



Family Software

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RaceLog Pro™ Version 4.0 - Instructions

New features with Version 4.0

This version of RaceLog Pro introduces **TrueWind™ ET Prediction**, another innovation from Family Software. **TrueWind™** is the actual amount of wind force that is capable of affecting your car's performance. TrueWind™ values are used in accurately predicting variations in elapsed time due to changes occurring in wind speed and wind direction. Regardless of the wind direction and total wind speed, if we extract only the head wind or tail wind occurring on the race track, and express that wind force (mph) in positive (head wind) or negative (tail wind) values, then that is TrueWind™. We have always been able to measure just the head or tail wind using a hand held wind meter, and adjust the ET accordingly. In fact, we have been doing just that for almost 20 years. However, for the first time, using TrueWind™, a trailer-mounted weather station can also be used to measure only the actual head or tail wind occurring on the race track! Our PageAire Pro2 software converts the total wind speed, and wind direction, from the anemometer on your trailer station into TrueWind™ values. The ET Predictor uses the TrueWind™ values from your Base Run, the current TrueWind™ values, and a Wind Factor specific to your car, to produce a TrueWind™ adjusted ET, and sends it directly to your pager in the staging lanes. If you are manually entering your weather data, you can still use a hand held wind meter with TrueWind™ ET Prediction.

We have also added a separate ET Predictor screen for eighth mile racers. Previously, eighth mile racers shared the same screen as quarter mile racers. Now, in your database run record, if you enter a zero (0) in the fields for 1000 foot ET and 1320 foot ET, the program knows this is an eighth mile run. When you open the ET Predictor, it will automatically select the 1/8-Mile Mode.

Pager messages received will now indicate the **Pager Identity** P1, P2, P3, P4, or P5. By adding the Pager ID to each message, it will be easy to match a paging message with the instance of RaceLog Pro that sent it. Therefore, if you only have one pager, you can now send simultaneous messages for different cars, or right lane and left lane ET predictions into the same mailbox (Cap Code). The Pager ID will allow you to quickly identify each message without having to use a separate mailbox. Other major new features in this version are an **Import Database Function**, and **Windows Help** feature.

New features with Version 3.0

This latest version of RaceLog Pro will install on all Windows platforms including **XP Professional**. We have added the **Dew Point Temperature** calculation, **automatic weather import/export**, and **paging system** functions to the ET Predictor form. With the optional **PC Interface**, **PageAire Pro** software, and Family Software **Wireless Weather Station**, the new weather can be automatically entered into the program for you every minute. We have also added support for all **Davis Weather Stations**, Altronics PerformAire Weather Center (PWC), and Altronics PerformAire PC (PAPC). The ET Predictor will keep a time log of the weather conditions for any interval that you select. This way, you can return to the pits at any time and retrieve the exact weather conditions that existed when you made your run. With our optional Paging system, the Predicted ET, Predicted Throttle Stop setting, all current weather conditions including Dew Point Temperature, HP Correction, Air Density, Density Altitude, Wind Speed, Wind Direction, directly to you in the staging lanes. Here is an example Page:

P1-ET: 9.006 TS: 1.279 B: 29.68 T: 68.7 RH%: 40 HCF: 1.0315 AD: 96.57 DA: 1183 DP: 43 WS: -5/Tail

Important! Windows Short Date Format Setting

The standard Windows format for date settings is M/d/yy or MM/dd/yy. Some later Window operating systems, such as Windows XP are being installed with the wrong Short Date Setting of M/d/yyyy. This, and most other software, which utilizes the date being maintained in your computer, requires the standard format. To change this setting on your computer, click on **Start**, select **Settings**, click on **Control Panel**, and then double click on **Regional Settings** (Regional and Language Settings on XP). Then, click the Tab marked '**Date**.' Change the **Short Date Style** to M/d/yy or MM/dd/yy, and click Apply and then click on OK.

Installation

To install the program, put **Disk #1** in your floppy drive (or **CD** into your CD-ROM drive) and Click on **Start**, Point to **Settings**, Click on **Control Panel**, and Double-Click on **Add/Remove Programs**. Next, Click on **Install** and Windows will find the file **Setup.exe**. The CD version may automatically start. Click on **Finish** and then follow the instructions that appear on the screen. If Windows reports that “A file is being copied that is older than the one on your computer”, always select Yes, to keep your current file. During installation, Windows always selects the proper choice for you. Usually, if you just press the Enter key at each prompt, the installation will occur without error. For best operation, it should be installed into the default installation directory that is shown,

C:\RaceLog Pro 4.

Note: On some Windows ME systems, you may have to install the program in Windows Safe mode. This is due to a problem with Microsoft's Setup program that only occurs in Windows ME. To start Windows ME in Safe mode, hold down the CTRL key while your computer is booting.

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. You can activate the program by phone, fax, or email. You will need your Registration Number that appears on the reminder screen. If you are registering by email, 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](http://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

You can start the program from your Start Menu or Programs Menu. Click on Start, Point to Programs, and double-click on RaceLog Pro 4.

Desktop Shortcut

If you'd like to install a new shortcut on your desktop for RaceLog Pro 4:

1. Right Click on an empty space on your desktop
2. Left Click on New
3. Left Click on Shortcut
4. Double Click on Browse
5. Locate the folder called RaceLog Pro 4 and Double Click on it
6. Double Click on the File named RaceLogPro4.exe
7. Left Click on Next
8. Left Click on Finish and the RaceLog Pro Shortcut will appear

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 both 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. You can use the built-in weather formulas or your own RaceLog Pro can interface with many trailer stations and weather stations to automatically input the air conditions and do it's computations without any help from the user. It will also interface with Family Software's Weather Paging system to send your predicted ET or throttle stop prediction and all weather conditions directly to the racer in the staging lanes. RaceLog Pro is the only program that incorporates TrueWind™ another innovation from Family Software.

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, 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 a lot of the 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, and Tires if their value is greater than 0. You can then add data and 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. Before saving the record, all the data that has been entered or modified is validated for possible user errors.

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 operation. 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 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 two option buttons will change the fuel mode. The current fuel mode is stored in the record as an "M" or a "G". When you are moving through the records, the program will automatically reset the fuel mode depending on whether it finds a "G" or an "M" 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, Barometer, Temperature, and Humidity, you can calculate the current Horsepower Correction Factor (**Current HCF**), Air Density Index (**ADI**), and Density Altitude (**DA**). If you've entered the Vehicle Weight and Ballast in the Vehicle Settings Box, the Horsepower Corrected Weight (**HPC Weight**) will also be calculated. Just click on the **Air Calculate** button located in the Air Calculation Box. This button is only active in Edit Mode. If you choose to use your own calculations, just enter them manually and don't click this button. The formulas used in this program are the same ones used in our ET Predictor II hand-held computers and ET Predictor™ software. They are the most accurate formulas 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 - **This field is NOT used for entering the track elevation!** Elevation is only used if you are using an **altimeter** or a **corrected** barometer. If you're using an **un-corrected** barometer (absolute pressure), always enter 0 for the elevation. If you have an altimeter, calibrate it to 29.92 In Hg and enter the reported altitude as the elevation. If your area requires that you use a corrected barometer, then you should always enter the number of feet equal to the amount of correction when you calibrated the barometer.

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 f

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 are using one of our supported trailer mounted weather stations, our **PageAire Pro2** software automatically converts the total wind speed and wind direction into the appropriate TrueWind™ values. 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, less 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.

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 and clicked on Air Calculate, 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, click on the **STP Calculate** button. 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.

Note: For eighth mile runs, always enter a zero (0) for the 1000 foot and 1320 foot ET in the Performance Box.

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 match 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 most do not. With most units, you have to subtract the first timer from the second timer to get the actual duration.

Note: If you are using a throttle stop, ALWAYS click on the STP Calculate button AFTER you have entered your Throttle Stop Timer Duration and your Throttle Stop Factor.

Component Runs Box

The program automatically keeps track of the component runs on your engine, transmission, and tires. 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 W.O.T.

Main Form - Menu Functions

Here is a listing of the Main 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.

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 (New) – 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 into the RaceLog Pro 4 folder.

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.

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

Make your Base Run, the one you predicted, the Current Record in RaceLog Pro. Then click on ET Predictor. Based on the information entered under your Base HCF, Base ET, and the New Air Conditions, this program will report a projected ET on a run where you had to hit the brakes or lifted the throttle. Enter the air conditions, from when you made the run, in the New Air Conditions Box. Next, enter the Base SEG (Base Segment) if different than the one shown. The program uses the Base 1000' time and enters it for you under 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' or 60' time for the Base SEG. For the New SEG (New Segment) 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 n

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 Menu

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 Menu

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, or the function can't work. 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 labeled, STP ET #1. Then, enter the timer duration that was used on that run in the field labeled TSD #1. Next, enter the STP ET and timer duration from the second run and click on the Calculate button.

Pager Menu

Working Directory – This function allows you to locate and set the folder (directory) where the Paging system expects to receive the data to be paged. You can select the drive by clicking on it and then the folder from the list box by double clicking on the folder. Your selection appears in the selection text box. To accept the selection, click on OK. To cancel the operation, click on Cancel. The current working directory (PWD) appears at the upper right hand corner of the ET Predictor screen. To communicate with the PageAire Pro software, you must set the working directory (PWD) to the folder where PageAire Pro is installed. By default this folder is:

'C:\PageAire Pro 2'.

In the case of multiple users, you can have multiple instances of RaceLog Pro installed into different folders, on the same computer, and send pages to different pagers with just one paging system. In this case, PageAire Pro has two extra receive buffers, sub-folders **dest2** and **dest3**. On your second instance of RaceLog Pro, set the PWD to **'C:\PageAire Pro 2\dest2.'** On your third instance of RaceLog Pro, set the PWD to **'C:\PageAire Pro 2\dest3.'** This is done to remove any chance of conflicts between all the pages being sent.

Interval (In minutes) - Select the interval as to how often you wish to be paged by just clicking on one of the intervals shown in the menu list.

Set Pager Name – Select the Pager Name that you want the Paging system to use. The Paging Name is used to match the pager Cap Code with the correct paging data.

View Pager Log

This function opens the paging log window. You can open and close the window as often as you want and the data will remain. However, once you close the ET Predictor window, the paging log will be erased.

Auto Button

The Auto Button places the ET Predictor into Automatic Update mode. In this mode, the weather data is retrieved automatically about every 15 seconds to one minute, depending on your weather station. All co

done without any input from the user. All functions are locked out, except for the OFF button, so that pressing a key on the keyboard or moving the mouse will not affect the operation of this mode. Push OFF to return to manual entry mode.

Auto Checkbox – The checkbox next to the Auto button shows if an error has occurred in the Auto function. A check will appear in the box and a description of the error will appear in the Paging log.

Page Button

The Page Button starts the paging process. If ET Predictor is not yet in Automatic Update mode, it will select this mode for you. Based on the Paging Interval selected, the paging data will be sent to the Working Directory.

Tip: Even if you don't have a Paging system, you can set the working directory to just 'C:/RaceLog Pro 4', or any other legitimate directory, and use the Page button to log the weather conditions based on the Paging Interval. Use the time of day on your ET slip to find the exact weather conditions when your run was made.

Page Checkbox – The checkbox next to the Page button shows if an error has occurred in the Page function. A check will appear in the box and a description of the error will appear in the Paging log.

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 plus (+) or minus (-) variance of each segment comparison.

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.

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 was designed to work on both 800x600 and 640x480 VGA displays. However, the appearance of some screens is better at a resolution of 800x600. There is no reason to use less than an 800x600 resolution in Windows unless your hardware won't support it. To check your display settings in Windows, click on Start, select Settings, click on Control Panel, and double-click on Display. Next, click on the Settings Tab where you can adjust the screen resolution in the Screen Area Box. When done, click on OK.

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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