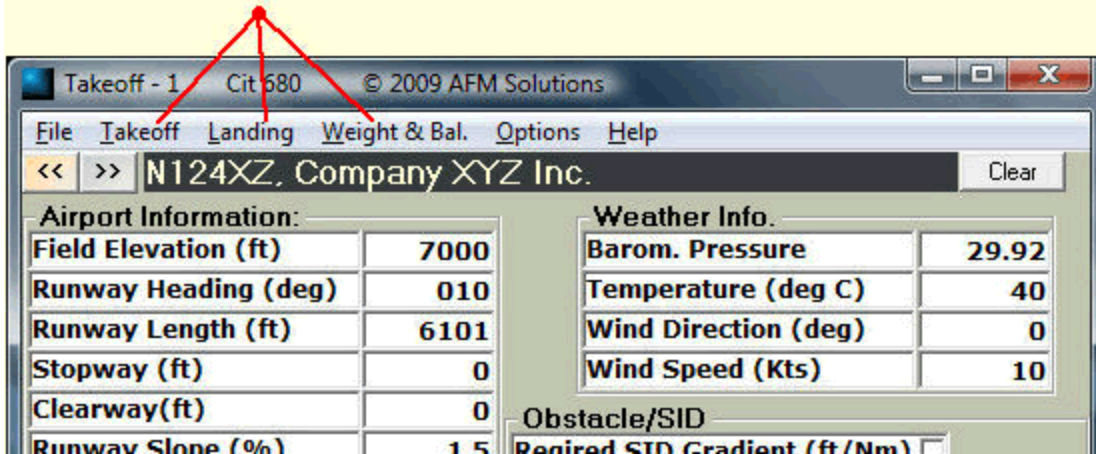
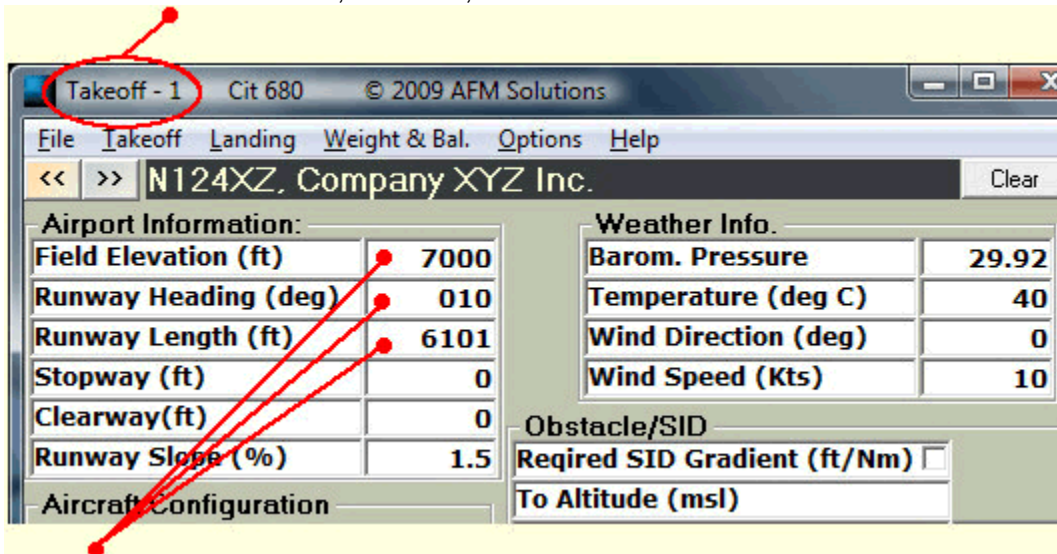


For additional help please contact AFM Solutions at info@afmsolutions.com

You can choose **TAKEOFF**, **LANDING** or **WEIGHT & BALANCE** from the top menu



When you click on Takeoff you will see a screen similar to this one. This label indicates the active screen. There are 3 available screens: Takeoff-1, Takeoff-2, Takeoff-3



Begin by typing in the required field such as the Field Elevation in feet, Runway Heading in degrees (i.e. for a North Runway you may type either 0 or 360)

After each entry you may either press the "Enter" key or use the "Arrow Down" key. To go back up and change a value simply use the "Arrow Up" key, and so on.

The Altimeter Setting value can be entered in either standard units or metric. For example if the current pressure is 29.92 in. you may either type "29.92" or "2992" or in metric "1013". The result will be the same.

Our programs no longer use the label "Barometric Pressure" since it can be misleading, we use "Altimeter Setting" to be more consistent.

Weather Info.	
Barom. Pressure	29.92
Temperature (deg C)	40
Wind Direction (deg)	0
Wind Speed (Kts)	10

Obstacle/SID	
Required SID Gradient (ft/Nm)	<input type="checkbox"/>
To Altitude (msl)	
Obstacle True Height (ft)	<input checked="" type="checkbox"/> 380
Obstacle Distance (ft)	15400

Weight (lb)	22900	<input type="checkbox"/> Use	<input type="button" value="Go"/>
-------------	-------	------------------------------	-----------------------------------

If there is a required SID gradient or an obstacle:

click the corresponding **checkbox** and the view will automatically expand to allow to enter those values.

The Obstacle **Height** and **Distance** are measured from the Departing End of the Runway (**DER**)

Click on the “Go” button when you are ready to compute. The weight field can be left blank (or “0”) and the computer will produce the answers.

If the weight was left blank the computer will produce answers based on the best (highest) weight allowed for the given conditions and constraints. If you entered a value in the weight field the computer will ignore that value unless the “Use” box is checked.

With the “Use” box checked the computer will attempt to use this value in its computations. However, if it finds that the weight must be lower due to the current constraints (obstacle, runway length etc.) it will use the lowest allowable weight.

Any data you enter will be **saved** and displayed the next time you start the program **as long as** you exit using “File” menu.

The screenshot shows the software interface with a menu open. The menu items are: Open, Save As, Print, and Exit. The 'Exit' option is highlighted with a red arrow. In the background, the 'Weather Info.' table is visible with the following data:

Weather Info.	
Barom. Pressure	29.92
Temperature (deg C)	40
Wind Direction (deg)	0

Below the menu, the 'Obstacle/SID' table is also visible:

Obstacle/SID	
Obstacle True Height (ft)	7000
Obstacle Distance (ft)	12000

A red arrow points to a 'Clear' button in the upper right corner of the form.

To clear all fields click on the “Clear” button in the upper right part of the form.

For help with printing please click on the “PRINTING” help button above.

Takeoff:

For basic help please refer to the “**Quick Start**” section first.

Whenever you click on “**Go**” the program first checks all the values entered. If a value lies outside the allowed range the program stops and asks you to enter a correct value.

For example if you are taking off from an airport with a **runway slope of 1.5% downhill** (which you would type as -1.5), but you accidentally entered “ -15 ” the program would halt and ask you to retype the runway slope value correctly. The Citation 680 manual allows runway slope **values ranging from -2% to $+2\%$** (or 2% downhill to 2% uphill).

The same is true for all the other fields. The program begins to calculate the airplane’s performance only if all the values entered are valid.

If **Wet** Runway is selected the AFM requires us to check both dry and wet takeoff distance and use the **greater** of the two. In the following example the dry value was greater than the wet value so there is a reminder that the dry value had to be used.

Takeoff - 1 Cit 680 © 2009 AFM Solutions

File Takeoff Landing Weight & Bal. Options Help

<< >> N124XZ, Company XYZ Inc. Clear

Airport Information:		Weather Info.	
Field Elevation (ft)	7000	Barom. Pressure	29.92
Runway Heading (deg)	010	Temperature (deg C)	40
Runway Length (ft)	6101	Wind Direction (deg)	0
Stopway (ft)	0	Wind Speed (Kts)	10
Clearway(ft)	0		
Runway Slope (%)	1.5		

Aircraft Configuration

- Flaps 15 deg.
- Flaps 7 deg.
- Anti-Ice Off
- Anti-Ice On

Runway Condition

- Dry
- Wet

Obstacle/SID

Required SID Gradient (ft/Nm) []

To Altitude (msl)

Obstacle True Height (ft) 380

Obstacle Distance (ft) 15400

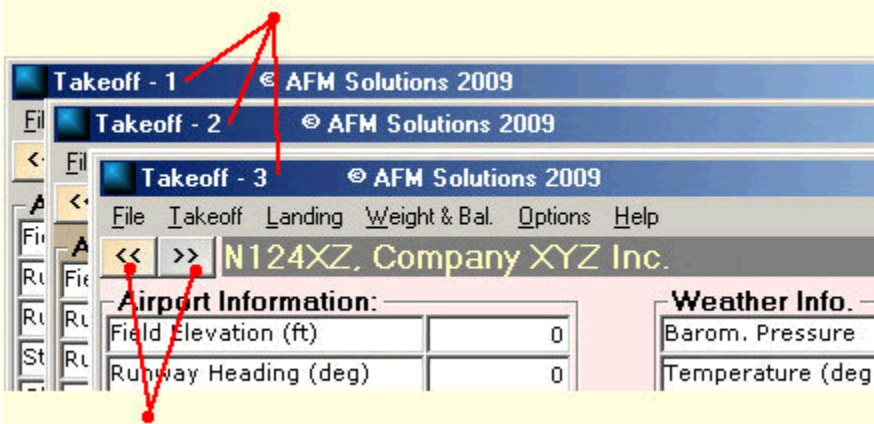
Weight (lb) 22900 Use Go

Field Length Limited!

TAKEOFF - Main, For N124XZ
© 2009 AFM Solutions

Max TOW Allowed	24000 (lb)	U1	97 (Kts)
T.O. Field Length	6101 (ft)	UR	103 (Kts)
Net 2nd. Seg. Gradient	4.6 (%)	U2	109 (Kts)
T0/Go Around Thrust	97 (%)	Venr	180 (Kts)
(Dry T.O.D. Data Used)		Return Vref..	103 (Kts)

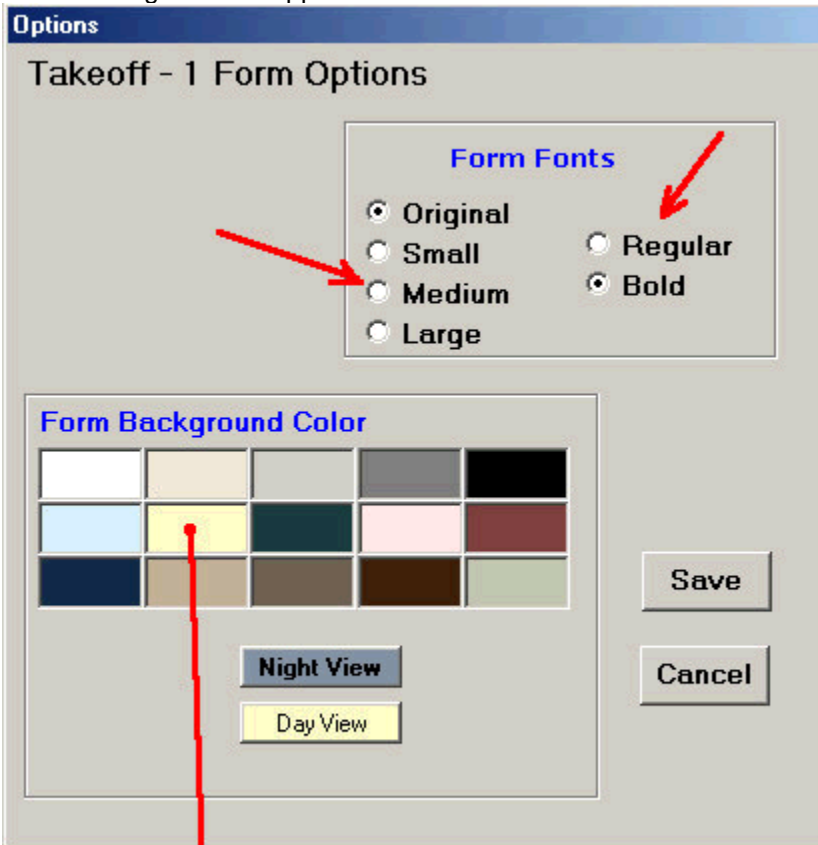
The software allows you to work on **three different** airports at the same time. They could be the departure airfield, destination airport and an alternate airfield.



The **Next** and **Previous** buttons will take you from one screen to the next.

A different color can be selected for each screen. To do so select “**Options**” from the top menu first, then select “**Colors and Text**” and then “**Select Size and Color**”

The following form will appear



Click on the **color box** of your choice and see the changes on your Takeoff/Landing screen. To keep the new color click “**Save**”, to return without saving your choice click “**Cancel**”
You may also select a different form size or a different font type.

Click on “**Night View**” instead of other colors to see a darker style form for low light situations



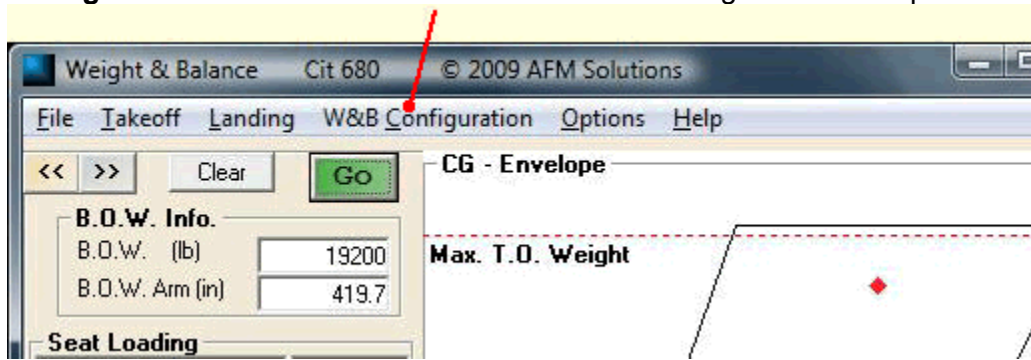
Click on the “Day View” button to exit the *night view* mode when it is no longer needed.

Landing:

Enter data the same way as you would on the Takeoff screen.
When finished entering values just click on the “**Go**” button to display the answers.

Weight & Balance:

The first thing to do is to change the setup to match your airplane's configuration. Click on the "W&B Configuration" menu in order to access the form through which the update is done.



The following form will appear. Make all the necessary changes and then click

Weight & Balance Configuration Setup Cancel Save

B.O.W. Info.
B.O.W. (lb) 19200
B.O.W. Arm (in) 419.7

Number of Stations
Number of Seats (including pilots)... 10 (Max. 24)
Number of Baggage Areas... 4 (Max. 10)

Seat Stations: Names and Arms
Please Enter Seating Area Labels and Seats CG Arms in Inches

1	Pilot 1	137.28	13	Passenger Seat 11	0
2	Pilot 2	137.28	14	Passenger Seat 12	0
3	Passenger Seat 1	239.03	15	Passenger Seat 13	0
4	Passenger Seat 2	239.03	16	Passenger Seat 14	0
5	Passenger Seat 3	287.15	17	Passenger Seat 15	0
6	Passenger Seat 4	329.15	18	Passenger Seat 16	0
7	Passenger Seat 5	330	19	Passenger Seat 17	0
8	Passenger Seat 6	331	20	Passenger Seat 18	0
9	Passenger Seat 7	332	21	Passenger Seat 19	0
10	Passenger Seat 8	333	22	Passenger Seat 20	0
11	Passenger Seat 9	334	23	Passenger Seat 21	0
12	Passenger Seat 10	335	24	Passenger Seat 22	0

Baggage Stations: Names and Arms
Please Enter Baggage Area Labels and Baggage CG Arms in Inches

1	Nose Cone Area	15.1	6	Baggage Area 6	555.0
2	Rear 1	488.23	7	Baggage Area 7	0
3	Rear 2	541.95	8	Baggage Area 8	0
4	Baggage Area 4	542.1	9	Baggage Area 9	0
5	Baggage Area 5	555.0	10	Baggage Area 10	0

"Save" to permanently save the information or click on "Cancel" to return to the main W&B screen.

You can make changes to the following

Basic Operating Weight in pounds and BOW Arm in inches

Total number of seats including pilots all passengers, any jump seats etc.

The fields containing names of seats and baggage areas can be renamed here.

Seat Arms and Baggage Arms in inches

Weight & Balance Configuration Setup [Cancel] [Save]

B.O.W. Info. **Number of Stations**

B.O.W. (lb) 19200 Number of Seats (including pilots).... 10 (Max. 24)

B.O.W. Arm (in) 419.7 Number of Baggage Areas..... 4 (Max. 10)

Seat-Stations: Names and Arms
Please Enter Seating Area Labels and Seats CG Arms in Inches

1	Pilot 1	137.28	13	Passenger Seat 11	0
2	Pilot 2	137.28	14	Passenger Seat 12	0
3	Passenger Seat 1	239.03	15	Passenger Seat 13	0
4	Passenger Seat 2	239.03	16	Passenger Seat 14	0
5	Passenger Seat 3	287.15	17	Passenger Seat 15	0
6	Passenger Seat 4	329.15	18	Passenger Seat 16	0
7	Passenger Seat 5	330	19	Passenger Seat 17	0
8	Passenger Seat 6	331	20	Passenger Seat 18	0
9	Passenger Seat 7	332	21	Passenger Seat 19	0
10	Passenger Seat 8	333	22	Passenger Seat 20	0
11	Passenger Seat 9	334	23	Passenger Seat 21	0
12	Passenger Seat 10	335	24	Passenger Seat 22	0

Baggage-Stations: Names and Arms
Please Enter Baggage Area Labels and Baggage CG Arms in Inches

1	Nose Cone Area	15.1	6	Baggage Area 6	555.0
2	Rear 1	488.23	7	Baggage Area 7	0
3	Rear 2	541.95	8	Baggage Area 8	0
4	Baggage Area 4	542.1	9	Baggage Area 9	0
5	Baggage Area 5	555.0	10	Baggage Area 10	0

Once the update is complete and you are back on the main screen you may type in all the weights. If any of the available seats or baggage areas is not used type 0 in those fields.

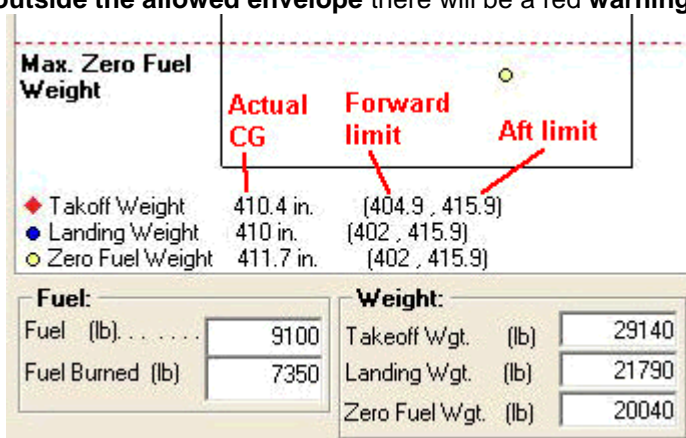
Next type in the fuel quantity in pounds, and the fuel burned.

To compute the answers click on the "Go" button. The program will display the **Takeoff Weight**, **Landing Weight** and **Zero Fuel Weight** in the form of little dots on the CG Envelope graph.

Their values in pounds will be displayed below the drawing.

Their respective **legend symbols** and **CG values** will be displayed right below the graph along with the **Forward CG Limit** and **Aft CG Limit**.

If any of the values are found to be **outside the allowed envelope** there will be a red **warning** message near the top of



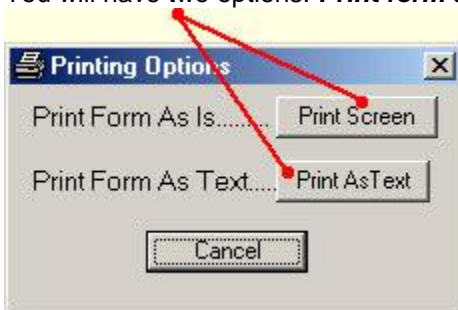
the screen alerting you to that effect.

Printing is very simple:

When you are ready to print the page you are working on first click on the “**File**” menu then select “**Print**” from the dropdown menu.



You will have two options. **Print form as is** or **Print form as text**



Print form as is will simply print the current form as a graphic in color (if using a color printer) exactly the way it appears on your screen.

Print form as text will send the data to the printer in the text format with no graphics (usually faster than the other option).

Saving Your Data to a File: (Creating your own database)

After you've typed all the necessary information it can be saved to a file in two distinct ways.

Method 1: Short term solution. If for some reason you must close the program and come back to it a few minutes later, your data will automatically be saved as long as you select "**Exit**" from the "**File**" menu. The next time you start the program it will go directly to the last form you were on. All the previously typed data will still be there exactly as you left it.

If you click on the "**Clear**" button at any time, the data on that form will be lost unless you exit the program using the "**X**" button in the upper right. **X-ing out bypasses** the automatic save feature and the changes are not saved.

Method 2: Long term solution. If you will be using the same airport a few days or weeks later, you can save the airport information to a file. This file can later be retrieved and will keep you from having to retype the information that does not change from day to day.

The weather information, runway condition and flaps settings **are not** saved.

While you are on the **Takeoff-1**, **Takeoff-2** or **Takeoff-3** screen, by going to the "**File**" menu and selecting "**Save as**" the following information will be saved to a file of your choice:

- **Field Elevation**
- **Runway Heading**
- **Runway Length**
- **Stopway** (some programs do not use this information)
- **Clearway** (some programs do not use this information)
- **Runway Slope**
- **Required SID Gradient (ft/Nm)**
- **To Altitude (msl)**
- **Obstacle True Height**
- **Obstacle Distance**
- **Airport Description**

In order to retrieve this information later, select "**Open**" from the "**File**" menu and click on a file from a list of previously saved files by you.

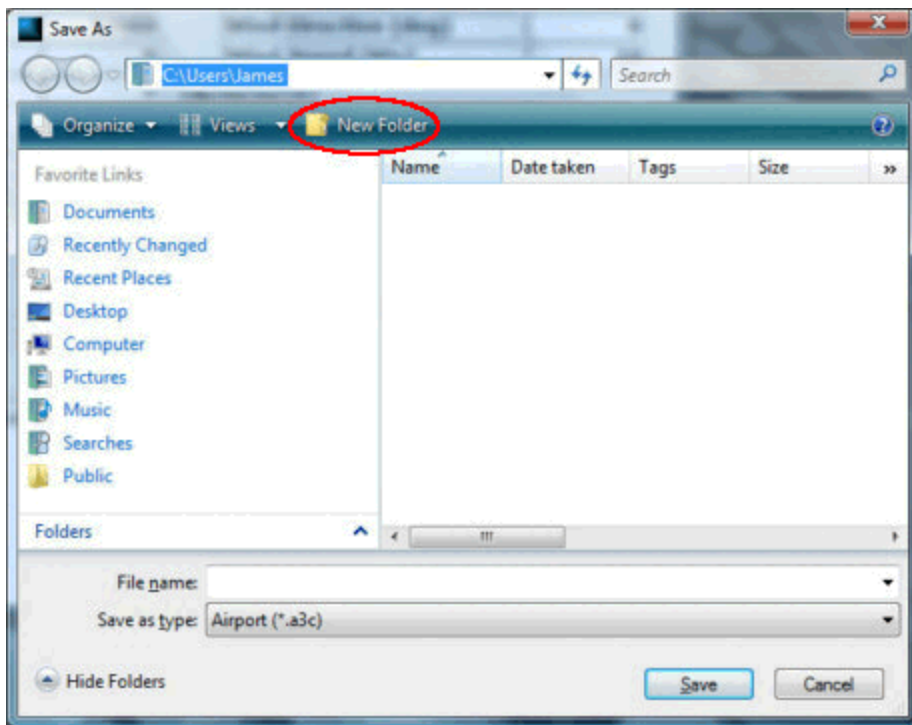
If you open a file while you are on **Takeoff-1** screen the data will be loaded into **Takeoff-1** form. To use this same data in **Takeoff-2** screen, switch to the **Takeoff-2** screen and select "**Open**" from the "**File**" menu. The same is true for **Takeoff-3** screen.

A suggestion on how to name your files: You can easily create your own database of frequently use runways by following **Method 2** above.

Example:

If you are familiar with the Windows Operating System you may first create a folder of your choice where the files are going to be saved. It could be, for example, a new folder in "My Documents" named "My Airports". After starting your AFM Solutions program and clicking on "**Save as**" simply go to that folder and save your file in it.

If you haven't created a folder for that purpose yet, no problem, after clicking on "**Save as**" just click on the "**New folder-Icon**" in the Save as Dialog Window. Once you've created a new folder of your choice save your data to a file.



Name your file using the airport 3-letter identifier and the runway of interest. For instance, if you are taking off from “E38” which is in Alpine, Brewster County, TX and the intended runway is Rwy 01 (with a heading of 010 deg. and Runway Slope = -1.08), name your file “**E38_01**”. If you will be taking off or landing using the opposite runway (heading 190 deg. and Runway Slope = +1.08) save the data as “**E38_19**”. You may type the airport name in the field just above the output text box. For example type “E38 - Alpine, Brewster County, TX” and it will be saved along with Field Elevation, Rwy Heading etc.

If you fly out of Dallas Fort Worth in Texas often, your saved files might look like

“**DFW_13L**”
“**DFW_13R**”
etc...

Using the integrated Airport Database: (US Airports Only)

The database is a list of airports in the U.S.A., Hawaii, Puerto Rico and the Virgin Islands.

The database form can be accessed from two places, any Takeoff screen or any Landing screen. You can find it either under the “File” menu or the “Airport” menu.

It is as easy as 1-2-3:

1. First enter the airport ID such as “ASE” for Aspen, Colorado, or “DFW” for the Dallas Fort Worth International.
2. Click on the “Search” button to retrieve the airport information. Runways less than 2000 ft in length are not stored in the database.
3. From the “Select Runway” drop-down list select the runway want and then click on “Done”.

The screenshot shows the 'Airport Data' window with the following fields and values:

- 1** (Annotation pointing to the Airport ID field): Airport ID: ASE
- 2** (Annotation pointing to the Search button): Search
- 3** (Annotation pointing to the Select Runway dropdown): Select Runway

Other visible information in the form:

- Airport Location: (ASE) ASPEN-PITKIN CO/SARDY FIELD
- Effective Date: 2/11/2010
- City, State: ASPEN, CO
- Airp. Elevation: 7820 ft
- Mag. Variation: 12E (1990)
- Airp. Latitude, (Lat. sec.): 39-13-23.4000N, (141203.4000N)
- Airp. Longitude, (Long. sec.): 106-52-07.9000W, (384727.9000W)
- 1 Runway--
- Fuel Available: 100LL, Jet A1+
- Bottled Oxygen Type: HIGH

The list of available runways will look similar to this:

The screenshot shows the 'Airport Data' window for BOS with the 'Select Runway' dropdown menu open. The dropdown menu lists the following runways: 15R, 33L, 04R, 22L (highlighted), 04L, 22R, 09, and 27.

Other visible information in the form:

- Airport ID: BOS
- Airport Location: (BOS) HOWARD LAWRENCE I
- Effective Date: 2/11/2010
- City, State: BOSTON, MA
- Airp. Elevation: 20 ft
- Mag. Variation: 16W (1950)
- Airp. Latitude, (Lat. sec.): 42-21-46.7000N, (152566.7000N)
- Airp. Longitude, (Long. sec.): 071-00-23.1000W, (255666.1000W)
- 6 Runways--
- Fuel Available: 100LL, Jet A
- Bottled Oxygen Type: HIGH/LOW
- Bulk Oxygen Type: HIGH/LOW
- NOTAM Service: Yes
- NOTAM Facility ID: BOS
- UNICOM Frequency: 122.95

By clicking on “Done” the program will copy the airport information into the form you are currently using.