the ENTER key. Once this step has been completed, you are done with the FerryLog program.

PART TWO: COMBINE PROGRAM

PURPOSE

The purpose of the Combine program is to merge the appropriate files from each wheelhouse of a vessel in the Washington State Ferry system (WSF) into a single file containing the information in a reorganized format for easy interpretation and analysis. The file produced by Combine is a plain ASCII text file, and uses tabs to delimitate fields so that it can be easily viewed and manipulated with a spreadsheet program such as Microsoft's Excel. The Combine program takes all of its information from the command line. This means it must be started from the DOS prompt, and not from Windows. This means that the only information provided to the program by the user is given at the very beginning, when the program is first started.

HOW TO RUN THE COMBINE PROGRAM

Running the Combine program is easy. All you need to do is type the following at the DOS prompt (">")⁴:

```
cmbine infile1 infile2 outfile
```

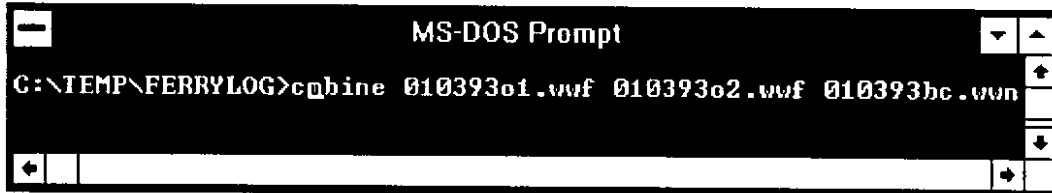
Where *infile1* is the name of the file from wheelhouse #1,

infile2 is the name of the file from wheelhouse #2, and

outfile is the name of the file that you wish to create.

⁴While the name of the program is **COMBINE.EXE**, the name of the batch file needed to run it properly is **CMBINE.BAT**. So you need to type the name of the batch file instead of the executable file. See the section *Why a Batch File*.

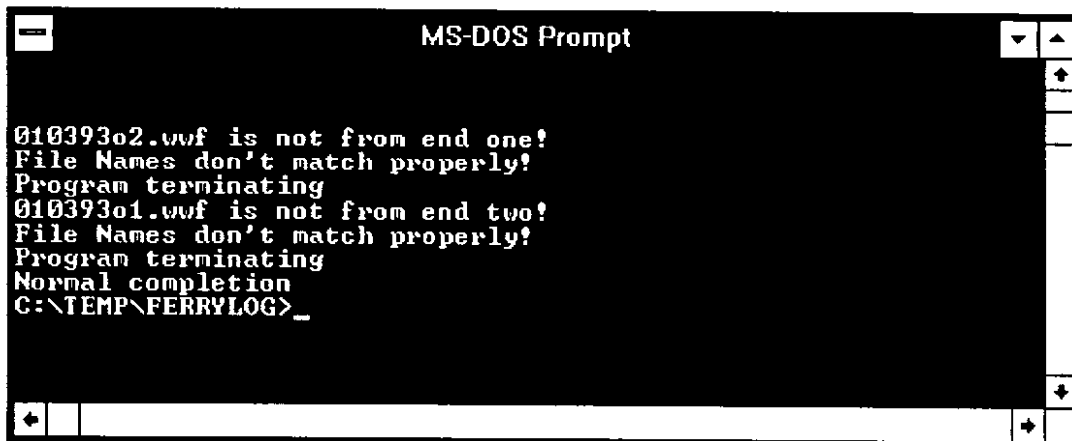
For example, if we want to create a file called 010393BC.WWN from files created on the wheelhouses of the MV *Walla Walla* that were named 010393O1.WWF and 010393O2.WWF, we would type:



```
MS-DOS Prompt
C:\TEMP\FERRYLOG>combine 010393o1.wwf 010393o2.wwf 010393bc.wwn
```

Figure 11

Please note that it is important to specify the wheelhouse files in order. The file from end number one must be specified before the file from end number two. If you don't do this, the program will report an error and terminate, like this:



```
MS-DOS Prompt
010393o2.wwf is not from end one!
File Names don't match properly!
Program terminating
010393o1.wwf is not from end two!
File Names don't match properly!
Program terminating
Normal completion
C:\TEMP\FERRYLOG>_
```

Figure 12

The Combine program also checks to make sure that the two files are from the same vessel but not from the same wheelhouse, that the routes given in each of the files is the same, and that the files were created within 24 hours of each other. Some of these validity checks are made by examining the file names given the Combine program. Thus it is important that care is given to the file names given to the Combine program to analyze at any one time.

The file names of the wheelhouse data files that are required to make the Combine program work properly are created automatically by the FerryLog program. These file names follow the following format:

MMDDYYHE.VVC

Where M is month

D is day

Y is year

H is hour or increment number (A-X, 0-9)

E is the end number(0,1, or 2)

VV is the two letter vessel abbreviation

C is the file code type.(T or U for temporary file, F or G for final file)

The FerryLog program will first try to write a file based on the date and time using the temporary code, T. The hour field is determined by the hour of the day on a 24 hour clock (00:23 is A, 03:00 is D, 13:45 is N, etc.). If a file with the intended name exists, the program will instead try to write a file using a name where the T is changed to a U, and the hour number becomes the numeral 0. If this file already exists, then the program will try to write a file using the numeral 1 for the hour code, and so on. At the end of the shift when all information is contained in the temporary file, the program will then attempt to write another copy to the hard drive and the floppy disk using the same scheme, except using F or G as the file code type. For example, a temporary file started at noon on Christmas day in the number one wheel house on the Walla Walla would be named 122592M1.WWT, while the final copy of this file would be named 122592M1.WWF. If these files already existed, then the first attempt names would be 12259201.WWU and 12259201.WWG. Second attempt names would be 12259211.WWU and 12259211.WWG, and so on.

WHY A BATCH FILE

The Combine program should be used with a simple batch program such as CMBINE.BAT. This is because of an idiosyncrasy of the prototype Combine program. Using a batch file insures that the user will be able to see any error messages that the program generates. If a batch file is not used, the error messages will be erased from the screen before the user has a chance to see them. Here is what CMBINE.BAT looks like:

```
rem combine batch file

combine %1 %2 %3 > combout.out

type combout.out

del combout.out
```