Status Computer PC Interface Program

Table of Contents

1.0   Zeagle Status Computer PC Interface

Zeagle's Status PC Interface allows a diver to maintain a divelog on their PC and to enter data into the divelog from their Status Computer as well as manually. In addition, a Simulator is provided to enable a diver to plan future dives.

1.1   Features

The PC Interface has all the capabilities necessary to maintain a complete and detailed divelog of all your dives, as well as special features for planning dives.
- Divelog - Detailed information about each dive is stored and organized into trips and days within each trip.
- Data entry from Status Computer or manually - Dive information may be downloaded into the PC from a Status Computer via the hardware reader or entered manually. Includes a reader and cable to interconnect the Zeagle dive computer with your PC.
- Simulator - A powerful simulator is provided to allow a diver to plan future dives. A diver uses the PC mouse to enter depth versus time information. The effects to body tissues both during and after the dive are presented graphically.
- Multiple Users - The software can maintain a divelog for any number of users, limited only by disk space.
- Multiple Languages - The software may be run with a choice of several languages including English, German, Finnish, and Swedish.

2.0   Installation

This chapter describes the PC computer system requirements for running the PC Interface program, as well as the installation and startup instructions.
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2.1   PC System Requirements

1. Computer - an IBM PC compatible with at least a 386sx or compatible processor. Microsoft Windows version 3.1 or later, a hard disk, and a floppy disk drive.
2. Hard disk space - To install the PC Interface program you will need 2MB of space available on your hard drive.
3. Pointing Device - A mouse or other Windows supported drawing device.
4. Monitor - A monitor must be capable of displaying VGA or better graphics when running Windows.

2.2   General Installation Information

The PC Interface program comes on a 31/2" floppy disk. There are several files on the disk including MRSETUP.EXE.

2.3   Installing for Window 3.1

1. Place the original diskette in the floppy drive.
2. Go to the FILE MANAGER in Windows and run the MRSETUP.EXE program from your floppy drive.
3. Continue Installation instructions in Section 2.5.

2.4   Installing for Window 95

1. Place the original diskette in the floppy drive.
2. Click the START button on the Taskbar.
3. Select RUN from the menu.
4. Type A:\MRSETUP.EXE (or B:\MRSETUP.EXE)   .
5. Continue Installation instructions in Section 2.5.

2.5   Completing Installation for Windows 3.1 and Window 95

1. Upon starting the Mrsetup.exe file, a window titled User Information will appear. Type in the owner's name and company name(if applicable). Click the Continue button to proceed. This information will be written on the hard disk as well as the installation floppy disk. If you try to install subsequent times this window will not appear again. See Section 2.6 on installing on multiple computers.
2. The window titled Bene Setup will appear. A folder named BENE will be created to include the program files. You may edit the folder name if you like.
3. Click the Install button to proceed. Another window titled Bene Setup will appear and show the files being installed in the program folder. You may abort this process by clicking on the Exit Setup button.
4. You will get a message that the program has installed successfully.
5. After a successful installation, the program folder will contain all the files necessary to run the program.

2.6   Installing On Multiple Computers

The original installation disk can be used for unlimited installations. On subsequent installs, the installation will begin with step 2 in Section 2.5 after the Mrsetup.exe program is started. During the first installation, the owners information and the computer information are written to the hard disk and cannot be changed. If the program is copied to another computer without the installation disk, only the logbook functions will be available.

Note: The program is copy protected. If it is copied to another computer, the Report and Simulator functions will not work. The installation disk or a copy of it must be used to install the program on different computers.

3.0　Starting Up the Program

The program is started by double clicking on the program icon. The associated program file is named Dive.exe and is located in the program folder which was created during installation. Unless you changed the name, the program folder will be named BENE. Once the program has started, a window will appear titled Main Menu. From this window you can access all the functions of the PC Interface software. The features of the PC Interface are organized and described below in terms of the windows that appear on the monitor.

3.1　Main Menu Window

The Main Menu window is the first window that is shown after the program is started. This window is shown in Figure 3.1 below. From this window you can access all of the features of the interface software. The owner of the software is displayed in the center of the window. The User name field is used for entering new users and selecting existing ones. A choice of four languages is available with the buttons at the bottom of the window. Access to the four main features is available with the Setup, Data, Report, and Simulate buttons along the left side of the window. The Help button provides on-line help for using the program, and the Exit button will exit the program.

Setup Button
Clicking the Setup button will open the Setup Window for the user showing in the User Name field on the Main Menu Window. If there is no name showing in the field, the Setup button will be disabled. See Section 4 for using this feature.

Data Button
Clicking the Data button will open the Data Window for the user showing in the User Name field on the Main Menu Window. If there is no name showing in the field, the Data button will be disabled. The Data Window allows the user to download data from their dive computer or enter information about dives manually. See Section 5 for using this feature.

Report Button
Clicking the Report button will open the Choose Report Window for the user showing in the User Name field on the Main Menu Window. If there is no name showing in the field, the Data button will be disabled. From this window the user can select from a variety of formats to view and print their divelog data. See Section 6 for using this feature.

Simulate Button
Clicking the simulate button will open the Simulator Window for the user showing in the User Name field on the Main Menu Window. If there is no name showing in the field, the Data button will be disabled. This function allows the diver to plan future dives by entering a dive profile and evaluating tissue situation both during and after the simulated dive. It also includes a calculator for air consumption to aid in planning dives. See Section 7 for using this feature.

Help Button
A HELP button is included on every window and provides help information appropriate to that window.

Exit Button
The Exit button exits the PC Interface program.
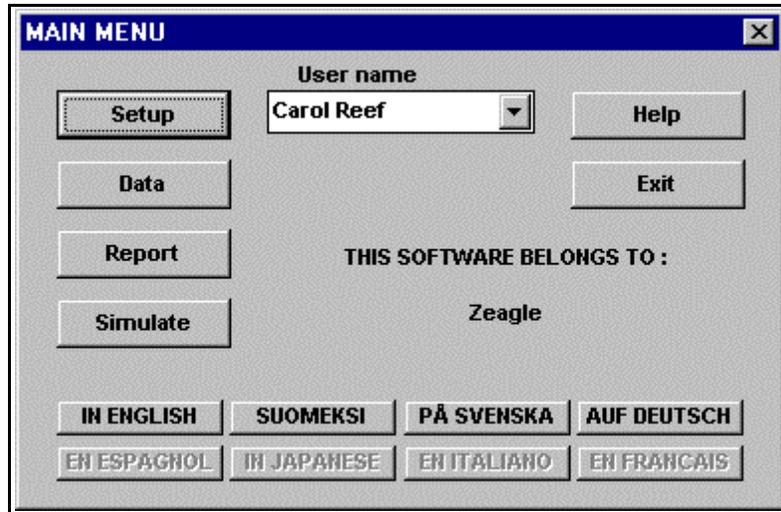
Figure 3.1 Main Menu

4.0   Users

Divelog data is stored in a separate database file for each user name. Data can be stored for an unlimited number of users, subject to the storage capacity of your hard drive. The program associates a user name with the serial number of the dive computer. Each diver should have their own user name. It is also possible to use different user names for the same diver who will be using multiple dive computers. In addition, you can have multiple divers with different user names who use the same dive computer.

4.1   Creating a New User Name

A new user name can be entered by typing the new name in the User Name field at the top of the Main Menu window. If the field already has a User Name in it, simply select all of the text in the field and type in the new name. To actually create a log for the User Name requires that basic user information be entered in the Setup Window, which is accessed by clicking the Setup button. See Section 4.4 for entering this data. Once this data is entered and saved the program will create four file from the first 8 digits of your user name. the names of the files are: username.~b1, username.~b2, username.db1, and username.db2. If you want to transfer your files to another computer, make sure you copy all four of your files.

Note: It is important that all necessary information be entered before further use so that the divelog will be accurate. See Section 4.4 for entering this data. User names need to be unique, that is, the first 8 digits of each user name should not be the same.

4.2   Selecting a User Name

An alphabetical list of all the available user names is shown by clicking the arrow at the right edge of the User Name field. To select a name from the list, position the cursor over the desired name and click the left button of the mouse. The selected user name will appear in the User Name field. Any functions accessed after selection will pertain to the selected user.

4.3   Deleting a User

The only way to delete a user is to remove the database files for that user from the folder which contains the program file. Ther are four files associated with each user: Username.~b1, Username.~b2, Username.db1, and Username.db2.

4.4   Setup Window

The Setup window is accessed from the Main Menu window by clicking the Setup button. The Setup window applies to the user shown in the User Name field in the Main Menu window. The Setup window is used to enter information about a user and his/her dive computer, as well as setting preferences for units of measurement and date formats.

Close Button

Warning: You must click the Close button to save any additions or changes to the information in the Setup window. If you use just the close box at the top right of the screen, any newly entered data will be lost.

4.4.1   Entering data and preferences for a new user

To maintain an accurate divelog for a user, you should complete the following fields:
1. Computer nr - enter the serial number of the dive computer
2. Dives read - enter the oldest dive number from the dive computer
3. Max depth - enter the maximum depth from the user's previous log books
4. Dives made - enter the number of dives you have made from the user's previous log books
5. Logged hrs - enter the number of diving hours you have logged from the user's previous log books

Each time data is entered into the user's dive log from the dive computer, these fields will be updated automatically. If any fields are left blank, the program will assume that the starting value is zero.

You can use the radio buttons on the setup screen to indicate which units you would prefer.

Diver Button
Clicking on this button will open the Diver Info window for entering user personal data. See Section 4.4 for entering this data.

Status nr Field
Enter the serial number of the user's dive computer in this editable field. If a user changes dive computers at a later time, enter the new serial number here for that user and edit the Dives read field to reflect the number of the last dive transferred from the new computer. See the description in the next paragraph on the Dives read Field.

Dives read Field
This field displays the number of the oldest dive read from the user's dive computer. This field should be initialized by the user when the user is first created. This is done by checking the number of the oldest dive in the user's dive computer (Mem - mode) and typing that

number in the field. The program will automatically update this field each time data is read from the user's dive computer.

Units of Measure
The Setup window gives the user the ability to select which units of measure he/she would like to work in for temperature, distance, pressure, and volume. Select the units you prefer by clicking the appropriate buttons.

Max depth Field
The Max depth field shows the maximum depth a diver has reached based on data read from his/her dive computer. If you have entered in dives manually, the depth from those dives will not affect this value, but will affect the value of the Max depth field in the Diver Info window. See Section 4.4 for a description of this window. This field should be initialized when the user is created. If the field is left blank initially, the program will assume a zero value. This field is automatically updated when data is read from the dive computer.

Note: The number must be entered with a decimal point and one or two numbers to the right of the decimal point, such as 125.0 or 125.25.

Dives made Field
The Dives made field shows the total number of dives the user has made based on data read from his/her dive computer. If you have entered in dives manually, the depth from those dives will not affect this value, but will affect the value of the Logged dives field in the Diver Info window. See Section 4.4 for a description of this window. This field should be initialized when the user is created. If the field is left blank initially, the program will assume a zero value. This field is automatically updated when data is read from the dive computer.

Logged hrs Field
The Logged hrs field shows the total number of hours the user has logged based on data read from his/her dive computer. If you have entered in dives manually, the depth from those dives will not affect this value, but will affect the value of the Logged hrs field in the Diver Info window. See Section 4.4 for a description of this window. This field should be initialized when the user is created. If the field is left blank initially, the program will assume a zero value. This field is automatically updated when data is read from the dive computer.

Com 1 - 4 Buttons
Select the appropriate Com Port to be used for the transfer of data from the dive computer to the PC Interface program. The most common ports are Com1 and Com2.

Calendar Format Buttons
Select the desired format for calendar information. This format will be used for both calendar entry and display.

Warning: The program only checks date formatting, not date validation. Enter your dates carefully!

Print A5 size reports Button
Click this button if you wish to have your reports printed on A5 size paper.

Help Button
Click this button if you need help using this window.

4.4   *Diver Info Window*

The Diver Info window is opened by clicking the Diver button on the Setup window. This window includes fields for entering personal information about a user. In addition, there are fields for entering general comments as well as comments on special dives and dive trips.

OK Button
Click the OK button to return to the Setup window and **save** any new or changed data in this window.

Cancel Button
Click the Cancel button to return to the Setup window **without** saving any new or changed data in this window.

Personal Information Fields
These fields are used to store personal information about a user and can be edited at any time.

They include:
1. Name - diver's name as opposed to their user name
2. Address
3. Telephone
4. Closest relative
5. Diveclub
6. Special Training
7. Date of birth - enter data in format specified in the Setup window
8. Blood group - click the arrow at the right edge of the field to see a list of possible choices. Click the appropriate item in the list.
9. Physical Condition - click the arrow at the right edge of the field to see a list of possible choices. Click the appropriate item in the list.

Dive History Summary Fields
These fields display the diver's number of logged dives, the number of logged hours, and the maximum depth reached for all the dives in the divelog. These fields are not editable.

Comment Field
This scrollable field can be used to enter any information the user wants.

Special dives made Field
This scrollable field can be used to enter information about a user's special dives.

Special dive sites visited or trips made Field

This scrollable field can be used to enter information about special dive sites a user has visited or special trips made.

5.0   Adding and Editing Data in the Divelog Program

This section describes how to add new dives to your divelog and edit or delete existing dives. New dives can be entered either manually or downloaded from your Zeagle dive computer using the hardware reader. To enter this mode, click the Data button in the Main Menu window. This will open the Data window.

5.1   Data Window

This window is accessed from the Main Menu window by clicking the Data button. From this window the user can enter new data into his/her divelog. The new data can be transferred from the dive computer or entered manually.

Data transfer for divelog Button
Click this button to transfer data to the divelog from the user's dive computer. After clicking, the window shown in Figure 5.5 and titled From Computer will appear. See Section 5.5 for instructions on transferring data from the dive computer..

Trips Button
Click this button to add or edit trip information.

Days Button
Click this button to add or edit day information.

Dives Button
Click this button to add or edit dive information.

Close Button
Click this button to return to the Main Menu window.

Help Button
Click this button to get help information about this window.

5.2   Adding and Editing Trips

Click the Trips button in the Data window to add or edit trip information. The window titled Update Trips will be displayed after clicking this button. The window will show a list of all the dives which are currently in the divelog. See Figure 5.1 below. In this example there are 2 trips. The list also shows for each trip: the number of dives made, the total dive time, and the beginning date.
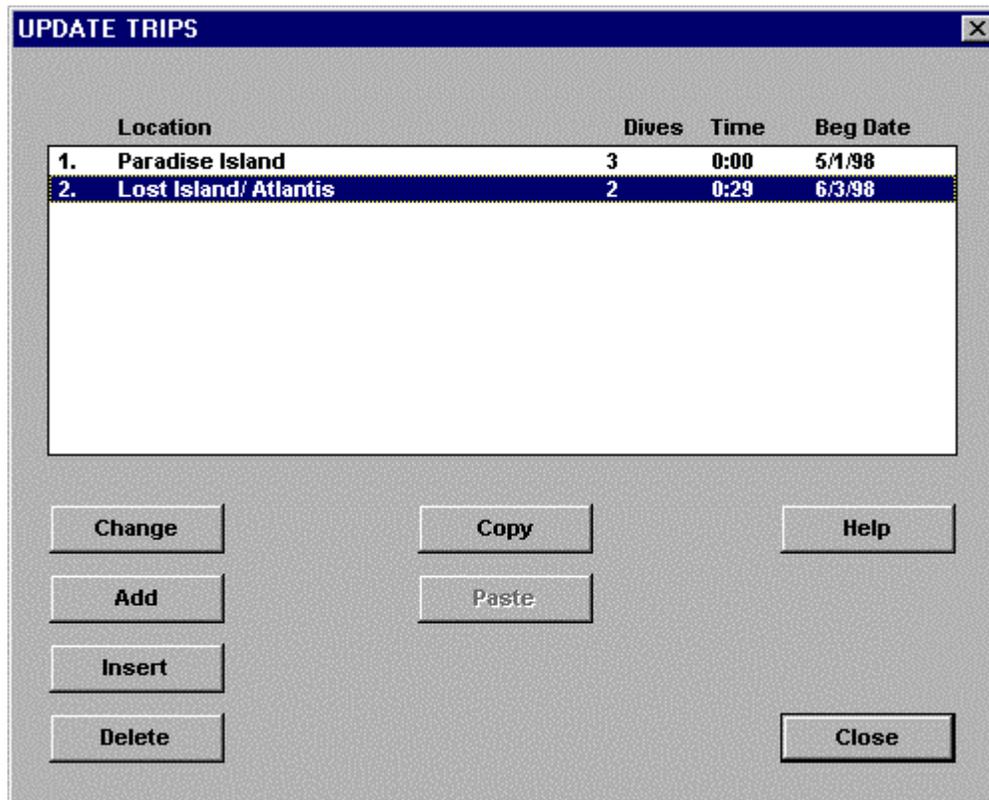
Figure 5.1 Update Trips

5.2.1   How to view or modify Trip information (Trip Info Window)

Select the desired trip in the list and click the Change button. The Trip Info window will be displayed. After making any changes, click the OK button to save the new data and return to the Update Trips window. If you are just viewing the data or do not want to save any changes, click the Cancel button to return to the Update Trips window. Trip information includes the trip location, the beginning date, and a scrollable field for comments.

5.2.2   How to add a new trip

Click the Add button to add a new trip. The Trip Info window will open and you can enter your new information. Use the OK button to save your data and return to the Update Trips window. Click the Cancel button if you decide not to save your data and return to the Update Trips window. If you have saved your new trip information, the list in the Update Trips window will display your new trip as the last trip.

5.2.3   How to insert a new trip

A new trip can be inserted in the divelog by selecting a trip from the list which you want to come after the inserted one. After selecting the appropriate trip, click the Insert button. The Trip Info window will open and you can enter your new information. Use the OK button to save your data and return to the Update Trips window. Click the Cancel button if you decide not to save your data and return to the Update Trips window. If you have saved your new trip information, the list in the Update Trips window will display your new trip.

5.2.4   How to delete a trip

You may delete a trip by selecting the trip to be deleted and clicking the Delete button. A Delete window will open asking you to be sure whether you want to delete the trip. Answer either yes or no by clicking either the OK or Cancel buttons respectively.

Warning: Deleting a trip will delete all of the days and dives recorded in that trip.

5.2.5   How to copy and paste a trip

You may copy a trip by selecting the trip from the list to be copied and clicking the Copy button. The paste button will now be enabled. To paste the copied trip into the list, select a trip from the list. Clicking the Paste button will insert the copied trip before the selected trip. All of the days and dives associated with a trip will also be copied.

5.3   Adding and Editing Days

Click the Days button in the Data window to add or edit day information. The window titled Update Days will be displayed after clicking this button. The window will show a list of all the days which are in a selected trip. Use the Select trip button to select the desired trip. See Figure 5.2 below. In this example there are 2 days. The list also shows for each day the number of dives made, the total dive time, and date.
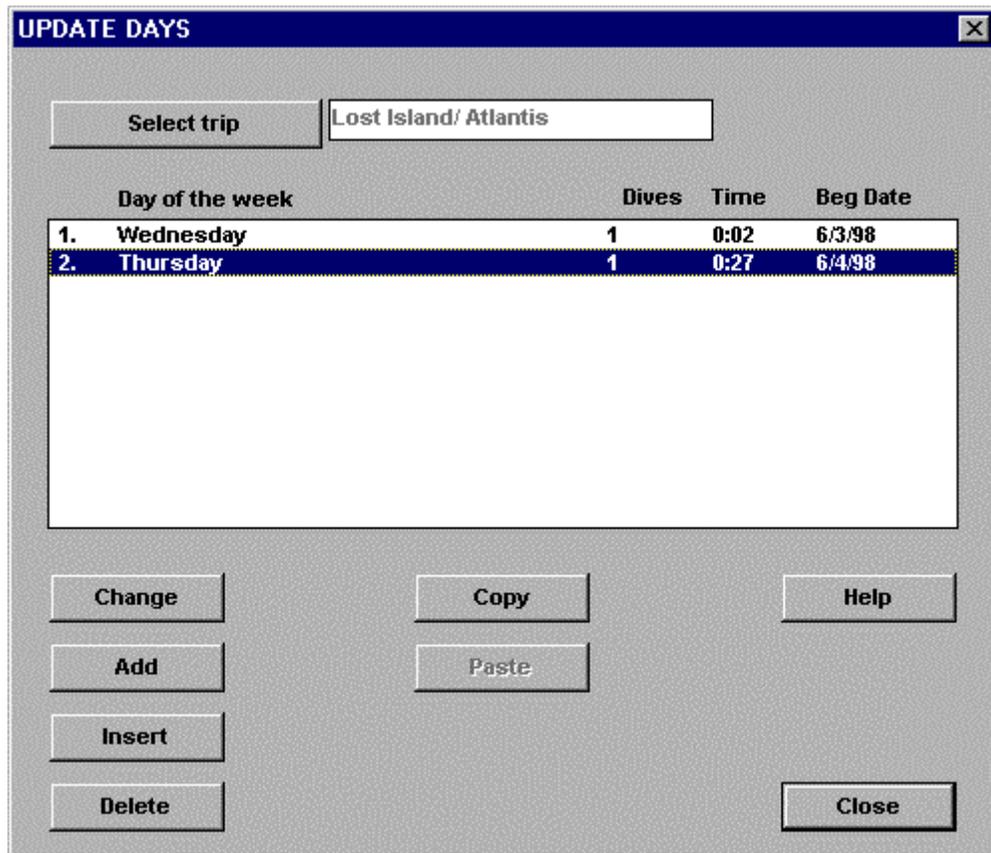
Figure 5.2 Update Days

5.3.1   How to select a Trip

Click the Select trip button in the Update Days window to select a trip. The Choose Trip window will open showing a list of trips in the divelog. Select the trip you want to view and click the close button. That trip name will appear in the trip field in the Update Days window to the right of the Select Trip button. All of the days associated with the trip will be displayed in the list. If you haven't entered the trip yet, you can add a new trip from the Choose Trip window by clicking the Add button. this will bring up the Trip Info window into which you can type in the trip information. Click the OK button to save this new trip information. The new trip will be added to the bottom of the list of trips in the Choose Trip window.

5.3.2   How to view or modify Day information (Day Info Window)

Select the desired day in the list and click the Change button. The Day Info window will be displayed. After making any changes, click the OK button to save the new data and return to the Update Days window. If you are just viewing the data or do not want to save any changes, click the Cancel button to return to the Update Days window. Day information includes the day of the week, the date, and a scrollable field for comments.

5.3.3   How to add a new day

Click the Add button to add a new day. The Day Info window will open and you can enter your new information. Use the OK button to save your data and return to the Update Days window. Click the Cancel button if you decide not to save your data and return to the Update Days window. If you have saved your new day information, the list in the Update Days window will display your new day as the last day in the trip.

5.3.4   How to insert a new day

A new day can be inserted before an existing day in the divelog. Select a day from the list and click the Insert button. The Day Info window will open and you can enter your new information. Use the OK button to save your data and return to the Update Days window. Click the Cancel button if you decide not to save your data and return to the Update Days window. If you saved your new day information, the list in the Update Days window will display your new day as the day before the one you selected.

5.3.5   How to delete a day

You may delete a day by selecting the day to be deleted and clicking the Delete button. A Delete window will open asking you to be sure whether you want to delete the day. Answer either yes or no by clicking either the OK or Cancel buttons respectively.

**Warning: Deleting a day will delete all of the dives recorded for that day.**

5.3.6   How to copy and paste a day

You may copy a day by selecting the day from the list to be copied and clicking the Copy button. The paste button will now be enabled. To paste the copied day into the list, select a day from the list. Clicking the Paste button will insert the copied day before the selected day. All of the dives associated with a day will also be copied.

5.4   Adding and Editing Dives

Click the Dives button in the Data window to add or edit dive information. The window titled Update Dives will be displayed after clicking this button. The window will show a list of all the dives which are in a selected trip and day. See Figure 5.3 below. In this example there are 2 dives. The list also shows for each dive: the dive time, the maximum depth, and the surface interval between a dive and the previous dive. Use the Select trip and Select day buttons to view the dives you desire.
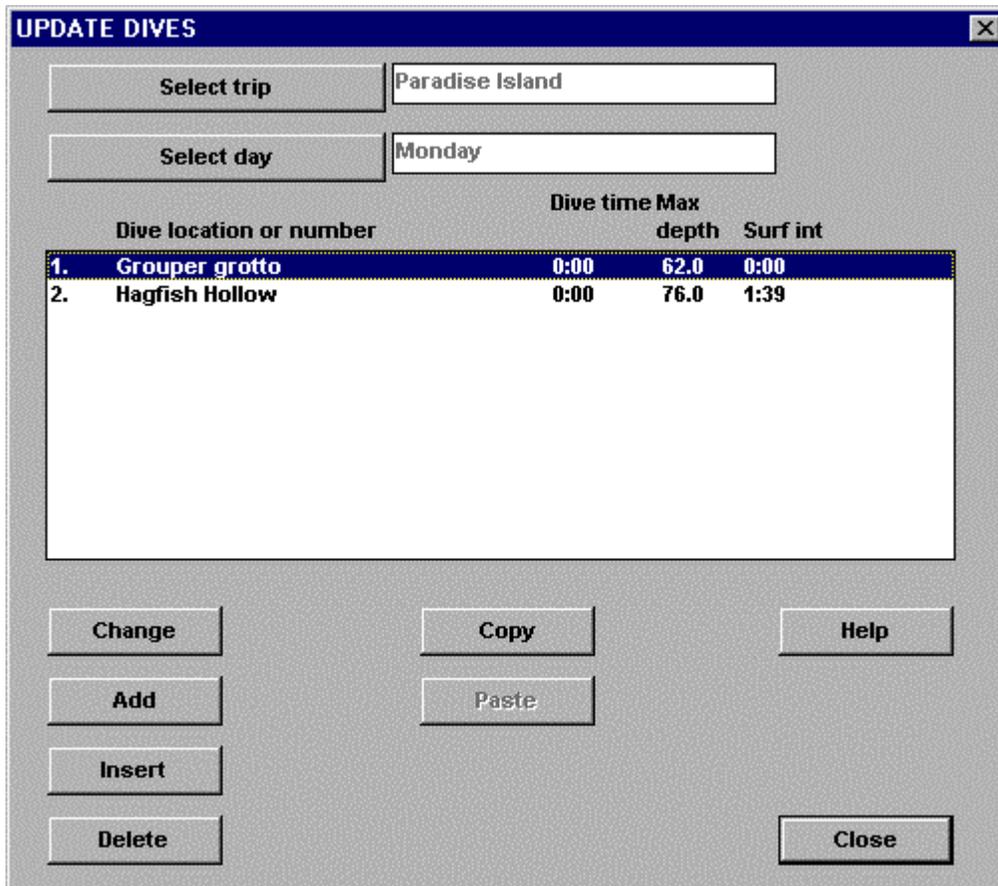
Figure 5.3 Update Dives

5.4.1   How to select a Trip

Click the Select trip button to select a trip. The Choose Trip window will open showing a list of trips in the divelog. Select the trip you want to view and click the close button. That trip name will appear in the trip field in the Update Dives window to the right of the Select Trip button. All of the days associated with the trip will be displayed in the list. If you haven't entered the trip yet, you can add a new trip from the Choose Trip window by clicking the Add button. this will bring up the Trip Info window into which you can type in the trip information. Click the OK button to save this new trip information. The new trip will be added to the list of trips in the Choose Trip window.

5.4.2   How to select a Day

Click the Select day button to select a day. The Choose Day window will open showing a list of days for the selected trip. Select the day you want to view and click the Close button. That day name will appear in the day field in the Update Dives window to the right of the Select Day button. All of the dives associated with the selected trip and day will be displayed in the list. If you haven't entered the day yet, you can add a new day from the Choose Day window

by clicking the Add button. This will bring up the Day Info window into which you can type in the day information. Click the OK button to save this new day information. The new day will be added to the list of days in the Choose Day window.

5.4.3   How to view or modify Dive information (Dive Info Window)

Select the desired dive in the list and click the Change button. The Dive Info window will be displayed. After making any changes, click the OK button to save the new data and return to the Update Dives window. If you are just viewing the data or do not want to save any changes, click the Cancel button to return to the Update Dives window. See Figure 5.4 for a view of the Dive Info window. To the right of the window title, in parentheses, is the designation for which dive you are editing. In the example in Figure 5.4, the 1.1.1 refers to trip 1, day 1, and dive 1.

Figure 5.4 Dive Info

Dive Info window details
Below is a description of the dive details. All of the fields are optional and can be left empty. If the dive information is transferred from a dive computer, some of the fields will be filled in automatically.

Location - The dive location or dive number

Weather - Description of weather during dive

Visibility - Water visibility

Air Temp - Air temperature in degrees. The units will be based on what the user selected in the Setup window.

Water temp - Water temperature in degrees. The units will be based on what the user selected in the Setup window.

Altitude - Specifies the altitude range. Use the arrow to select the correct level.
AO: 0 - 984 feet /300 meters
A1:   984 feet /300 meters - 2952 feet / 900 meters
A2:   2952 feet / 900 meters - 4920 feet / 1500 meters
A3:   4920 feet / 1500 meters - 7872 feet / 2500 meters
A4:   7872 feet / 2500 meters +

User label - Your name or the name of the Dive Computer user.

Tank - Comments or description about the air cylinder used.

Tank size - Size of tank in liters or cubic feet (depending on which units were selected in the Setup window) used on dive.

Suit - Description of suit used on dive.

Partner - Names of partner(s).

Master - Master's or dive leader's name.

CNS - Percentage of Oxygen Loading in the central nervous system, expressed as 0 to 100%.

Comments - Your comments about the dive.

Date - The date of the dive. This field will be filled in automatically from the date specified in the Beg date field in the Day info window (if a date has been entered).

Start dive -The time of the beginning of the descent. The format is HH:MM.

End dive - The time of the surfacing. The format is HH:MM.

Air pressure:
Start - Tank pressure at the start of the dive.
End - Tank pressure at the end of the dive.

Air consumption - The program will automatically calculate your air consumption, based on the total dive time and the Start and End pressures.

Surf int - The surface time preceding this dive - filled in automatically if dive is read in from the dive computer or file.

Max depth - The maximum depth reached during this dive - filled in automatically if dive is read in from the dive computer or file.

Dive time - The total dive time - filled in automatically if dive is read in from the dive computer or file.

PO2 - The Oxygen partial pressure limit setting - filled in automatically if dive is read in from the dive computer or file.

FO2 - The first Fraction of Oxygen selection - filled in automatically if dive is read in from the dive computer or file.

FO2 II - The second Fraction of Oxygen selection - filled in automatically if dive is read in from the dive computer or file.

Sw Depth - The depth at which a switch was made from the first FO2 to the second FO2.

Depth fields - these fields are filled in automatically if the dive is read from the dive computer or file. If you are entering this dive manually, enter a depth for each 3 minute segment of your dive. Use the scroll bar to advance to times as long as 120 minutes.

Violations : filled in automatically if dive is read in from dive computer or file
Slow - Violation of ascent rate limits.
Safety Stop - Missed safety stop.
Tot asc time - Violation of ascent time limit.
Deco stop - Missed decompression stop.
PO2 - Exceeded PO2 limit during dive.
CNS - Exceeded CNS limit.
Depth - Exceeded depth limit of Status computer.

Calc button - Computes the air consumption based on the total time for the dive, the start pressure, the end pressure, and the tank size.

OK button - Saves the changes made to the Dive Info window and returns you to the Update Dives window.

<< and >> buttons - Allows you to navigate through all the dives in your divelog.

Cancel button - Does not save any changes made to the Dive Info window and returns you to the Update Dives window.

5.4.4   How to add a new dive

Click the Add button in the Update Dives window to add a new dive. The Dive Info window will open and you can enter your new information. Use the OK button to save your data and return to the Update Dives window. Click the Cancel button if you decide not to save your data and return to the Update Dives window. If you have saved your new dive information, the list in the Update Dives window will display your new dive as the last dive of that day.

5.4.5   How to insert a new dive

A new dive can be inserted before an existing dive in the divelog. Select a dive from the list in the Update Dives window and click the Insert button. The Dive Info window will open and you can enter your new information. Use the OK button to save your data and return to the Update Dives window. Click the Cancel button if you decide not to save your data and return to the Update Dives window. If you saved your new dive information, the list in the Update Dives window will display your new dive as the dive before the one you selected.

5.4.6   How to delete a dive

You may delete a trip by selecting the dive to be deleted in the Update Dives window and clicking the Delete button. A Delete window will open asking you to be sure whether you want to delete the day. Answer either yes or no by clicking either the OK or Cancel buttons respectively.

5.4.7   How to copy and paste a dive

You may copy an entire dive by selecting the dive from the list to be copied and clicking the Copy button in the Update Dives window. The paste button will now be enabled. To paste the copied dive into the list, select a dive from the list. Clicking the Paste button will insert the copied dive before the selected dive.

You may also copy and paste certain fields in the Dive Info window. The fields that can be copied are: weather, visibility, air temp, water temp, altitude, User label, Tank, Tank size, Suit, Partner, and Master. To copy these fields, first select and view the dive you want to copy. While viewing this dive, click the Copy button. Now close the window and select the dive you want to copy the fields into. You may add a dive at this point. While viewing the destination dive, click the Paste button.

5.5   Entering Data From the Dive Computer

Dive computer data can be entered into the divelog directly using the hardware reader or by reading previously downloaded data from a file. Section 5.5.1 describes how data is downloaded directly from the dive computer. Section 5.5.2 describes how data can be read from a file. Section 5.5.3 describes how the data is entered into the divelog.

5.5.1   Transferring Data From the Dive Computer

There are two steps necessary to input new data from the dive computer into the divelog. The first is to transfer the data from the dive computer using the hardware reader. The second step is to load the data into the divelog, which is described in Section 5.5.3.

The data transfer mode is accessed by clicking the Data button from the Main Menu window and then clicking the Data transfer for divelog button from the Data window. The From Computer window will appear as shown in Figure 5.5. Follow the steps below to complete the transfer.

Note: If you want to transfer only certain dives from the computer, you must edit the dives read field in the Setup window. Enter the number of the last dive to be omitted into the dives read field. The program will only accept dives after this number during the transfer. This way you can omit importing the factory test dives from your computer until they are overwritten by your own dives. Check your Status computer for dive numbers.
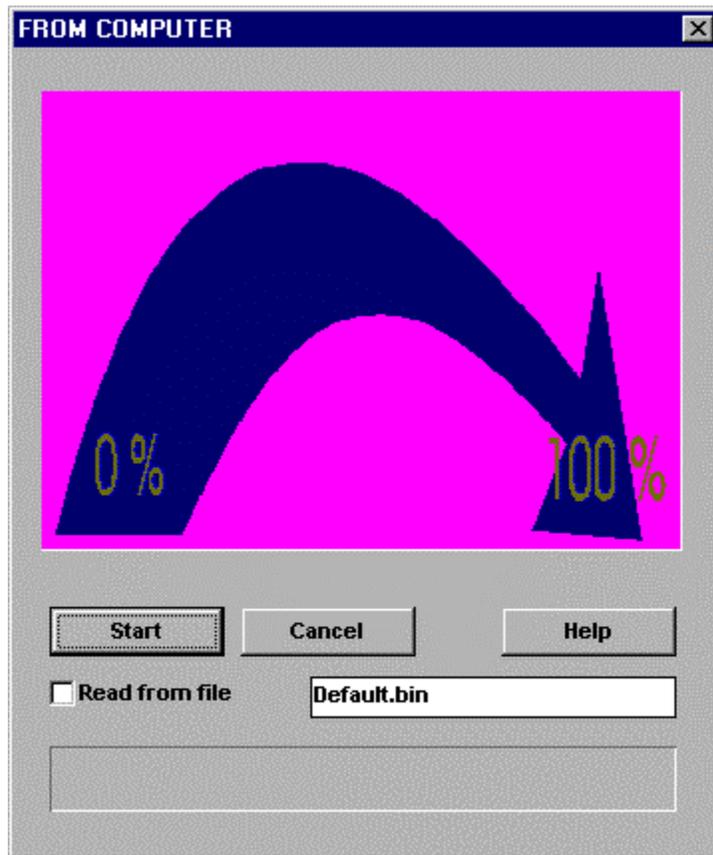
Figure 5.4A Transferring Data

The transferred data will be read into memory and simultaneously stored in a binary file on the hard disk. The name of the file will be the name shown in the field in the From Computer window. The program automatically puts the name, Default.bin, into this field, but you may change the name. Because the data is stored in a file, you may choose to enter the data into the divelog at a later time. However, if you have not entered the data into the divelog by the next time you transfer new data from the dive computer, you will need to make sure that the file name used for the new transfer is not the same name as the file for the older data. When you are ready to input data into the divelog, you will use this window to read data from the file into memory by checking the Read from file check box and entering the file name in the text field. See Section 5.5.2 for instructions.

Note: Please read through all the instructions before beginning the transfer.

Prepare the PC
1. Have the From Computer window active by clicking the Data button on the Main Menu window and the Data transfer for divelog button from the Data window.
2. Verify that the name of the file into which the data will be transferred is correct.

Warning: If you already have a data file with the same name, that data will be overwritten by the new data. If you want to save the old data, you may either rename the file with the old data, or change the name of the file for the new transfer.

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3. Make sure that the Read from file checkbox is not checked.

Prepare the Dive Computer
1. Select PC mode on the dive computer. From Surface Mode, Connect FUNCTION + CTRL 4 times.
2. Connect ENTER + CTRL once to enter the PC Interface function.
3. Position the optical reader device over the face of the dive computer so that the square reader sensor is directly over the LED transmitter on the dive computer. The LED transmitter is located in the bottom left portion of the dive computer screen.

Note : The reader does not position itself automatically on the dive computer screen. If you are unsure how to position the reader, activate the PC load mode in the Status and observe the location of the LED transmitter. Then position the reader window on that location for the actual transfer.

Start the PC
1. Click the Start button with the left mouse button.

Start the Dive Computer
1. Immediately connect ENTER + CTRL once on the dive computer to initiate the transfer.
2. Hold the dive computer and reader device together until the transfer is complete. The transfer will take approximately 10 seconds.
3. The dive computer will return to Surface Mode after the transfer or when it has remained inactive for a few seconds. The data will not be erased from the dive computer, so that if there are any transfer errors, the transfer process can be repeated as many times as necessary.

Transfer progress on the PC
1. You can follow the progress of the transfer in the From Computer screen on the progress bar at the bottom of the window.
2. After the transfer has completed, the Data Transfer For DiveLog window will appear and display the results. See Section 5.5.4 for details on entering this data into the divelog.

5.5.2 Errors During Transfer
There are a number of problems which can interfere with data transfer. You may see one of several error messages appear on the PC screen in this case. The two most common errors during transfer are:

1. The progress indicator in the From Computer screen doesn't move. This means that either your selected com-port is not active or is in conflict with another device.

2. The progress indicator stops before the data transfer has completed. This means that ambient light has interrupted the transfer.

If you encounter **Error on reading data**, check the following points:

1. The most frequent data transfer problem is ambient light. In this case, try covering the Status computer with a cloth.
2. Check that the com-port is configured correctly. The normal addresses for COM 1/2/3 are IRQ 2/3/4/5/7.
3. Make sure that other hardware installed in your computer is not using the same address or com-port.

If you receive a message **Error in data transfer** or **Cannot open port:**

1. Make sure you have configured the com-port correctly, and/or your com-port address is not in conflict with another device address.

If you receive a message **Device/port is already open**:

1. Go back to the Main Menu window, activate another mode, and then go back to the transfer mode. This will reset the com-port.

Note: some pentium computers have com-port settings(in windows) that are too aggressive for the interface program. In this case, use half moderate settings in the Control Panel, System, Ports, Com-ports, settings, advanced and buffers.

5.5.3 Reading Data from a File

Each time data is transferred from the dive computer to the PC, the data is stored in memory and additionally in a binary file specified in the From Computer window. You may choose to enter the transferred data immediately after the transfer or at a later time using the saved file. The data in the saved file can be entered into memory by following the instructions below.

1. Open the From Computer window by clicking on the Data button in the Main Menu window and the Data transfer for divelog button in the Data window.
2. Click the Read from file checkbox so that it is checked.
3. Type in the file name of the file to be read.
4. Click the Start button.
5. You can follow the progress of the transfer in the From Computer screen.
6. After the transfer has completed, the Data Transfer For DiveLog window will appear and display the results. See Section 5.5.3 for details on entering this data into the divelog.

5.5.4 Entering Transferred Data into the Divelog

Dive computer data can be entered into the divelog only after it has been transferred or read in from a file. The window Data Transfer For Divelog, will appear immediately after the transfer or the file is read and is shown in Figure 5.5. The Divelog is organized into trips, days, and dives. The purpose of this window is to divide the dives from the dive computer into trips and days. The program attempts a first try by assuming that all transferred dives occur on the same trip and by using surface interval information to divide dives into days.
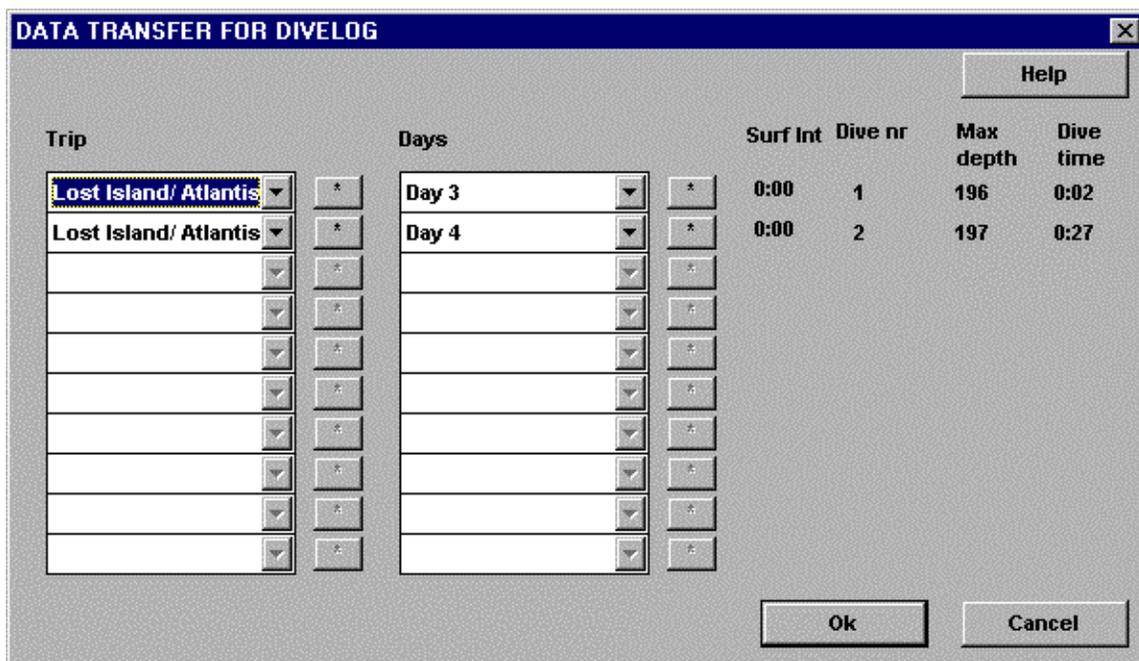

Figure 5.5 Transferred Data

Summary information of the transferred data is displayed in a table. Each row represents a dive with the oldest dive having the smallest dive number. The summary information for each dive includes:

Trip - number of trip or name of trip - entered by user
Days - number of day or name of day - entered by user
Surface Interval - from dive computer or file
Dive Number - from dive computer or file
Maximum Depth - from dive computer or file
Dive Time - from dive computer or file

Note : You may edit only trip and day information. You may not change the order of the dives.

Before you start editing, it is important that you understand how the program assigns trip and day information. It is a good idea to edit trip information first and then Day information, starting with the oldest dive (the dive with the smallest dive number).
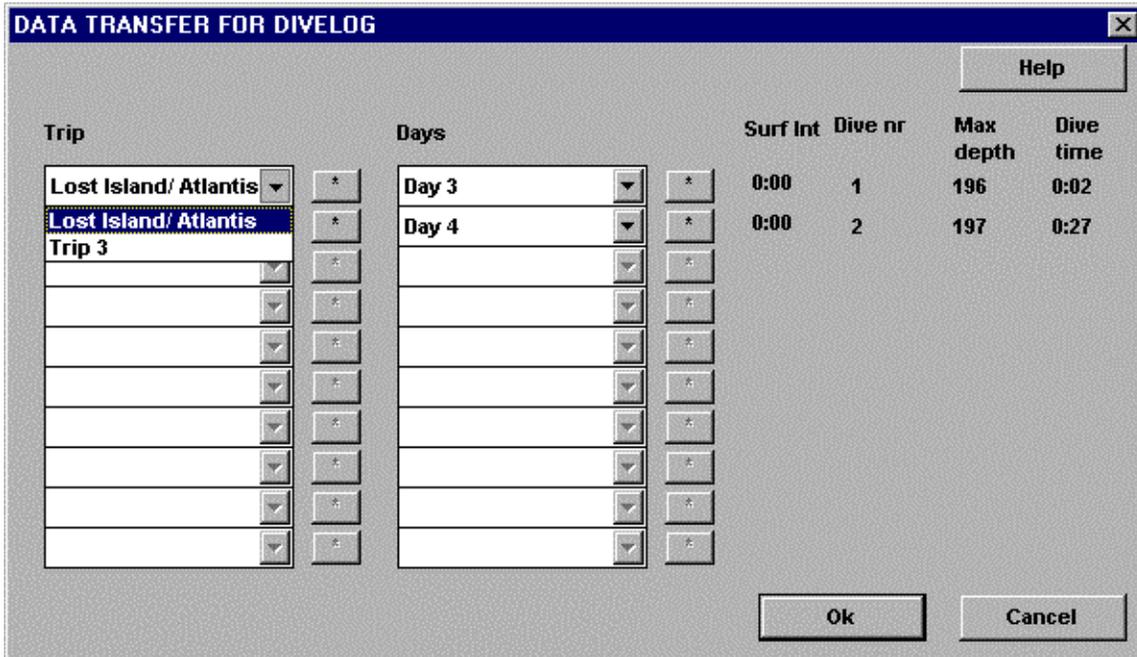
How the program assigns trip information
The program assumes that all the dives transferred belong to the same trip, so all trip fields will display the same name. The name that appears is the name of the last trip in the divelog.

How to edit trip information
Starting editing trip information for the oldest dive (the dive with the smallest dive number) and progress downward in the table. By clicking the arrow at the right edge of a trip you will see two choices, the name that is currently in that field and 'Trip X' where X is the number of the next trip in your divelog. If, for instance, you already have 2 trips entered in your divelog with the following names:

Trip 1. Paradise Island
Trip 2. Lost Island/Atlantis

the program will assign the latest trip, Lost Island/Atlantis, to each trip field. Clicking on the arrow at the right edge of the first trip field will yield the two choices: Lost Island/Atlantis and Trip 3. If the data to be entered is not part of the Lost Island/Atlantis trip but a new trip, then choose Trip 3. The program will then change the name of all of the trip fields to Trip 3. You may change the name of Trip 3 by clicking the button to the right of the field. This will bring up a window into which you may type a new name for Trip 3. You may not change the name of an existing trip from this window. If the data belongs to more than one trip, edit the trip field which corresponds to the first dive of that new trip. To continue the example above, suppose that dive 2 belongs to a later trip. Clicking the right arrow of the trip field for the second dive will yield the choices of Trip 3 (name currently in the field) and Trip 4 (the number of what would be the next trip in the divelog). Choose Trip 4. The program will change the trip field for the second dive to read Trip 4. You can continue this process until all the trip fields are correct.
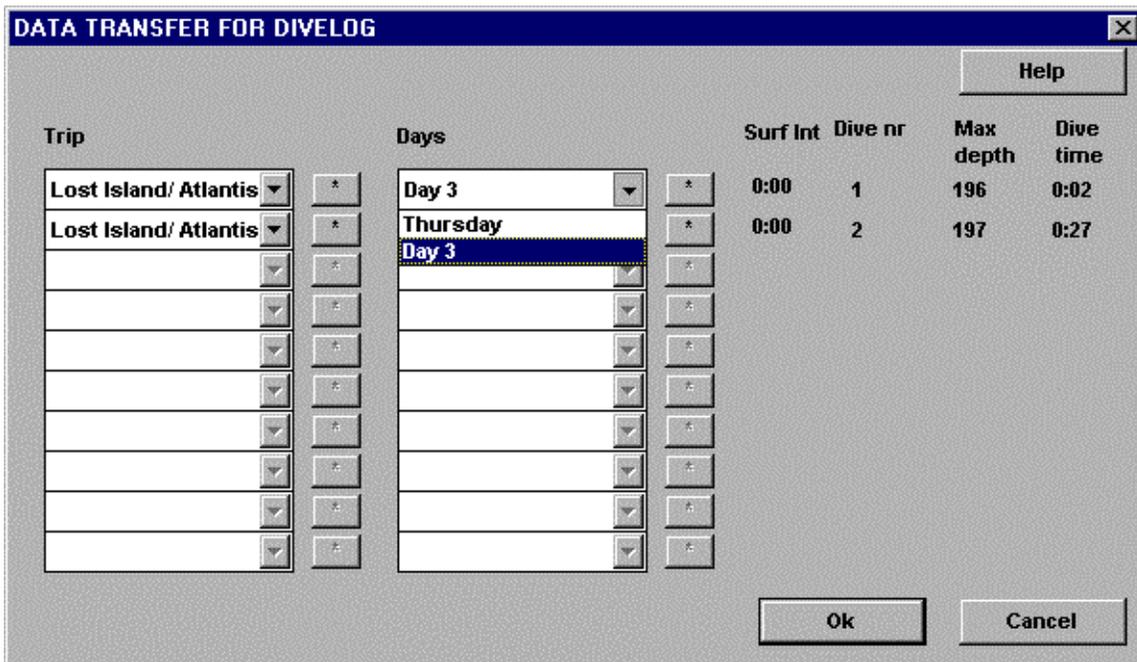
Figure 5.6 Editing Trip Info for Transferred Data

How the program assigns day information
The program attempts to assign days using the surface interval information starting with what would be the next day in the last trip in the divelog. If, in the example above, there were already some days of the trip entered, then the program would begin assigning days starting with the day after the last one entered and continue assigning days based on surface interval times. In our example, there are already two days existing for this trip, so the program starts assigning days with Day 3. Since the surface interval for the second dive is 00:00, the program assumes a 24 hour interval and thus assigns the next day, Day 4, to the second dive.

How to edit day information
Start editing day information for the oldest dive and progress downward in the table. By clicking the arrow at the right edge of a trip you will see two choices, the name that is currently in that field and 'Day X' where X is the number of what would be the next day in the associated trip. For example, if the divelog has one trip already entered with two days associated with it, the program will assign transferred data as shown in Fig. 5.7. Here the program begins assigning days starting with Day 3 of that trip. Clicking the arrow at the right edge of the field will give you the choice of either the Last entered day of the trip (in this example it is Thursday) or Day 3. In each subsequent day field, clicking the arrow will give you a choice between the current value in the field and either the day before or after. You may change the name of the day by clicking the button to the right of the field. You may not, however, change the order of the dives.

Figure 5.7 Editing Day Info for Transferred Data

Saving the Transferred Data
Once you have edited the trip and day fields to match your dives, you need to save the information by clicking the OK button. Once you have saved the data, you may not change it. You may use the editing functions to edit information about the trip, day, or dive but you may not reassign dives to different trips and days. If you decide not to save the data, click the CANCEL button. You may read in the data as many times as you like until you save it.. Clicking either the OK or CANCEL buttons will close the window and return to the DATA window.

Warning: Once you have saved the data by clicking the OK button, the assignment of dives to days and trips may not be changed. The only way to change the assignment would be to delete the dives and read the data from the dive computer or file again. Before transferring or reading in the binary file, you must also change the Dives Read field in the Setup window to the number it was before the original transfer.

6.0 Divelog Reports

This section describes the reporting capabilities of the program. You can select from five report options by clicking the Report button in the Main Menu window. The Choose Report window will be opened which displays the possible reports, including Normal Display, Divelog page, Tissue situation, Dive profile, and Trips-days info. You can view any one by clicking the appropriate button. In all cases except the Trips-days info, you will be prompted to select a dive from the Choose Dive window. Use the popup buttons to select a trip, a day, and a dive. Then click the OK button to open the report for that dive. All of the reports can be printed.

6.1   Normal Display

The Normal Display for a dive gives a summary of the dive including the tissue situation graphs both before and after the dive, the dive profile (a graph of depth versus time), most of the detail dive information , and any violations. You may navigate through the dives in the divelog by using the arrow buttons. Click the Print button to print the display.

6.2   Divelog Page

The Divelog Page report shows the details of the dive data in two scrollable lists. One shows the data fields for the dive and the other shows the depth versus time data (dive profile). If the dive was entered manually, but no data for depth and time was recorded, the graph will be empty. You may navigate through the dives in the divelog by using the arrow buttons. Click the Print button to print the display.

6.3   Tissue Situation

The Tissue Situation report shows the nitrogen saturation in eight different tissue groups in two different graphs. the graph on the left shows the time remaining to surface for a no-decompression dive and the one on the right shows the time needed to desaturate. The dive profile is also displayed so that you may view the tissue situation graphs at any three minute segment during the dive. You may navigate through the dives in the divelog by using the arrow buttons. Click the Print button to print the display.

6.3.1   Time to surface (Bar graph on the left)

The bar graph on the left shows the time to surface, in minutes, for a no decompression dive at any three minute segment during the dive. Each green bar shows the " free space" in a tissue group. The smaller the bar gets, the less no-stop time is left. You can select any three minute time segment during the dive by moving the cursor to the desired segment on the graph and clicking the right mouse button. The bar graphs will then display the saturation for that time segment. The purple line indicates which segment is being

displayed. Fast tissue groups are shown on the left and slow tissue groups on the right. If the bar turns red, it means that the no-stop time has been exceeded. The bar now displays the decompression time, in minutes, needed before surfacing.

6.3.2   Time to desaturate (Bar graph on the right)

The bar graph on the right shows the time to desaturate at any time during the dive for the eight different tissue groups. Each bar shows the time, in hours and minutes, to desaturate. The smaller the bar, the less time to desaturate. The exact time is displayed below the bar. You can select any three minute time segment during the dive by moving the cursor to the desired segment on the graph and clicking the right mouse button. The bar graphs will then display time to desaturate as if the dive ended at that point. The purple line indicates which segment is being displayed. Fast tissue groups are shown on the left and slow tissue groups on the right

6.4   Dive Profile

The Dive Profile report shows a graph of the dive as depth versus time. This is a graph of the data as entered in the Data info window. If you downloaded this dive from your dive computer, these fields are automatically filled in. You can fill in these fields if your dive was entered manually. A summary of the dive detail information is included in two scrollable fields. You may navigate through the dives in the divelog by using the arrow buttons. Click the Print button to print the display.

6.5   Trip-Days Info

This report shows a list of the trips included in your divelog. The number of days and dives is listed for each trip as well as the total diving time and the maximum depth reached. Three summary fields at the bottom of the list show the total number of dives. total diving time, and maximum depth from all dives in the divelog. The comment field at the bottom of the window displays the comments entered for a selected trip in the list. You may add additional comments. Click the Print button to print the display.

By selecting a trip and clicking on the More button, or double clicking the trip, you can get a list of the days of the trip. Also included are the number of dives, the total diving time, and the maximum depth for that day. The three summary fields at the bottom of the list display the total number of dives, the total diving time, and the maximum depth reached for all days listed. The comment field at the bottom of the window displays the comments entered for a selected day in the list. You may add additional comments. Click the Print button to print the display.

7.0   Simulator

This section describes the dive planning capabilities of the program. With this tool you can plan an individual dive, a series of dives, or an entire trip. Your planned dives can be saved for later viewing or editing. The Simulator is accessed by clicking the Simulator button from the Main Menu window. Figure 7.1 below shows a picture of the Simulator window.

Note: Planned dives are stored in a separate database from the divelog database. Each time you enter the Simulator, a new trip is created so that you can just draw the profile immediately.
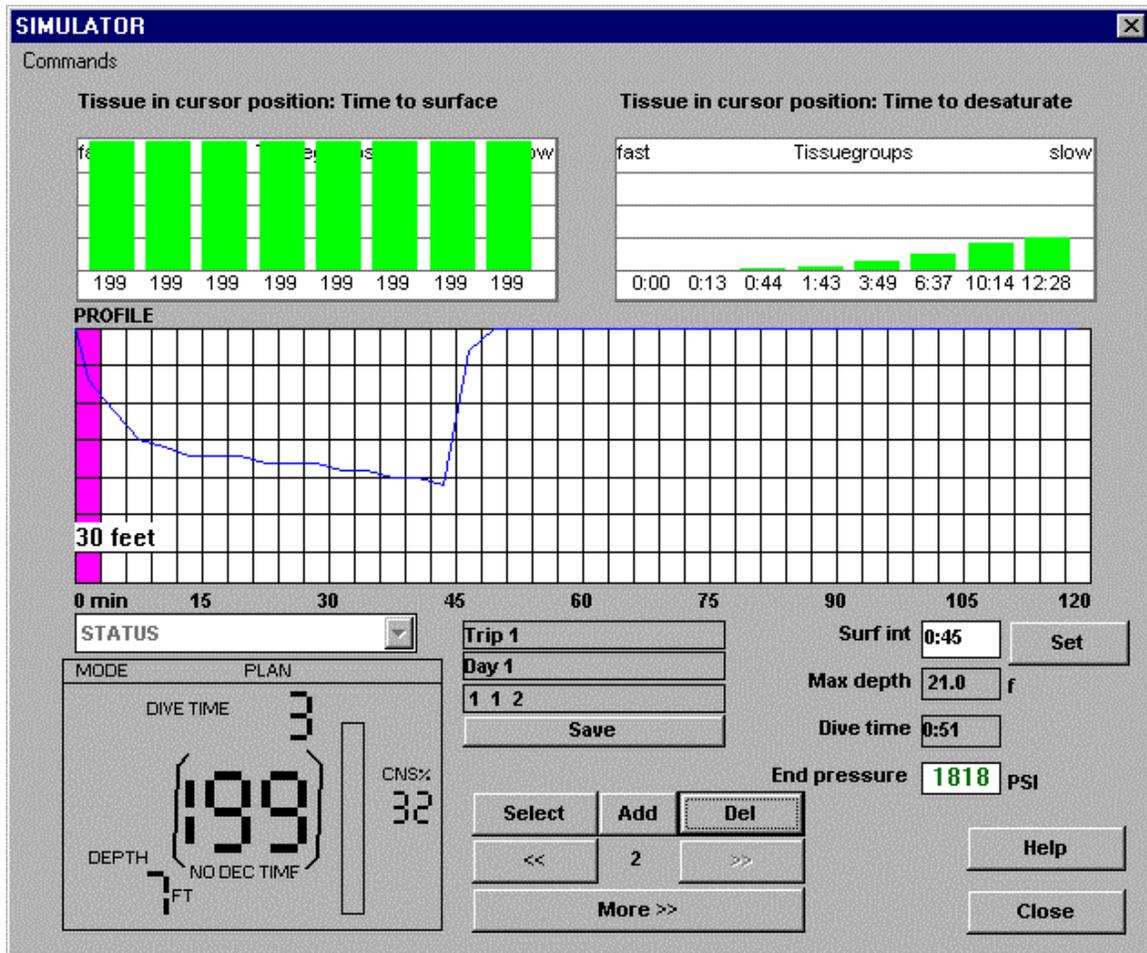
Figure 7.1 Simulator Display

7.1   Drawing a dive profile

To draw a dive profile, move the cursor along the graph at the desired time and depth. The horizontal scale represents time in increments of 3 minutes. The vertical scale will adjust by the position of the cursor. It initially reads 30 feet for full scale, but will increase if you click the cursor below the 30 feet label. The possible scales are 30 feet, 100 feet , 200 feet, and 300

feet. The tissue situation graphs will adjust as you draw the profile. To save the profile, see the description of the Save button below.

7.2   Planning non-repetitive dives

To plan a non-repetitive dive, open the Simulator by clicking the Simulate button from the Main Menu. Draw the profile on the graph. The simulator database stores dives with both an associated trip and day, even if you are planning one dive. Thus each non-repetitive dive should be associated with at least a different day. Each time you enter the Simulator the program creates a new trip and one day automatically so that you can draw the profile immediately. If you want to plan and save multiple non-repetitive dives, use the Data command to open the Data window and click the Trips button to add a new trip. When you exit the Data command the new trip will be selected and you can begin drawing the profile. You can save non-repetitive dives on different days of the same trip. And you can even save non-repetitive dives on the same day but if they are to be truly repetitive dives, the surface interval must be long enough so that the tissue saturation of one dive doesn't affect a subsequent dive.

7.3   Planning repetitive dives

To plan a series of dives, open the Simulator by clicking the Simulate button from the Main Menu. A new trip will be created automatically. Draw the profile of the first dive and save. To add a repetitive dive, click the Add button. You will be presented with an empty graph and the dive name field will change to the next dive. Draw the profile of this dive. Enter the surface interval time in the Surf int field and click the Set button. To add any additional repetitive dives for the first day, continue in the same manner, being sure to enter the surface interval. Each time you enter a new dive in a series, the number under the Add button will increase. You may use the arrow buttons to navigate through the series of dives. Use the More >> button to add details to the dive. You can use the Del button to delete the dive which is currently being displayed.

7.4   Planning trips

To plan a trip with several days of repetitive dives, follow the instructions for planning repetitive dives in Section 7.3. To add a new day, use the Data command to add one or more days. Before exiting the Update Days window, select the day you want to begin with, because this is the day that will be showing upon returning to the Simulator window. Thus if you add Day 2, Day 3, and Day 4 in that order and you want to begin entering a profile for the first dive of Day 2, then be sure to select Day 2 from the Update Days list before returning to the Simulator window. Otherwise you will be drawing the profile for the first dive of Day 4.

7.5   *Selecting dives from the Simulator database*

You can select dives in a variety of ways. You can use the Select button to select any dive in the Simulator database. The arrow buttons allow you to navigate through repetitive dives on the currently selected day. You can also use the Data command followed by the Dives button to select any dive in the Simulator database. The three description fields directly above the Save button indicate the currently selected dive.

Tissue Situation Graphs
The tissue situation graphs are located at the top of the screen. See Section 6.3 for an explanation of these graphs.

Dive Profile
The dive profile is created by using the cursor to draw the graph of depth versus time. The horizontal scale represents time in increments of 3 minutes. The vertical scale will adjust to accommodate the maximum depth. The graph initially reads 30 feet for full scale, but will increase if you click the cursor below the 30 feet label. The possible scales are 30 feet, 100 feet , 200 feet, and 300 feet. The purple bar indicates in which 3 minute segment the last click was made.

Status Computer Display
In the bottom left corner of the screen is a display of the Status computer in the PLAN mode. See the Status computer manual for a complete description. As you draw a profile, the Status display reflects the new data.

Currently Selected Dive description
In the middle of the screen below the dive profile are three read only fields. The three fields show the trip (top field), day(middle field), and dive(bottom field) of the currently selected dive. Any profile changes made will be made to this dive. If you want to save the graph, use the Save button. In Figure 7.1 above, the currently selected dive is Trip 1, Day 1, Dive 2.

Save button
After you have created a dive profile and you want to save it, click the Save button. The Save window will be opened and you can enter names for the trip, day, and dive. The program will give a default name to the dive, based on the trip number, the day number , and the dive number. For example, a default name of 2 1 1 means the dive belongs to the second trip in the Simulator database, the first day of that trip, and the first dive of that day. You may edit this name either in the Save window or later in the Dive info window. To save, click the OK button. If you do not wish to save, click Cancel.

Select button
The Select button lets you select dives which have been stored in Simulator database. Clicking on the Select button will open the Select dive for simulator window. Use the Select trip button to select a different trip and the Select day button to select a day within the selected trip. Finally, highlight the dive you want to view and click the OK button.

Warning : **Do not use the Add button on either the Choose Trip or the Choose Day windows. These buttons do not add the trip or day and trying to add a trip will cause the program to crash and will corrupt your Simulator database file so that you are not able to access it again!!!! If you want to add trips and days, and dives, do so with the Data command.**

Add button
The Add button lets you add a repetitive dive after the currently displayed dive. If the dive to which you want to add another dive is not the currently selected dive, then use the Select button to select the desired dive. The new dive will be added after that dive if there is not already a dive after the selected one. You may not insert new dives into an existing series of dives. The number below the Add button refers to the number of the dive in the series which is currently being displayed.

<< and >> buttons
The arrow buttons let you navigate through the dives on the currently displayed trip.

More button
The More button lets you view and edit the dive details by opening the Dive Info window. See Section 5.4.3 for an explanation of this window.

Del button
Use this button to delete the currently displayed dive from the database.

Sur int field and Set button
Type the surface interval for a dive which is part of a series using the format - HH:MM. Click the Set button to enter.

Max depth field (Read Only)
The program fills this field with maximum depth of the currently displayed dive.

Dive time field (Read Only)
The program fills this field with the total dive time of the currently displayed dive.

End pressure (Read Only)
The program fills this field with the end pressure if the following fields are entered in the Dive details accessed by clicking the More button: Start pressure, Tank size, and air consumption.

7.5   Commands

There are several commands available and are described below. To access the commands, click the left mouse button on the word Commands at the top left of the window below the window title Simulator. A menu of the commands will be displayed.

Data
The Data command can be used to enter new trips, days, and dives into the Simulator database or select any dive in the Simulator database. Selecting the Data command will open the Data window. This window is just like the window used for the divelog database. Here you may transfer data from a Status computer or read in data from a saved binary file.. See Section 5 for a detailed explanation.

Load Profile by user
Load Profile by user allows you to load a profile from your divelog database. The selected profile to be loaded will overwrite the currently displayed dive in the Simulator window. The name in the dive location field for the loaded dive will be written into the dive name field in the Simulator window.

Load Profile by simulator
The Load Profile by simulator allows you to load a profile that is in the Simulator database.

Load Tissue Situation by user
Load tissue situation by user allows you to load a tissue situation from your divelog database as the starting point for a simulated dive.

Load Tissue Situation by simulator
Load tissue situation by simulator allows you to load a tissue situation that is in the Simulator database as the starting point for a simulated dive.

Load Trip by user
Load trip by user allows you to load an entire trip into the Simulator from your divelog database.

Clear profile
Clear profile clears the dive profile graph, but leaves all other data intact.

Clear tissue situation
Clear tissue situation clears the tissue situation but leaves the dive profile intact.

Clear whole simulator trip
Clear whole simulator trip clears the currently displayed trip in the Simulator.

Print
The print command allows you to print out the Simulator window.