HELP FOR TRAFFIC PATTERNS

PURPOSE: The Traffic Patterns App is used to review flight in the traffic pattern.

Use the Traffic Pattern App when you would like to be able to view your Traffic Pattern location with reference to local landmarks. This makes teaching the various positions or locations in the pattern much easier to grasp because you are looking at the actual terrain and local landmarks.

You can also use this App to demonstrate the changes in pattern location based on changing several variables that influence aircraft position.

This is not a flight simulator or flight planning tool it is a Universal App used to facilitate study and discussion of the local traffic pattern.

How to Use the Traffic Patterns App

Start the App, wait a moment for the database to load, then take a look at the currently selected traffic pattern. Select a new Airport and/or runway by tapping the buttons at the top-left.

Set up the parameters for drawing the pattern using the list at the bottom of the screen or use the Options page to view the complete option list.

When you have the view you like use the Expand button to maximize the map for easier viewing.

Use on the iPad vs. the iPhone

The Traffic Patterns App is a Universal App. That means the same App will run on both your iPad and iPhone. Obviously the screen sizes are different on these devices so accommodations are made so the App will run well on both.

The App is easier to use and easier to view on the iPad but will work on the iPhone. The Expand screen is recommended especially for use on the iPhone to increase the amount of available screen space for the map.
Key Features

Airport and Runway Selection

Select an Airport by tapping the blue Airport ID at the top-left of the main screen.

On the Selection screen type a few characters of the airport ID or city. As you type a list of airports will appear for that contain the characters typed. Touch an airport to select it for display.

Touch the Runway ID to see the list of runways for the airport.

NOTE: The FAA does not supply actual location for all runways. These are identified with the note Location Unknown. These unknown locations are mostly for closed runways or helipads.

Expand

Use the Expand Button to move everything off the screen except the map. This is especially useful on the smaller iPhone screen but it is nice on the iPad too. It gives you more screen real estate for pattern viewing.

Distance from the Runway on Downwind

The Green and Blue lines on each side of the runway show the position 1/2 to 1 mile from the runway. This is the distance recommended in the Airplane Flying Handbook for position on Downwind.

Map Setup

Base/Recip - Select the Base or Reciprocal runway

Left/Right - Select Left or Right turns in the pattern

Map/Satellite/Hybrid - Select the Map Type

Pattern Setup Options

There are several options used to control the size, route and position of the drawn pattern. Some of these options can be used to make the pattern look really ugly or unrealistic, this can be helpful when you are trying to make a point.

The Sliders or Text Boxes can be used to set these options. The Sliders have minimum and maximum limits, the Text Boxes do not.

- **Downwind NM From Runway** - Use this option to set the distance from the runway of the Downwind segment. The Downwind segment might not be parallel to the runway if there is a wide turn from Crosswind to Downwind but the point where the turn to Base begins will be this distance from the runway centerline.

- **Departure Segment Length NM** - The distance from the departure end of the runway to the beginning of the turn to crosswind
- **Turn to Base Angle to Runway** - The angle between the aircraft and the runway approach threshold when the turn to Base begins

- **Show Labels** - Turn this Switch off to hide the pattern segment labels

- **Show Turn Labels** - Turn this Switch on to see the Bank, Speed and Radius used to draw the turns

- **Rwy Border Line Width** - This controls the width of the lines used to draw the border around the runway. Make this value higher to make the border easier to see and smaller to make the map easier to see

- **Pattern Line Width** - This controls the width of the lines used to draw the pattern segments

- **45° Line Width** - This controls the width of the lines used to draw the 45° entry to the pattern line

- **Length of 45° to Downwind NM** - Length of the 45° entry to the pattern

**Turn Details**

The Radius of each turn measured in feet can be entered for the turns to Crosswind, Downwind, Base and Final. This value can either be entered directly with the Slider or typing in the Text Box or it can be calculated by entering the Bank in degrees and Speed in knots.

**The Wind**

I have gone back and forth in considering how to deal with the wind in this App. Ultimately I have decided not to consider it because it is outside the scope of what I wanted from the App. And also because if you are flying a nice rectangular course the ground track is not altered by the wind. Corrections to heading and pitch might of course be made to deal with the wind but that wouldn't change what I am drawing here.

Bank angle and ground speed would vary depending on the wind and that would change the calculated values shown on the Turn Labels here. This might cause me to reconsider doing something here to deal with wind direction and speed. But maybe not since that is really something different from my original intent here to show traffic patterns overlaid on local landmarks.

**Airports Database - USA Only**

The database used in the App contains over 5,500 airports and 8,100 runways. These airports are only USA airports and a few that are close to the US border.
References and Notes

If you are a pilot or flight instructor you know that you can generate a lot of discussion in a room full of pilots by talking about the “right way” to fly the traffic pattern. At first glance the Traffic Pattern appears to be well defined but there is plenty of room for interpretation. Every airport has its own unique local considerations whether that might be noise abatement or terrain or local climate or other obstacles and obstructions. But there are some standards, regulations and references that are worth mentioning. These references were used to develop the App. Here are a few.

Airplane Flying Handbook (AFH) Page 7-1: Every flight begins and ends at an airport or other suitable landing field. For that reason, it is essential that the pilot learn the traffic rules, traffic procedures, and traffic pattern layouts that may be in use at various airports.

AFH Page 7-1: Unless the airport displays approved visual markings indicating that turns should be made to the right, the pilot should make all turns in the pattern to the left.

AFH Page 7-1: If there is not a control tower, it is the pilot’s responsibility to determine the direction of the traffic pattern, to comply with the appropriate traffic rules, and to display common courtesy toward other pilots operating in the area.

AFH Page 7-2: When approaching an airport for landing, the traffic pattern should be entered at a 45° angle to the downwind leg, headed toward a point abeam of the midpoint of the runway to be used for landing.

AFH Page 7-2: This leg should be approximately 1/2 to 1 mile out from the landing runway, and at the specified traffic pattern altitude. (Editor’s question: Statute or Nautical Mile?)

AFH Page 7-2: The downwind leg continues past a point abeam the approach end of the runway to a point approximately 45° from the approach end of the runway, and a medium bank turn is made onto the base leg.

AFH Page 7-2: The upwind leg continues past a point abeam of the departure end of the runway to where a medium bank 90° turn is made onto the crosswind leg.

AFH Page 7-2: On the departure leg after takeoff, the pilot should continue climbing straight ahead, and, if remaining in the traffic pattern, commence a turn to the crosswind leg beyond the departure end of the runway within 300 feet of pattern altitude. If departing the traffic pattern, continue straight out or exit with a 45° turn (to the left when in a left-hand traffic pattern; to the right when in a right-hand traffic pattern) beyond the departure end of the runway after reaching pattern altitude.

AFH Page 8-2: Normally, it is recommended that the angle of bank not exceed a medium bank because the steeper the angle of bank, the higher the airspeed at which the airplane stalls. Since the base-to-final turn is made at a relatively low altitude, it is important that a stall not occur at this point.
FAR 91.126(b): Direction of turns. **When approaching** to land at an airport without an operating control tower in Class G airspace - (1) Each pilot of an airplane must make all turns of that airplane to the left unless the airport displays approved light signals or visual markings indicating that turns should be made to the right, in which case the pilot must make all turns to the right;

**AIM 4-3-2.c.6 Departure leg:** The flight path which begins after takeoff and continues straight ahead along the extended runway centerline. The departure climb continues **until reaching a point at least 1/2 mile beyond the departure end of the runway and within 300 feet of the traffic pattern altitude.**

**AIM Figure 4-3-2.3:** Complete turn to final at least 1/4 mile from the runway.

**AIM Figure 4-3-2.6:** If departing the traffic pattern, continue straight out, or exit with a 45 degree turn (to the left when in a left-hand traffic pattern; to the right when in a right-hand traffic pattern) beyond the departure end of the runway, **after reaching pattern altitude.**
About

Traffic Patterns Version: 1.01

Email Support

For additional support and more aviation Apps please visit

HTTP://WWW.CFITOOLS.COM

About Screen
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The About Screen is used to display the installed Version of the Flight Recorder App.

That is a picture of the home airport I took a number of years ago.