



Family Software

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'Drag Racing Computers and Software' - www.iFamilySoftware.com

RaceLog Pro 9 Lite™ (Windows 8.1 < > XP) - Instructions

RaceLog Pro 9 Lite™ is our manual entry version of our popular RaceLog Pro software. You don't need a trailer station or paging system to use RaceLog Pro 9 Lite. You enter the weather conditions into the program manually.

What's New in Version 9.0

- Zoom +

Computer display screens keep getting bigger so we've added the - Zoom + feature so that you can adjust the program to your screen resolution or taste.

SQL Query Database

Structured Query Language (SQL) is a powerful database tool. We can use the "SELECT" statement and the "WHERE" clause to find only the records in your database table that meet with specific criteria.

Interactive Custom Report

At times you'll want to view only certain fields in a record set for easy comparison, especially when using an SQL Search. We've added an Interactive Custom Report that is viewable and printable.

Opponent Database

We've added an Opponent Database for those "wheel racers" out there who need to know the performance data of their competition.

Export Database

We've added an "Export Database as CSV File" function for those wishing to export their data into Excel or other database program.

RaceLog Pro *Lite* will install on all Windows platforms. The installation program gives the user an option to place a shortcut (recommended) on the desktop during installation.

RaceLog Pro *Lite* has a separate ET Predictor for eighth mile racers. If you enter a zero (0) in the fields for 1000 foot ET and 1320 foot ET in your logbook, the program knows this is an eighth mile run. When you open the ET Predictor Pro, it will automatically select the 1/8-Mile Mode.

RaceLog Pro *Lite* uses our proprietary Horsepower Correction formulas for ET Prediction, the only completely scientific formulas in the industry. Our ET Prediction is based on the amount of relative **OXYGEN** in the air and a **Computer Model** of your particular cars performance. We **do not** average weather data, run data, or use outdated and inaccurate Density Altitude calculations for ET Prediction. Our original formulas are perfectly accurate and have never needed updating. We are able to predict your performance within .001 of a second repeatedly. We are the original ET Prediction software developer and the original innovator in this industry! We have been the "**ET Prediction Experts**" since 1986.

Our RaceLog Pro and ET Predictor software has always used Vapor Pressure (aka Water Grains) and is the only ET Prediction software to handle humidity correctly. You won't find any "fudge factors" in our software.

And our **exclusive Run Segment Analysis** feature to compare and graph runs to see as little as .001 of a second difference at different points on the racetrack. This is a feature that Bob Kodadek developed, copyrighted and is a trademark of Family Software.

Installation

The CD will automatically start the installation. For correct operation, it must be installed into the default installation directory shown:

C:\RaceLog Pro 9 Lite

If you'd like to install a shortcut on your desktop for RaceLog Pro Lite, you can choose that option during the installation process.

Registration/Activation

You can use the program for up to 15 days from installation without registering it, just click on the button labeled **Continue**, on the reminder screen that appears. Once the program is activated, the reminder screen will no longer appear. It is easiest to activate by email. You will need your Registration Number that appears on the reminder screen from the computer you will be using at the racetrack. You can avoid errors by using Copy and Paste features. Place your mouse cursor over the Registration Number, Right Click, and select Copy. The Registration Number is copied to the Windows Clipboard. Then, in your email program, Right Click, and select Paste. Email the Registration Number, your full Name, Address, Phone Number, and your Invoice Number to:

[Register @ ifamilysoftware.com](mailto:register@ifamilysoftware.com)

We will email an Unlock Code and User Name for you to Activate the program. Just click on 'Activate' and enter the code and user name that we send to you. If you upgrade later to a new computer, your license can be removed from one computer and transferred to another. Please contact us for help in transferring your license. If you need to install and use the program on a second computer, an additional license can be purchased. However, this is limited to a total of two (2) active licenses per registered user.

Starting the Program – Quick Start

You can start either program from your Start Menu, Programs Menu, or Desktop. Click on Start, Point to Programs, select RaceLog Pro Lite, and double-click on RaceLog Pro *Lite*.

The first time you start RaceLog Pro, it will load a database called “bob98.dat”. The program needs weather and performance data to function, so I've provided a few of my own runs so you can learn using the program. Once you are ready to enter your own data, you'll want to create your own database. Click on “File”, and Select “Create New Database.” Enter a file name for your database, such as “Bob2014”, but use your own name. The program will load your new database, which will be void of data. At this time, only the “Add New Record” button will be active. Click on “Add New Record” when you have made a run and have accompanying weather data. Once you have more than one run entered and you go to add another new record, the program will ask if you want to copy the data from the preceding record. Selecting yes will copy all the data values over to the new record, then you only have to change the data that is different. You can only enter or edit the data in a record when the database is in the Edit Mode. Click on the Edit button when you wish to modify the data in a record.

After you have created your database, there are many data fields that can be used for whatever you wish. These are just text fields and have no affect on any calculations. By default, all of these text cells have been named and can be used as is. However, if for example, you wanted to store air/fuel ratio data, instead of the default “E.G.Temp” data, you can rename that label to Air/Fuel and store your own data there. You can see all the label definitions that can be changed by clicking on File and Selecting “Edit Label Definitions.” You can save your Label Definitions as a .def file, and load it into other instances of RaceLog Pro. Or, you can have a different Label file for different cars that you have created a database for.

Introduction

RaceLog Pro is the ultimate Drag Racing Logbook, and ET Prediction system for your personal computer. RaceLog Pro supports an unlimited number of databases each having an unlimited number of records. RaceLog Pro automatically tracks weather conditions, run information, weather corrected run segments, vehicle settings, component runs, track conditions, expenses, points, winnings, and more. Weather correction calculations support **E85**, **gasoline**, and **methanol** fuel. Any run can be located immediately by Run #, Track, Event, or Date. A Form-view allows the user to see and edit all the data on just one screen. An exclusive dual Table-view allows comparison of multiple runs within a database, or between databases. Records and reports can be printed instantly.

A large part of RaceLog Pro is a **relational database**. A relational database is like a big electronic filing cabinet with multiple drawers called **tables**. Each table has many folders called **records**. Each record has **fields** of data that is specific to its own table. In this program, the ‘Runs’ table stores all the information pertinent to vehicle performance, while the ‘Costs’ table stores the records for expenses, winnings, and points.

RaceLog Pro is a 32-bit Windows program. Each screen or ‘window’ that you see in a Windows program is a *form*. Forms are used to display information to the screen and to get information from the user. At the top of each form is a caption or title bar. Below the caption is a menu bar. The menu bar is used to display the various functions or procedures that are available to the user from this location in the program. When a program starts, it displays the main form. Every feature, or other form, in the program is directly or indirectly accessed from this main form.

Getting Started

RaceLog Pro conveniently stores the current database name and current record number at the end of each session. Each time that you start the program, it reads this information and reloads the last database used and repositions to the record that was being used. If the last database used is not found, an error message will alert you and prompt for a new database name. The first time you start the program, it will load ‘**bob98.mdb**’, a sample database that you can use to learn how the program works. Later on, after you have created your own database, RaceLog Pro will load it instead.

RaceLog Pro’s main form is a ‘form-view’ of the Runs table, in the current database selected. On the menu bar are several functions: **File, View, Expenses, ET Predictor, Run Segment Analysis, Query Database, Custom Report, Opponent Database, About, and Help**. These functions are fully described later on in this text. In form-view, all the data fields contained in the current record can be seen at one time. The Runs table holds all the information pertaining to your car’s performance. Each record is one run. You can move to any field in the record by clicking it with your mouse, or by pressing the Tab Key. On the right side of the form is a Control Panel with 12 control buttons. If you place the cursor on any control button in the program, you will get a brief description of that buttons purpose.

You can move to any record within the table by using the directional control buttons marked as follows:

- |<< - Moves to the first record in the table
- << - Moves to the previous record in the table
- >> - Moves to the next record in the table
- >>| - Moves to the last record in the table

Find/Find Next Buttons

You can quickly find any record in the table by using the Find and Find Next control buttons. Click on Find and the Find Record window opens. You can click on one of the option buttons to select the criteria for finding the record, either Date, Track, Event, or Run #. For example, if the Date option is selected, all the dates from every record in the table will be shown in the list box. To find a particular date in the list box, just type the first few characters of the date. When the date appears in the list box, just double-click on it, click on OK, and the record will be found instantly. If there are other matching records, you can click on the Find Next control button. If another matching record is found it will be displayed.

The remaining control buttons and their functions are:

Add New – This is the preferred method of adding a new run to the table. Clicking this button will add a new record to the end of the table. The record pointer is moved to the last record in the table. You can choose to copy the contents of the last record to the new record. If you copy the contents of the last record, you can save a lot of typing, since most vehicle settings aren’t changed for every run. Also, if you copy the last record, the program will automatically increment the Component Runs for Engine, Trans, Tires, and Oil/Filter if their value is greater than 0. You can then enter data and/or Edit the record. When done editing, click on Save.

Save – This option is only activated when the database is in Edit Mode. Clicking Save will store the current contents of the record into the database and then exit Edit Mode. As you are entering data, each field is validated for possible user errors. If a variable that you enter cannot be validated, the background color of that field will turn Red, and the cursor will be returned to that field to be corrected. You must correct the error in order to proceed.

Undo – This option also is only activated in Edit Mode. It allows you to abort the current operation without saving any information that you have entered or changed. It is not available in Insert Mode.

Insert – This option adds a new record between two other records. If you forgot to enter a time run and want it placed in the proper run order, you would use this option. Instead of copying the contents of the last record, it

copies the contents of the current record in the table. It then updates the Component Runs for each record in the table. You can't use Undo to cancel this operation, but you can delete the record if you make a mistake. Use this command sparingly, in order to keep the Component Run counters accurate.

Edit – Clicking on Edit puts the database into Edit Mode on the current record. All the data fields change from a white background to a light blue background whenever the database is in Edit Mode to alert you that the data will be changed by this operation. Unless the database is in Edit Mode, none of the data in the record may be modified. You can use the Tab key, the Return key, or the mouse to quickly move from one field to another. Each time you enter a new field, the data value in that field will be highlighted. If you want to replace the value, just enter a new one. The old value will be erased as soon as you begin typing. If you want to edit the value, use the arrow keys to move around in the field. You can then edit the individual characters or numbers in the field.

Delete – This operation removes the current record from the database and updates all component runs. It's best to avoid using the delete command, except to remove the last record in the table. When you delete records in the middle of a table, a lot of house keeping becomes necessary. The program has to renumber all the runs in the table, while trying to maintain the integrity of the Component Run counters.

Data Fields

Each data field on the form has two parts, a label and a text box. The label is the description of the data field. The text box holds the actual data value. Some data fields are **numerical** and some are **text based**. For example, the data field for **Barometer** is numerical. The label is "Barometer". The text box holds the value, for example, "30.02". If you place the cursor on the label of any numerical field, the expected range will be displayed. Place the cursor on "Barometer" and you will see "**12.00 to 35.00**" displayed. You must enter a number value in this field in this particular range to protect the integrity of the database. All numerical fields are validated when the Save operation is selected. If you enter a value that is outside the normal range for that field, the Save operation is canceled and the cursor will be placed in the data field where the error was found. If you place the cursor on a field label and a numerical range is not displayed, then this is a text-based data field. The Notes field is an example of a text-based data field. You can enter any characters in a text-based field because no validation is necessary.

Fuel Mode Box

The fuel mode box is used to set the weather correction calibration used in the program to either **E85, Methanol** or **Gasoline** and to display the current setting. When correcting elapsed time (**ET**) to Standard Pressure (**STP**) or when predicting ET, the program needs to know what fuel you are using. While in Edit Mode, clicking on one of the three option buttons will change the fuel mode. The current fuel mode is stored in the record as an "**E**", "**M**" or "**G**". When you are moving through the records, the program will automatically reset the fuel mode depending on whether it finds a "G", "M", or an "E" stored in that record. You can override this setting manually, so when saving your record, be sure that you have set the fuel mode properly for that run.

Air Calculation Box

While in Edit Mode, once you have entered the Elevation (**NOT TRACK ELEVATION, READ BELOW**), Barometer, Temperature, and Humidity, the calculated current Horsepower Correction Factor (**Current HCF**), Air Density Index (**ADI**), Density Altitude (**DA**), Vapor Pressure (**Vapor Press.**), Water Grains Per Pound (**Water Grains**), and Dew Point (**Dew Point T.**) are reported. If you've entered the Vehicle Weight and Ballast in the Vehicle Settings Box, the Horsepower Corrected Weight (**HPC Weight**) will also be reported. Our formulas for Horsepower Correction and ET Prediction are the most accurate to be found in this industry. The ET Predictor uses a standard of 0 elevation, 29.92 In Hg pressure, 60 degrees F, and 0 % relative humidity. Under these conditions the HCF equals 1.0000 and the ADI will equal 100.000 percent. Here is a further description of the input data used in these calculations:

Elevation - Range: -3,000 to +26,000 Feet – **Never enter the elevation of the racetrack!** This field should always be zero (0) unless using an **altimeter** or a **corrected analog** barometer. If you're using a digital barometer, set it to report **absolute pressure** and always enter 0 for Elevation. If you have an altimeter, calibrate it to 29.92 In Hg and enter the reported altitude as Elevation. If you're using an old analog (dial) barometer, then you should always enter the number of feet equal to the amount of correction if you had to calibrate the barometer to your physical elevation.

Barometer - Range: 12 to 35 Inches Hg - If you're using a barometer to obtain the air pressure, enter the barometric pressure from the gauge. When using an altimeter, you must always enter 29.92 in this field.

Temperature - Range: 10 to 130 degrees F - Enter the temperature from a digital thermometer or other temperature gauge. Never use the temperature readings reported on your time card. These sensors are not accurate! From round to round, temperature changes are apt to affect performance more than any other variable.

Humidity - Range: 0 to 100 Per Cent - You can use a digital hygrometer to find the relative humidity. At low temperature, relative humidity has the least effect on performance. However, at high temperatures, the effect is much greater. For example, 50% RH at 60 F will result in a .01 loss in power, while at 90 F the addition of 50% RH equals about a .03 loss in power. Changes in temperature are also more critical under high humidity.

Wind Speed – Range: -99 to 99 MPH – The value in this field is used in **TrueWind™ ET Prediction**. The ET Predictor screen uses the measured head or tail wind speed to adjust the predicted ET to accurately reflect changes in performance due to the wind. A head wind is entered as a positive number without any sign. For example, a 12-mph head wind would be entered as **12**. A tail wind is entered as a negative number with a minus sign. For example, an 8-mph tail wind would be entered as **- 8**. If you are using a hand-held wind meter, stand and hold the meter facing the starting line to measure only the true amount of tail wind. Then enter the mph read as a negative number. Stand and face the finish line to measure only the true amount of head wind. If you do not enable the TrueWind™ ET Prediction feature in the ET Predictor screen, this value will not be used in any calculation.

Wind Direction - This text field is not used in any calculation, just to log the observed wind direction.

Vehicle Weight - The Vehicle Weight (including driver) and **Ballast** is used in the computation for finding the Horsepower Corrected Weight. It is NOT used in calculating the predicted ET.

The following is more information on the resulting calculations:

Current HCF (Current HP Correction Factor) - The Horsepower Correction Factor is computed using the current weather conditions that you enter. In other words, the HCF equals the current elevation, barometer, temperature, and humidity. When the HCF is higher, fewer horsepower is produced, and the car will run slower. So, the lower the HCF is, the faster the car will run. You can use the HCF to determine the variance in horsepower or torque that is being produced under different weather conditions. For example, if your engine produces 400 horsepower with an HCF of 1.012, it will produce 404.80 horsepower at sea level conditions (STP) or $1.0000 (400 \times 1.012=404.80)$.

Air Density (Air Density Index) - The Air Density Index (ADI) is the computed ratio of the current density to that of STP with STP having an index of 100 percent. This factor is used to determine the correct jetting or pill size required under varying weather conditions. The higher the ADI, the more air there is available for combustion. Therefore, more fuel must be burned to maintain the correct air/fuel ratio. When using gasoline, a four (4) percent change in the ADI will usually necessitate a change in jet area in order to maintain the same level of performance. Holley jet sizes are about 4 percent apart in flow area. If the ADI goes up four (4) percent, for example 100.0 to 104.0, increase all jet sizes by one number. And, if the ADI goes down four (4) percent, for example 100.0 to 96.0, decrease all jet sizes by one number.

Density Alt (Density Altitude) – Density Altitude (DA) is the current air density expressed in feet of elevation. DA is also known as the corrected or relative altitude.

Vapor Press. (Vapor Pressure) – Vapor Pressure (VP) is the amount of water vapor (humidity) in the air expressed in inches of mercury. Absolute humidity, Water Grains, and Vapor Pressure calculations all express the amount of water vapor in the air.

Water Grains (Grains per Pound) - GRLB is a calculation of the mass of water to the mass of Dry Air. It is nothing more than Absolute Humidity or Vapor Pressure! Absolute Humidity, Water Grains, and Vapor Pressure calculations all express the amount of water vapor in the air.

Dew Point T. (Dew Point Temperature) - Dew points indicate the amount moisture in the air. The higher the dew points, the higher the moisture content of the air at a given temperature. Dew Point Temperature is defined as the temperature to which the air would have to cool (at constant pressure and constant water vapor content) in order to reach saturation. When the Dew Point Temperature is reached, condensation will be present on the racetrack.

HPC Weight (Horsepower Corrected Weight) - The program uses the input variables, Vehicle Weight and Ballast, as the total vehicle weight and then corrects this weight to the current air conditions. The reported HPC Weight changes with the weather conditions entered. The HPC Weight should be logged for every run that you make. By adding or removing ballast, the car can be made to run the same Elapsed Time in different air conditions without changing the throttle stop. For example, under previous air conditions, the reported HPC Weight was 1720 and the car ran an 8.900 ET. Later on, the HPC Weight is now 1740 because of worsening air conditions. If you remove 20 pounds of ballast, the car will still run an 8.900 ET in these new air conditions.

Performance Box

After you have entered the air conditions from when the run was made, next enter the data from your Time Slip into the fields in the Performance Box.

Round - This text field is for logging the type of run and what number round it was. I like to be able to differentiate between time runs and elimination runs, so I use T1, T2, T3, E1, E2, E3, etc.

Dial/Idx - This numerical field is used to enter your Index if you are an Index Racer (8.90, 9.90, 10.90). This value is copied over to the ET Predictor screen and is used there in the Throttle Stop Prediction.

Lane - This text field is for logging what lane you ran in. You can enter 'Left' or 'Right', '1' or '2', or whatever you are comfortable with. I use "L" for left and "R" for the right lane.

RT - This text field is used for logging your Reaction Time.

60', 330', 660', 1000', 1320' - These are numerical fields for the interval times on your time slip.

Note: If this is a run from an eighth mile track, enter a zero (0) for the 1000' and the 1320'. This is necessary for the Run Segment calculation and to alert the ET Predictor to start in the 1/8-Mile Mode.

MPH1, MPH2 - These text fields are for logging your 660 foot MPH and your 1320 foot MPH.

MOV - This text field is for logging the Margin of Victory recorded on your time slip.

STP Run Segment Box

Other than having an on-board computer, calculating the STP Run Segments is the ultimate method to help a racer obtain maximum consistency and performance. After entering the weather conditions and the interval times from your ET slip in the Performance Box, the program sees the track as six (6) separate distance segments. These are the 0'-60', 60'-330', 330'-660', 660'-1000', 1000'-1320', and 0'-1320' distances. The STP corrected time is reported for each of these segments. This allows you to quickly analyze what the car is doing at any point on the track. Because the times are all corrected to STP (standard pressure), you can compare every run you make at a glance and know to the thousandth of a second any variable that exists in your combination or driving style. Once your combination has been optimized, you'll be able to see the variance between lanes or from track to track.

If you are using a throttle stop, and you have entered your throttle stop duration (T.S. Duration) under Vehicle Settings and your throttle stop factor (T.S. Factor) under Observed Data, the program will calculate the STP W.O.T. elapsed time. It calculates what the car should have run without a throttle stop (Wide-Open Throttle) at standard pressure. This should be close to what the car really does run, wide open in perfect air conditions. If not, your throttle stop factor is wrong or your throttle stop is not working correctly. Be sure to use your actual T.S. Duration. Some throttle stop controllers use actual duration, but not all. With some older units, you have to subtract the first timer from the second timer to get the actual duration.

Component Runs Box

The program automatically keeps track of the component runs on your engine, transmission, tires, and oil/filter. When you create a new database and add the first record, enter the current number of runs for each of these components. If the engine has 100 runs on it, enter 100. If the tires have 30 runs on them, enter 30. After this, every time you add a run, insert a run, or delete a run, these values are adjusted for you. To keep these counters perfectly accurate, you must be careful when inserting or deleting records at a previous point in the table. Ideally, you should only add new runs to the end of the table using the Add New command. You should also only use Delete to remove the last run in the table. Only use the Insert or Delete commands when absolutely necessary.

Observed Data Box

This box is used to enter all the data that is observed on the run. The only numeric field in this box is the TS Factor, which is used in calculating STP W.O.T. and throttle stop prediction. A throttle stop factor usually varies somewhat from run to run and must be continually monitored or observed. The Data #1 through Data #6 fields are text fields and are for entering any data that you want. If you are logging numbers from your data recorder, this is a good place for them. If you have a Family Software **DataMaster™** data recorder, data is automatically imported into these fields.

Vehicle Settings Box

The only numeric fields here are TS Duration, Vehicle Weight, and Ballast. The TS Duration is used in calculating STP W.O.T. and throttle stop prediction. Vehicle Weight and Ballast are used in calculating the HPC Weight.

Main Form - Functions

- Zoom +

Computer display screens keep getting bigger so we've added the - Zoom + feature so that you can adjust the program to your screen resolution or taste. Clicking on the "+" increases the size of the main program window while clicking on the "-" decreases it. All subsequent windows will adjust themselves to the size and position of the main program window. In addition, all program windows are individually resizable by dragging a corner of the window, and movable by dragging the title bar of the window. The program will save the last size and position of the main window for you at exit. If you're running more than one car at a time, you can decrease the main window size of each car and position them anywhere on the screen. The next time you start the program they will appear where you left them. To undo your changes, click on the "+" of the Zoom feature. If you click on the "Maximize" button on the main program window, the Zoom feature becomes inoperable. Click on the "Maximize" button again to restore its function.

File Menu

Open Database – Click on this to open an existing database. All existing databases will appear in the list box. Just double-click on the name of the database you wish to open. Or, highlight the filename and click on Open.

Create New Database – Click on this to create a new database. You can create a new database at the beginning of each racing season, for example, bob97.mdb, bob98.mdb, bob99.mdb. To create a new database, just type in a new file name and click on Save. It isn't necessary to add the file suffix '.mdb' to the file name that you enter. The program will do this for you. When you create a new database, it will not have any records until you add them. For this reason, all the buttons in the Control Panel will be disabled except for the Add New function.

Backup Database – This function backs up the current database to a floppy disk or other directory.

Import Database – This function will import a copy of an existing database from a floppy disk or other directory. Use this function to import your backed up databases or databases from a previous version of RaceLog Pro. Older versions will be updated to the new format used in Version 7 and up.

Export Database as CSV File (New) - This function is for those wishing to export their data into Access or other database program. Click on File.Export Database, then Export. By default the .CSV file will be named Export.csv or you may enter a file name of your choice.

Print Record – This function sends the current record to the printer function in Windows.

Shell – This function allows you to run another .exe program from RaceLog Pro. Our DataMaster™ data recorder software will run within RaceLog Pro allowing you to directly import data into a RaceLog Pro record.

Edit Label Definitions – This function allows you to edit the labels for text-only data cells and save the custom label definitions as .def files. These are data fields that you can use for any data that you choose.

Exit – This function closes all files and exits the RaceLog Pro program.

View Menu

Table View – This function brings up a dual table-view screen. A table-view is like a spreadsheet. Instead of being able to see all the data from one record at one time, you can see multiple records at the same time. However, you must scroll the table in order to see all the data in each record. Upon entry, both Table 1 and Table 2 are set to the current database. In this manner, you can compare any records within the same database with each other. Optionally, you can load a different database into Table 2. This way, you can compare records from different

databases with each other. For example, you might want to compare the runs from a previous year at the same event. To accomplish this, just click on File, click on Open Database-Table 2, then double-click on the database name you want to open. In table-view, the records cannot be edited, therefore the only control buttons that are active are the Find, Find Next, and the directional control buttons. To scroll the tables, click on the left and right arrow buttons located in the lower left and lower right corners of each table. To make it easier to compare data between tables, you can highlight an individual row or column in each table. To highlight a table column, just click on the column label. For example, if you want to highlight all your reaction times, click on the column label RT. To highlight a row in the table, click on the control button located at the extreme left of the row. To turn the highlight off, press the Tab Key.

Expenses Menu

Clicking on Expenses brings up the Expense Form, which is a form-view screen of the 'Costs' table. The Costs table is used to record, and report on, your racing expenses, winnings, and points. You can add a new record for each event that you attend or an individual expense. When in Edit Mode, a Total button appears in the Expenses Box and the Winnings Box. Instead of having to use a calculator to total your expenses, just click on the Total button. The program will add up the fields and enter the total for you.

Expense Form - Menu Functions

Here is a listing of the Expense Form menu functions and what they do:

File

Print Record - The Print Record function sends the current record to the printer function in Windows.

Close - This function closes the current file and returns to the Main Form.

Report

Monthly Report - This function creates a monthly report window of your expenses, winnings, and points. Just select any record in the table for the **month** you want to report on, and click on this function. You can print the report by clicking on the Print function.

Annual Report - This function creates an annual report window of your expenses, winnings, and points. Just select any record in the table for the **year** you want to report on, and click on this function. You can print the report by clicking on the Print function.

ET Predictor™ Menu

Clicking on this function brings up the ET Predictor Form. When you click on this function, all the data from the current record is transferred to the ET Predictor. The ET Predictor screen will show what database and Run # the data is from. This way, if you want to predict your ET or throttle stop setting for your next run, you only have to select the run you want to predict from, and then click on ET Predictor. Since, it will already have all the base run information from your database, you only have to enter the new air conditions and the program will automatically predict your new ET or throttle stop setting. You may also edit any of the base run information while in the ET Predictor or perform any of the other functions available. The ET Predictor form also works as a stand-alone program. You don't have to work from the data that is transferred from the current record. You are able to save all the current data you are working on as a separate data file. You can then Open your saved data files from within the ET Predictor.

ET Prediction Function

Using a base line of performance consisting of a previous ET (Base ET) and its associated Horsepower Correction Factor (Base HCF), this function will calculate and predict your ET under new air conditions. This is used to determine the proper dial-in or in determining a need to adjust a throttle stop. This program will also predict 60', 330', 660' and 1000' times if these are entered into the Base Run Info Box. Be sure that the Fuel Mode is set correctly. Enter the Base HCF and Base 60', Base 330', Base 660', Base 1000', and Base 1320' times in the Base Run Info Box from the run you wish to predict from. Then, enter the new air conditions in the New Air Conditions Box. Next, click on the **Air_Calculate** button. The predicted ET's will appear in the Predicted ET Box.

Throttle Stop Prediction Function

The function is used to predict a throttle stop setting based on a previous run, previous throttle stop duration (T.S. Duration), and existing throttle stop factor (T.S. Factor). First, calculate your Predicted ET. The Predicted ET is transferred to the Predict Throttle Stop Box automatically. In the Predict Throttle Stop Box enter the Dial or Index

that you wish to use. If you want to use a different Predicted ET than the one shown, you can edit the one shown. This function uses the T.S. Duration and T.S. Factor values from the Base Run Info Box. Make sure that these values are correct and then click on the **Predict_TS** button.

Corrected STP ET Function

This function is used to quickly correct any ET (60', 330', 660', 1000', or 1320') to standard pressure (STP) conditions. It uses the air conditions entered in the New Air Conditions Box, the current Fuel Mode, and the Actual ET that you enter. First, set the Fuel Mode. Then, enter the air conditions that were present at the time of the run. Then, enter the Actual ET, and click on the **STP_Correction** button. As an example, for gasoline fuel and weather conditions of 0 elevation, 29.65 barometer, 75 temp, and 45% humidity, an ET of 9.337 would be equal to 9.204 after being corrected to STP. Comparatively, for weather conditions of 0 elevation, 29.80 barometer, 67 temp, and 68% humidity, an ET of 9.298 will also equal 9.204 at STP. Actually, the program calculates and then removes the effect that the current air density had on the run. This creates a basis to directly compare one ET against another regardless of the weather conditions associated with the run. Comparing these two STP ET's shows us that this particular car is responding perfectly to changes in weather conditions and is consistent right down to the thousandth. The corrected ET (STP ET) is how fast the car would have run under perfect (STP) weather conditions.

Run Completion Function

When you return from your run, provided that you had the ET Predictor running on "Auto" or "Page", the Run Completion Function is preset and ready to use. All the information is already there except for the 1000' time (660' for 1/8 mile) from your new time slip. Just enter the new 1000' time into the field labeled "New Seg" and click the Run_Completion Button. That's it!

If you want to use Run Complete function at another time you'll need the air conditions from the new run. Jot them down on your time slip. Make your Base Run, (the one you predicted from), the Current Record in RaceLog Pro. Then click on ET Predictor. Enter the air conditions from the time slip in the New Air Conditions Box and Click Air_Calculate. Enter the new 1000' time into "New Seg" and click the Run Completion Button.

Based on the information entered under your Base HCF, Base ET, and the New Air Conditions, this function will report a projected ET on a run where you had to hit the brakes or lifted off the throttle. It uses the Base 1000' time (Base SEG), assuming that you are running on a 1/4-mile track and that you ran the car on full throttle past the 1000' cone. If you lifted earlier, you can enter the 660' time for the Base SEG. Likewise, if you are running on a 1/8th mile track, you may use the 330' for the Base SEG. For the New SEG field, enter the corresponding time from your time card from the new run. If you used the Base 1000' time for the Base SEG, then you must enter the new 1000' time from your time card for the New SEG. Click on the Run_Completion button and the program will compute the Projected ET, or what the car would have run in those air conditions.

Hint: When the TrueWind™ Option Box is checked, the Projected ET will be calculated using the current TrueWind™ settings.

ET Predictor Form - Menu Functions

Here is a listing of the ET Predictor Form menu functions and what they do:

File

Open - Click on this function to open an existing ET Predictor data file. All existing data files will appear in the list box. Just double-click on the name of the data file you wish to open. Or, you can highlight the filename and click on Open.

Save - Click on this function to save the current data in the ET Predictor workspace to a data file. Enter a name for your file in the file name box and click on Save. It isn't necessary to add the file suffix '.dbt' to the file name that you enter. The program will do this for you. Be sure to use a unique name for your data file so that you can remember what the data is for. I like to use the date and the round for my data files. For example, if you name the file, '021105E1.dbt', you'll know exactly what run the data pertains to.

Exit - This function closes the ET Predictor window and returns you to the Main Form.

Programs

Calculate TS Factor – This function quickly calculates a throttle stop factor (T.S. Factor) using two runs. The second run (STP ET #2) must have more timer duration and must be the slower run. You should first correct

both runs to STP using the Corrected STP ET function. Otherwise, the two runs must have been made in exactly the same air conditions, or the result will not be accurate. Enter the STP ET from the first run in the field, STP ET #1. Then, enter the timer duration that was used on that run in the field, TSD #1. Next, enter the STP ET and timer duration from the second run and click on the Calculate button.

TrueWind™ Option Checkbox – If you place a check in this box, the ET Predictor will adjust the predicted ET using the TrueWind™ value in your Base Run, the Current TrueWind™ value, and your specific Wind Factor. If the box is unchecked, the TrueWind™ option is turned off and wind conditions are NOT used.

Wind Factor - The Wind Factor is saved by the program and associated with that particular database. Every car has a unique Wind Factor. For this reason, it may be a good idea to have a separate database for each car and/or a separate database for eighth and quarter mile tracks. If not, the Wind Factor can always be manually edited at any time.

A vehicle's terminal speed, frontal area, and aerodynamics, are only a few of the variables that could be used in determining your wind factor. However, frontal area calculations are extremely crude and inaccurate. For this reason, frontal area can not possibly be used as a component in such an equation! The only way to ascertain an accurate Wind Factor is to use a computer model of your car's performance under varying wind conditions. Our exclusive **Run Segment Analysis™** feature allows you to do exactly that. Therefore, you can easily find the correct Wind Factor specific to your own car. Just compare runs having different wind conditions. Quarter mile racers will see the majority of wind effect in the 660 to 1000 foot segment, and in the 1000 to 1320 foot segment. The Wind Factor can then be calculated by using simple math. Just add the total time difference (between two runs) from these two segments and divide by the difference in MPH.

For example, on the first run you have a -3 mph tail wind. On the second run, you have a 5 mph head wind. The total difference in wind force is actually greater by 8 mph. The total time difference of the two segments on the second run is greater by .01 seconds. Divide .01 seconds by 8 mph and you get a Wind Factor of .00125. This shows that one (1) mph of wind effects your cars performance by .00125 in elapsed time.

TrueWind™ ET Prediction is purely optional. If you are not monitoring the wind, then you don't have to use it. Or, if you are unsure about using it, you can start out using a very small wind factor and track the results. And, if you are a low mph, eighth mile racer only, it may be insignificant. In testing last year, it has proved its accuracy and value to me as a racer. As a starting point, some approximate Wind Factors you may try are:

Dragster: .001 to .004 **Door Car:** .003 to .006 **Roadster:** .005 to .008

Run Segment Analysis™ Menu

Clicking on this function brings up the Run Segment Analysis Form. This form pops up next to the STP Run Segment Box on the current record. Initially, it loads the same database and the same record that you are currently on. It automatically compares the STP Run Segment times between runs. You can change the current record by clicking on the directional control arrows below the Run Analysis Box. Or, you can use the Find and Find Next buttons to locate any record in the current table. You can also click on File, and open another existing database so that you can compare runs between databases! The program compares the two selected runs and shows the Lite (+) or minus (-) variance of each segment comparison. A graph overlaying the two runs appear at the bottom of the Run Segment Analysis Box for instant analysis!

While the uncorrected times from each run will (and should) vary with every pass, ideally the STP segment times between passes should be the same. By comparing the STP segments between two runs you can see traction variances, throttle stop function, wind, and other variables that affect performance and prediction. Traction problems will be seen at the 0-60 foot and 60-330 foot segments. Wind will affect the 660-1000 foot and 1000-1320 foot segments. Second gear shift variances will usually be seen at the 60-330 foot segment. Throttle stop function will be seen between the segments of activation and de-activation of the throttle stop.

Run Segment Analysis Form - Menu Functions

Here is a listing of the Run Segment Analysis Form menu functions and what they do:

File Menu

Open Database – Click on this to open an existing database. All existing databases will appear in the list box. Just double-click on the name of the database you wish to open. Or, highlight the filename and click on Open.
Exit - This function closes the Run Segment Analysis window and returns you to the Main Form.

Query Database

Structured Query Language (SQL) is a powerful database tool. We can use the "SELECT" statement and the "WHERE" clause to find only the records in your database table that meet with specific criteria. It can be as simple as finding all the records where one condition is met, or where multiple conditions in any number of fields are met. For example, you could want to find only those records where the Density Altitude (DA) was within a certain range AND the 1320' ET was equal to or less than a certain number OR the Relative Humidity (RH) was greater than or equal to some value and more. You decide what you want to see and an SQL STATEMENT will return those records instantly. The arguments (conditions) are set using these OPERATORS

= (equal to)
 > (greater than)
 < (less than)
 >= (greater than or equal to)
 <= (less than or equal to)
 <> (not equal to)

AND
 BETWEEN
 LIKE
 OR

The first part of the SQL SELECT STATEMENT and WHERE clause is hard coded in for you. You just need to pick the field or fields and the arguments. You don't see it, but it looks like this:

```
SELECT * FROM Runs WHERE (field name) (arguments)
```

The asterisk means to SELECT all the records. "Runs" is the name of our database table. When you open the SQL form for the first time you will see a simple statement there by default. It looks like:

```
Event = 'Super Chevy'
```

Very simple. This would return any records where the "Event" field contained the exact text value "Super Chevy". Notice the single quotes around the text string "Super Chevy." In our database there are fields that contain simple text and fields that contain numerical values. There is a rule that when a field contains a text value, you must enclose the value you are searching for in single quotes. In fields that contain numerical data you must NOT use any quotes around the value. Also, if a field name contains punctuation, the value must be enclosed in brackets "[1320]".

There are two List Boxes showing every data field name in the database. One contains the text fields, the other contains the numerical fields. To select the initial field name, double-click on the field name and it will appear as the first field in your SQL statement.

To add a Field or a Condition into the argument box, you can type it in, or left-click on the Field or Condition which performs a select and copy. Move your cursor to the position where you want it entered, right-click and select Paste. A more advanced SQL statement might be something like:

```
[1320'] > 7.20 AND DA < '2000' AND Temp BETWEEN 75 AND 80
```

The program will trap any syntax errors you may make and give you the opportunity to correct them. Once you have an SQL statement that you wish to perform again, you can save it by just clicking on the button "Save Query to List Box". To delete a saved Query, select it and click on the button "Remove Selected Query From List Box." To perform your search, click on "Perform SQLSearch". From the Main Screen, to Cancel the SQL Search and open the full recordset in the database, click on "Query Database" and "Cancel SQL Search."

Custom Report

At times you'll want to view only certain fields in a recordset for easy comparison, especially when using an SQL Search. We've added an Interactive Custom Report that is viewable and printable. You can design a report "on the fly" by clicking on the field buttons, labeled 1 through 12, and selecting a field to include in the report. The report opens the current recordset with some fields. Click on any field button and select one of the listed fields with a left-click, or select "none" if you don't want to include a field in that position. The report is updated instantly. You can print the screen, preview a printer screen, or print the report to your attached printer. Use the File.Open and File.Save functions to save and be able to reuse your custom reports.

Opponent Database

We've added an Opponent Database for those "wheel racers" who need to know the performance capability of their competition. After adding your run to the database click on Opponent Database and "Add New" to enter your opponents performance data using their car number and/or name. The weather data is automatically transferred from your run, or if you are adding records at a later time, the weather data is available by date and time by clicking on Weather Data Retrieval. Weather data can also be entered manually. The Opponent Database is fully searchable using Query Database, Find, and Find Next.

Help Menu

Clicking on Help will load these instructions into a separate Windows Help style window. You can scroll through the instructions or optionally print a copy using your Windows compatible printer.

Screen Display Resolution

RaceLog Pro Lite was designed to work on a minimum display of 800x600 VGA.

Air Fuel Ratio Management

On gasoline burning engines, the air/fuel ratio must be about 12.5 to 1 to predict performance accurately. There is no benefit from running a lean mixture. When using a computer to predict your dial-in, you *want* the car to respond to changes in atmospheric conditions. There must always be enough fuel present to use all of the available oxygen or the car will be unpredictable.

Find a day when the air density is average for the racing season in your area. Then richen the mixture until the car slows down. The car may go faster at first, as it is probably too lean. After this, you shouldn't have to re-jet until the air density changes four (4) per cent or more. By adjusting the fuel mixture for an average air density of 96 per cent, for example, the air can range from 92 to 100 per cent, without having to re-jet. A quick way to check for proper fuel mixture is to check the color inside the headers. This should be a very dark gray, or almost black. If they are white to a light gray, the mixture is way too lean. As the air density changes from week to week, you can actually see the color change. The header color will appear lighter as the air density increases and darker as it decreases. You can also use an Exhaust Gas Temperature (EGT) gauge to evaluate jetting changes. **Call us for more information on our inexpensive digital EGT kits and innovative DataMaster™ data recorders**

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