# FireAway

## User Manual

Version 2.0
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# About This Manual

This user manual is a work in progress. For the most part, we have tried to make the software as user friendly as possible, and if you are already familiar with the terms and concepts used, then the software is pretty much self explanatory. A general familiarity with the software package BEHAVE for PC's is very helpful.  However, even though many people don't read user manuals, we want to write one that is clear and answers all your questions. Until we have written the "perfect user manual", please feel free to email or call us and ask any question that arises.

We will be posting a list of frequently asked questions and more tutorial information on the web site as soon as it is available.

## Palm vs Pocket PC Versions

FireAway now runs on both Palm and Pocket PC (Windows CE 3.0) handheld devices. Both versions are very similar. If the screen snapshots don't look exactly right, it was probably taken on a different platform than what you are using. We will note any significant differences in this manual.

## For technical support

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# Installation - Palm handhelds

**System Requirements**

To install and use FireAway on your Palm device, you will need:
•Palm OS 3.0 or higher (Palm III or later handheld model)
•Approximately 100 KB of RAM to install, about 500K free to execute

Once you have downloaded the application, installing the software onto your handheld is easy – just follow the three easy steps below. This requires the desktop software that came with your handheld device since a HotSync is necessary.

**Step One:** Unzip the file
**Step Two:** Select the files you want to install
**Step Three:** HotSync your PDA to install the files

**Step One: Unzip the file**

If you received your software on a CD-ROM, skip to Step Two.

When you download the FireAway application, the result is probably a file ending with ".zip" such as "FireAway.zip" or "Bundle.zip". This is a compressed, or zipped,  file format so you need to decompress the file. Some browsers may automatically decompress the files for you, so if you see a folder containing FireAway.prc then you can skip this step.

To decompress a zipped file, you need a program like WinZip or Alladin Expander (Windows), or Stuffit Expander (Macintosh). Select the ".zip" file with one of these programs and the file will be decompressed.

**Step Two: Select the files you want to install**

The Palm Desktop software is used to select files to be installed the next time you Hotsync. Your Palm User Manual should provide thorough instructions for how to do this. Any file ending with ".prc" is a Palm file that you should mark to be installed on your handheld. You cannot open a ".prc" file on your desktop computer, and you cannot install a file ending with ".zip" on your handheld.

FireAway requires "FireAway.prc" and "MathLib.prc" to be installed on your Palm devide.

**Step Three: HotSync your handheld to install the files**

To install the files, HotSync your handheld as usual by placing your handheld in the

cradle or connecting the HotSync cable and pressing the HotSync button. Once the HotSync is complete,you will see "FireAway" in your applications window in the "unfiled" category. You won't see "MathLib" there, however. To verify that "MathLib" was installed, you need to select the "Info" menu item. (On older Palm devices, use the "Memory" program to view all the installed files)

# Installation - Pocket PC (Windows CE) handhelds

**System Requirements**

To install and use FireAway on your Pocket PC device, you will need:
•Windows CE 3.0 or later (also called the Pocket PC; devices such as the Compaq iPAQ and HP Jornada; does NOT run on "Handheld PC" or "Palm size PC" devices)
•Approximately 70 KB of RAM to install, about 500K free to execute

NOTE: For best performance and reliability, we create separate versions of this program for each processor used by Pocket PC devices. This means that if you have a Pocket PC device with a StrongARM processor for example, like the iPAQ, you need the StrongARM version of FireAway. If you get a message like "this is not a Pocket PC program" after installing, then you might have installed the wrong version for your device.

**Step One:** Unzip the file
**Step Two:** Copy the file to the special folder on your desktop that ActiveSync uses to mirror your Pocket PC device
**Step Three:** Syncronize to the handheld (in most cases this is done automatically when you connect your Pocket PC to your PC)

**Step One: Unzip the file**

If you received your software on a CD-ROM, skip to Step Two.

When you download the FireAway application, the result is probably a file ending with ".zip" such as "FireAway.zip" or "Bundle.zip". This is a compressed, or zipped, file format so you need to decompress the file. Some browsers may automatically decompress the files for you, so if you see a folder containing FireAway.exe then you can skip this step.

To decompress a zipped file, you need a program like WinZip or Alladin Expander (Windows). Select the ".zip" file with one of these programs and the file will be decompressed.

**Step Two: Copy the .exe file to special folder**

When you installed Activesync on your PC, you probably created a special folder that contains copies of all your Pocket PC files. When you copy a file inside this special folder, it will be copied to the Pocket PC during syncronization. Consult your ActiveSync documentation for details on how this works.

Make sure you copy "FireAway.exe", not "FireAway.zip" to the Pocket PC.

**Step Three: Syncronize with Pocket PC**

Normally, you just connect your Pocket PC to your PC and syncronization occurs automatically. Consult your ActiveSync documentation if your system is set up differently.

# General Information

When it makes sense, results from previous calculations will be carried forward as inputs for future calculations. For example, if you first calculate fuel moisture in the Fuel Moisture screen, and then go to the Behavior screen, the 1 hr fuel moisture input will already be filled in with the previous result.

In most numeric input fields, you can use the up and down scroll buttons to increment and decrement the values. Just tap in the field you want to change first, then use the buttons. [Palm only]

In the current version, our firefighting software will give the proper results only if you enter input values that make sense. If you enter an RH that is more than 100, for example, you will get unpredictable results. If you enter a wet bulb temperature that is greater than the dry bulb temperature, the resulting RH output will not be valid.

When FireAway is first launched, you see the Startup screen. Just tap the "MENU" button (or with version 3.5 or later of PalmOS, tap the "FireAway" label at the top of the screen) to see all your menu options. On the Pocket PC, the menus are always visible at the bottom of the screen.

FireAway requires a companion file called "MathLib.prc" in order to run. If it is not installed you will get an error message when you run FireAway. [Palm only]

Help buttons, labeled "?", provide online help and longer descriptions of inputs.

You can "log" information at any time to keep a record of inputs and outputs. On the Plam, there are "log" buttons for this purpose; on the Pocket PC, you select the "Log Data To File" menu item. Data is stored in a permanent log file. See the "Log" section in this manual for more information.

You can store up to 5 sets of data and quickly switch between them. On the Palm, there are popup menus named "Area" and you can select A, B, C, D, or E. On the Pocket PC, you use the "Data Sets" menu to switch data sets.

# Weather

By entering the Dry Bulb and Wet Bulb measurements, as well as your current elevation, the Relative Humidity and Dewpoint will be calculated. These numbers are determined by a commonly used mathematical formula. If you are familiar with a standard wildland belt weather kit, this will perform the same function as the table lookup on the chart provided in the kit.

The Dry Bulb temperature is just the outside temperature. The Wet Bulb temperature is determined by using a belt weather kit.



[Palm Only]
Beneath the calculated RH and Dewpoint, you can enter additional weather observations. The "helper" buttons at the bottom of the screen let you quickly enter common weather terms. Of course, you can write in anything you want manually.

# Predicted RH

By entering the current RH and temperature, as well as the predicted temperature, you can get an idea of the predicted RH as well (assuming the predicted temperature is accurate). This number is determined by using a common mathematical formula.

The predicted RH is fairly accurate as long as the dewpoint stays constant, or as long as you remain within a stable air mass. If a weather front moves through, this will change the dewpoint, and the predicted RH will not be accurate.

| Predicted RH | |
|---|---|
| Current RH (%) | 25 |
| Current Temp (F) | 80 |
| Predicted Temp (F) | 70 |
| **Predicted RH (%)** | 35 |

# Fuel Moisture

This module determines the 1 hour fuel moisture, or fine dead fuel moisture (FDFM), based on weather and topographical factors. FDFM is the level of moisture contained in those dead fuels less than 1/4" in thickness and this measurement can be used to predict fire behavior. The FDFM is determined using the tables in the Fireline Handbook.

The Time input is the approximate time of day. For example, if it is past noon but before 2:00 PM, select "1200+" in the popup menu. This calculation works best for daylight hours. The Month will automatically be selected for you as the current month.

The Aspect input is the direction that a slope is facing. A North aspect slopes down toward the north. If you are on level ground, then select South. The Slope input is the approximate degrees of slope (level ground = 0 slope).

Check the ">50% shaded" checkbox if the fuels in your vicinity are shaded most of the time.

FDFM and the Probability of Ignition (PIG) will be calculated based on your inputs. The PIG is an approximation of how likely a spot fire will occur if an ember lands in your area.

Click the help button ("?") to get a description of burning conditions based on the calculated FDFM.
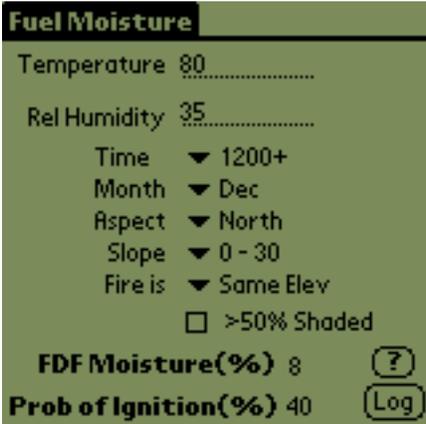
# Midflame Windspeed

Midflame Windspeed is a factor that is used to predict fire behavior, and is a required input in the Behavior module. Often you may be given the 20 foot windspeed with a weather forecast, and this will determine the Midflame Windspeed using that figure. The calculation is based on a table lookup as found in the Fireline Handbook.

Enter the 20 foot windspeed, and select the appropriate Fuel Model and Wind Sheltering. Help buttons ("?") will give you more information to help you determine the correct inputs.
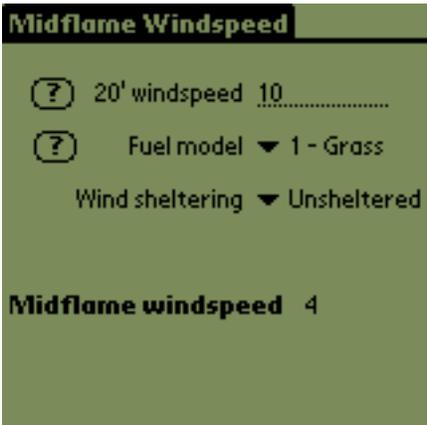
# Behavior

The Behavior module involves some complex calculations to determine fire behavior. The inputs and calculations are based on the commonly used software program called BEHAVE (specifically the FIRE1 option in the DIRECT module). This is a very complex piece of software and you should already be familiar with its use. There are detailed user manuals available which describe the BEHAVE software.

In the top right corner, there is a popup menu containing items such as "Area A", "Area B", etc. This allows you to manipulate several sets of data at once. For example, you might want to track the fire behavior for different areas, or during different times of the day. On the Pocket PC, you use the "Data Set" menu rather than a popup menu on this screen to select different data sets.

After selecting your Fuel Model, you must enter one or more Fuel Moisture numbers. The 1 hour fuel can be calculated using the Fuel Moisture screen, but you should be given the other numbers ahead of time. As a rule of thumb, the 10 hour fuel moisture can be determined by adding 1 to the 1 hour fuel moisture, and likewise just add 1 to the 10 hour fuel moisture to determine 100 hour fuel moisture.

The wind direction is entered as the degrees from upslope. This would be "0" if the wind is blowing directly upslope.

Currently all calculations are done for the direction of max spread.

After all inputs have been entered, click the "Outputs" button to calculate the fire behavior parameters for this data set.
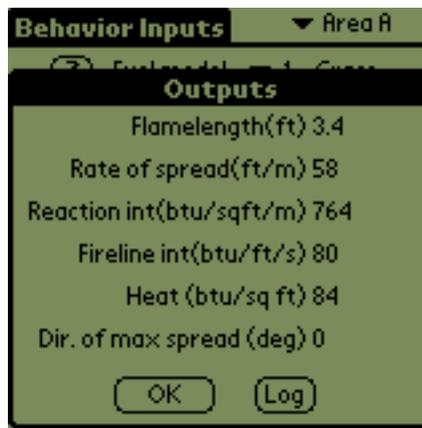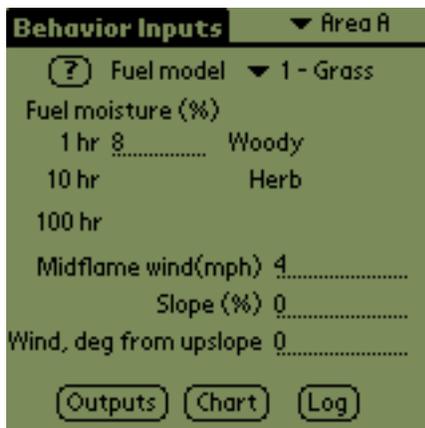
To see the fire behavior presented on a Hauling chart, click the "Chart" button. [Palm only]
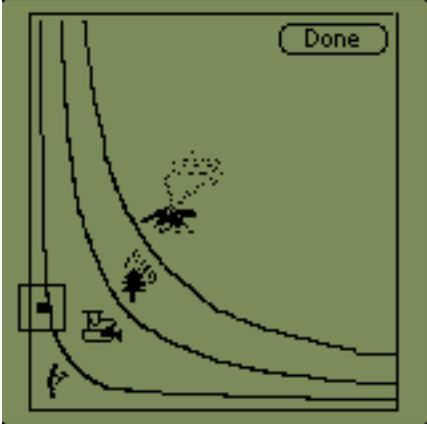
# Log

The Log feature lets you store data values so you have a record for later. You can copy this data to a desktop computer and print this if you like. When you invoke the log feature (use "log" buttons on Palm or menu item on Pocket PC), you can select what values you want to save. You can even change values at this time.



The current date and time is automatically attached to each log entry.

The log file is handled differently on Palm and Pocket PC devices, so read the remainder of this section for your platform:

**Log Files On Palm Devices**

To see the current log file, select "Log Window" from the menu bar.

From the Log screen you can export the log information to the Memo Pad by tapping the "Export to Memo Pad" button. This will also clear the Log screen. The advantage of exporting to the Memo Pad is that during your next HotSync operation with your desktop computer, all the log information will be copied to your desktop computer. From here you can print or save the information.

Each Memo Pad memo is limited to 4000 characters, and so the Log file is as well. An indicator in the top right corner shows you how close you are to being "full". After you are full, you need to export or clear the Log file in order to add more log entries. You can export to the Memo Pad over and over again, and new memos will be created each time.

Log entries have TAB's between them, so once you've Hotsynced to your desktop, you can copy/paste the data into a spreadsheet.

## Log Files On Pocket PC Devices

Each time you log more information, it is appended to the bottom of a file named "FireAway Log.txt" in your "My Documents" folder. After syncronizing with your PC, you can open this with NotePad and view or print it. If you want to keep a permanent archive, you can rename the file to smething else, then FireAway will recreate an empty log file named "fireAway Log.txt".

NOTE: Due to a technical issue, you cannot open and view this log file with Pocket Word. You need to syncronize with your dekstop computer and view it there. Hopefully this will be resolved in a future version.

# Reference

The Reference menu contains useful information such as fire behavior rules of thumb, the LAL (lightning activity level) index, the Haines index, and Red Flag warning criteria.