



# Pilot's Guide

A Practical Guide to FlyQ EFB  
Version 3.0



## Preface

Thank you for using FlyQ EFB from Seattle Avionics. This Pilot's Guide will help you get up to speed with FlyQ EFB quickly. We hope you find it useful and we welcome your feedback as we strive to continually improve the product.

There is a lot of information here and we encourage you to refer back to it often. If you have questions or comments on FlyQ EFB, please contact us at [FlyQ EFB Support](#).

This document is a key part of learning FlyQ EFB but it's far from the only way. Seattle Avionics has a wide range of videos, documents, and presentations that help you become proficient with the app. We're constantly trying to improve both the app itself and the learning materials so don't be shy if you're confused about something, want to suggest a new feature, or think you've found a bug.

### **Help from within the app**

Select **Settings** (top button that looks like a gear) then **Help**

### **Training videos**

<http://youtube.com/user/FlyQEFB>

### **FlyQ EFB info, downloads, and reviews on the App Store**

<https://itunes.apple.com/us/app/flyq-efb/id915571252?mt=8>

### **General Info**

<http://www.seattleavionics.com/FlyQEFB.aspx>

### **What's New in FlyQ EFB version 3.0 (video)**

<https://TBD>

### **FlyQ Overview video**

<https://youtu.be/GOt4tGJu78g>

### **Pilot's Guide (this document)**

<http://www.seattleavionics.com/Documents/FlyQEFBGettingStarted.pdf>

### **List of supported ADS-B systems**

<http://seattleavionics.com/SupportedADSB.aspx>

### **ADS-B Primer**

[http://www.seattleavionics.com/Documents/ADS-B\\_Primer.pdf](http://www.seattleavionics.com/Documents/ADS-B_Primer.pdf)

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### Version 3.0

#### New Features and Improvements

- ADDED: Full-featured functionality on the iPhone as well as iPad
- ADDED: Flight Data Recorder / Playback / Export system
- ADDED: Augmented Reality (AR) system from FlyQ InSight
- ADDED: Flight Tracks (aka “breadcrumbs”) map layer
- ADDED: Helicopter charts
- ADDED: Gulf of Mexico charts
- ADDED: Export to Cloud Ahoy and Google Earth
- ADDED: Flight track posting to Facebook, Instagram, Twitter, etc.
- ADDED: Import of GPX tracks created by FlyQ
- ADDED: Download approach plates / airport diagrams for Mexico, Belize, Honduras, Guatemala, Nicaragua, El Salvador, and Costa Rica
- CHANGED: TCrs and MagVar moved to far right side of the NavLog

#### Fixes

- FIXED: Blinking battery indicator for some in-panel ADS-B systems
- FIXED: Constant “Connect” and “Disconnect” messages when connecting to the Stratux when the device is running firmware meant for ForeFlight
- FIXED: Crash when sending flight plans to Dynon and Avidyne in some cases
- FIXED: Other stability and minor feature enhancements
- FIXED: Excessive CPU use during map movement
- FIXED: GARS grid system coordinates incorrect

### Version 2.5

#### New Features and Improvements

- ADDED: Now write on plates and airport diagrams with your choice of colors, pens widths, and opacity
- ADDED: Dramatically improved Scratchpad performance and new choice of colors and pens widths
- ADDED: Full Avidyne ADS-B support
- ADDED: Much larger text on the Roads map layer
- ADDED: Allow a SAR pattern with a buffer < 1 NM
- ADDED: Now you can turn off the 15 NM traffic ring when using ADS-B
- ADDED: Shows approach plates/airport diagrams from Puerto Rico, the Virgin Islands, Guam, and more

#### Fixes

- FIXED: Gauge bar on/off state not retained between sessions
- FIXED: ETE and GS incorrect when adding SIDs and STARs
- FIXED: Cannot alter the initial fuel in some ICAO flight plans
- FIXED: Crash when reversing some flight plans
- FIXED: Crashes and performance issues with the iPad 4
- FIXED: Extremely slow Scratchpad performance with the Apple Pencil
- FIXED: Stratux version number not properly displayed in ADS-B details (always says v 1.0).
- FIXED: Altitude sometimes incorrectly displayed for Stratux users with an AHRS
- FIXED: Multiple problems with Avidne support (heading, altitude, battery and status indicators, send/receive flight plans)
- FIXED: New weather data not properly integrated throughout the app in some ADS-B usage scenarios
- FIXED: Crash when using ADS-B in rare cases.
- FIXED: Surface winds on airport diagram not properly updated in some cases.
- FIXED: Preflight checklist sometimes reports downloads needed when they are not.

## Version 2.4.4

### New Features and Improvements

- ADDED: ICAO flight planning for both Leidos (Lockheed Martin) and CSRA DUATS.
- ADDED: Nearly 100 new aircraft equipment settings for ICAO compliance.



## Fixes

- FIXED: Excessive memory use causes crashes during ADS-B processing in high-traffic areas, especially when using the Stratux receiver.
- FIXED: Excessive memory consumption may cause app crash when viewing approach plates.
- FIXED: Excessive memory consumption in cases where the map is not being shown.
- FIXED: Calculation error when editing offline flight plans.
- FIXED: Cardinal directions on Terrain X-Ray incorrect in one case.
- FIXED: Sporadic crash when transitioning from 2D to 3D if Rings or Extended Courseline is on.
- FIXED: Original 2D map zoom level is not restored when switching from 2D to 3D then back to 2D.

## Version 2.4.3

### New Features and Improvements

- ADDED: Documents now includes Margin Notes (frequencies, MOAs, etc.) for each Sectional.
- CHANGED: Fuel price coloring on the map is now based on the average price in each state not nationally.

### Fixes

- FIXED: Occasional crash at startup on faster iPads, especially when using ADS-B.
- FIXED: Incorrect Regional Radar entry for some airports
- FIXED: Occasional error loading a Document.
- FIXED: Rare case of Documents appearing blank
- FIXED: Panning/zooming some documents does not work correctly.
- FIXED: Map fuel prices not colored correctly.
- FIXED: Cannot send and receive flight plans to Dynon with iOS 10.
- FIXED: Visual satellite layer does not work.

## Version 2.4

### New Features and Improvements

- Document Management. The all-new **Documents tab** gives you immediate access to a library of more than 200 FAA publications and charts (Flyway charts, helicopter charts, etc.), weather documents, Seattle Avionics documents, legends, and more. Or easily add your own documents by entering a URL or emailing them to your iPad. Even tap to add photos already on your iPad.
- Support for Avidyne IFD440/540/550 wireless data transfer (GPS, AHRS, bi-directional flight plan transfers). Avidyne software release 10.2 required (GPS works with 10.1). More Avidyne support to come.
- Support for ADS-B traffic and weather wirelessly transmitted from a Dynon SkyView system. This adds to existing support for bi-directional flight plan transfers, GPS, and AHRS. ADS-B requires a SkyView version 15 which has not been released as of this writing. The other data requires the current version 14 software.

### Fixes

- FIXED: An unusual server error state can cause the app to logout and not allow users to log back in.
- FIXED: Detailed device status information not immediately updated
- FIXED: NavLog printing results in a clipped document.
- FIXED: Editing the FAA Plan form does not always submit the changed fields to Lockheed or DUATS.
- FIXED: A few airports with fuel prices do not show the price on the map
- FIXED: Takeoff time cannot be set when creating a new flight plan
- FIXED: Downloads for Michigan do not include some of the state
- FIXED: Last-selected pilot not remembered in New Plan
- FIXED: Play/Pause button in sim too small on Retina iPad
- FIXED: Editing a flight plan can produce a negative MHDg
- FIXED: Tapping the Done button in the ChartData Manager takes so long to respond that it's often tapped twice.

## Version 2.3.2

### Fixes

- FIXED: An internal or external Bluetooth GPS is being ignored if connected to an ADS-B receiver that does not have an integrated GPS (almost always a Stratux).

## Version 2.3.1

### Fixes

- FIXED: Problem with Dual XGPS 170 and 190 under iOS 9.3

## Version 2.3

### New Features and Improvements

- Integration with Dynon SkyView and AFS 5000
  - Receive GPS and AHRS from the in-panel system
  - Send flight plans from FlyQ EFB to SkyView/AFS
  - Receive flight plans from SkyView/AFS
- Integration with Microsoft Flight Simulator and Prepar3D (in addition to existing support for X-Plane)
- Altitude gauge now displays “Pressure Alt” when connected to an ADS-B source that supplies pressure, rather than GPS, altitude

### Fixes

- FIXED: Incorrect altitude display when ADS-B sends altitudes below sea level
- FIXED: Time rings always display “0”
- FIXED: SA Airport diagram not in the procedure scroller when added from the Procedures button in Search results
- FIXED: Lat/lon for user-defined points gets reversed after using the Reverse button

## Version 2.2

### New Features and Improvements

- 300% faster mapping engine
- New photographic (satellite imagery) base map
- New terrain base map
- New road base map
- New SA Airport Diagrams covering 4,600+ airports
- All-new TFR system including sports TFRs
- Comprehensive Search and Rescue routing engine
- Waypoint idents now displayed on the flight plan line
- Added ground elevation for any point
- FAA and SA Airport Diagrams can now be overlaid on the map
- Added VSR (vertical speed required) gauge
- Support for the Dual XGPS 190 ADS-B with AHRS
- Support for the L-3 Lynx ADS-B
- Experimental support for the Stratux AHRS (other Stratux ADS-B features are fully-functional and not experimental)
- Import flight plans via an email link from AOPA Flight Planner
- TCrs and MagVar added to the NavLog
- Lat/lon, CAP grid reference, navaid/dist/bearing and navaid intersections now accepted anywhere a standard ident (airport, navaid, fix, etc.) can be used.
- Added several new aircraft to the database

- Can add a corner suffix to all CAP grid references to specify which corner of the grid. E.g. SEA140NW / SEA140SE, etc.
- 1/2 NM and 1/4 NM added as options for the Ring distance (useful for CAP missions)

## Fixes

- FIXED: Procedures from a previous airport shown in list for a new airport
- FIXED: Cannot reverse a flight plan created with lat/lon entries
- FIXED: Computational problem in MHDg in offline flight planning
- FIXED: Cannot get back to flight plan list after tapping New in split/landscape
- FIXED: Blank map at app startup when using a Bluetooth ADS-B such as the Dual XGPS 170 or 190
- FIXED: SAR Cell format grids has lat/lon reversed
- FIXED: SAR Sectional Grid does not display the correct grid reference in some cases where SAR groups overlaps (like LAX and PHX)
- FIXED: SAR Sectional Grid does not display the very last line of the grid
- FIXED: In Airport/Services, the tap area for changing fuel price is too large, making it hard to see FBO details
- FIXED: ADS-B traffic alt box can sometimes obscure the 2 minute dist/direction line from the target
- FIXED: Fuel prices cover airport ident
- FIXED: NOTAM text too tight to header cells
- FIXED: Various capitalization inconsistencies in Settings and Gauge descriptions
- FIXED: Double-tap on Wx briefing does not show in full-screen pop-up
- FIXED: Occasional glitch when loading flight plans or aircraft from the server
- FIXED: Switching volume units to Liters is not reflected on aircraft settings page
- FIXED: TAF and METAR visibility noted in NM rather than SM, causing confusion
- FIXED: Flight plan winds do not recalculate in some cases
- FIXED: Calculation error in some navaid/radial/distance entries
- FIXED: Keyboard covers key areas of the FAA flight plan
- FIXED: Display problems in 3D heading and altitude labels

## Overview

FlyQ EFB is the powerful aviation app where ease of use and quick access to information is the primary design goal. The idea is to keep you safe by minimizing the time you spend looking at the iPad and maximizing the time you spend looking out the windscreen. In other words, *fly the plane, not the iPad*.

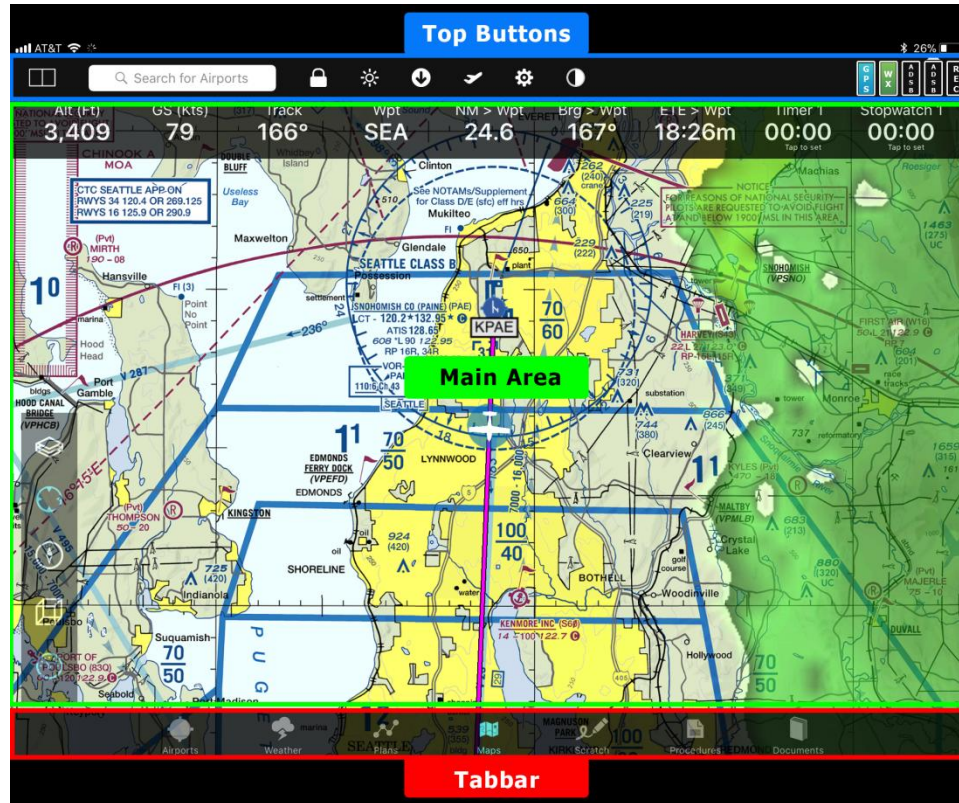
Our license agreement allows you to use FlyQ EFB on as many devices as you personally own and use so you can install it to both your iPhone and iPad – not to mention use FlyQ Online from your PC or Mac (<https://flyq.seattleavionics.com>). Be sure to login to all FlyQ apps, on all devices, with the same email and password or the system will not recognize you. Most app settings, as well as flight plans, Documents, and Personal Waypoints, are automatically synchronized between all your devices.

## iPad Versus iPhone

FlyQ EFB runs on both the iPad and the iPhone. Functionally, they are identical except that the iPhone version lacks the split-screen feature of the iPad due to the smaller screen size. Similarly, certain features work slightly differently on the two types of devices but the difference is usually very minor. This guide generally uses screenshots from the iPad version of the app except where the iPhone version looks materially different.

Technically, the same app runs on both the iPad and iPhone but adapts to the device on which it's running. In other words, there is no "iPad version" or "iPhone version", per se. Search for *FlyQ EFB* in the **App Store** app on your iOS device to download the app regardless of the device you're using.

## The Big Picture



### Top Buttons

The buttons at the top of FlyQ EFB remain constant to give quick access to commonly-used functions at all times. These include **Search**, **Split Screen** (iPad only), **Settings**, etc.

### Tabbar

The tabbar at the bottom of the screen shows the major functional areas of the app: **Airports**, **Weather**, **Plans**, **Maps**, **Scratchpad**, **Procedures**, and **Documents**. Tap any tab to see the type of info you want. By default, the tabbar automatically hides after 6 seconds to leave more screen space for information. Tap anywhere on the screen to show the tab bar. If you prefer, in **Settings**, you can turn the autohide feature off so the tabbar is always shown.

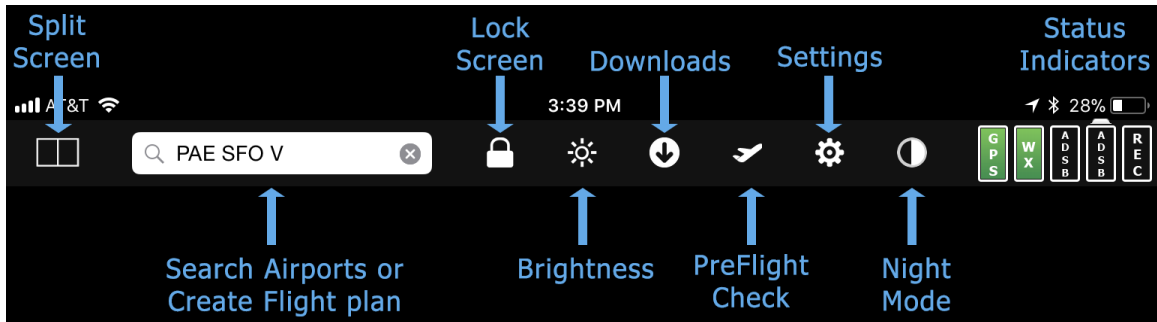
If you're using split-screen mode (described below), each side of the screen has its own tabbar.

### Main Area

The bulk of the screen is filled with the type of information you select from the tabbar.

## Top Buttons

On an iPad:



On an iPhone:

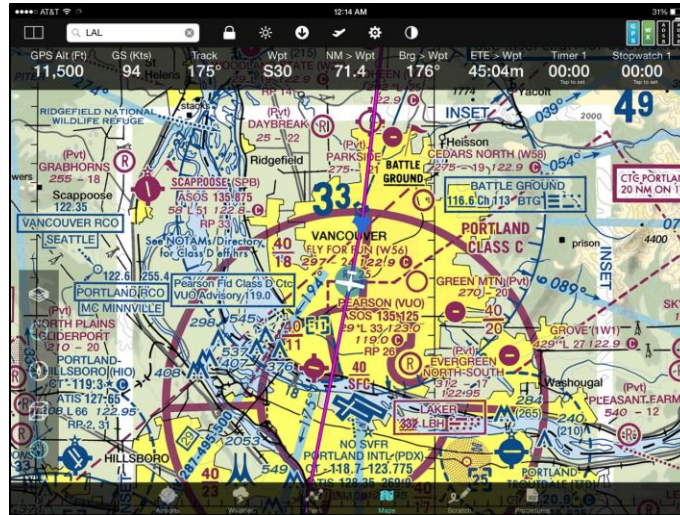


- **Split Screen:** FlyQ EFB lets you show everything on one simple screen or split the screen into two different views. Tap to toggle between single and split view.  
**Note: This feature is only available on the iPad, not iPhone, due to screen size limitations of the iPhone.**
- **Search:** Find information about any airport, navaid, or fix by entering its ident or name. Even enter a complete flight plan. **Note: On the iPhone, this field expands when you tap into it and contracts back when you tap out of it.**
- **Lock Screen:** Turn on to stop accidental taps to the screen from doing anything. Also locks the iPad/iPhone into the current orientation (landscape vs. portrait). Icon is blue when the lock is engaged.
- **Brightness:** Tap to change the screen brightness, control how transparent the **Radar** layer is over the map, and controls how transparent **Procedures** are over the map.
- **Downloads:** Downloads maps, plates, digital data, etc. on a state by state basis. Also shows expiration dates for current subscriptions.
- **Preflight Check:** Quickly checks for current data along your flight and downloads just the data you need for it.
- **Settings:** Controls various options for the product and gives links to Help information.
- **Night Mode:** Changes map and procedure colors from white to black to help preserve night vision.
- **Status Indicators.** Uses colors to indicate the status of your GPS, the age of your weather, the status of your ADS-B system, the battery level of your ADS-B system (if applicable), and whether or not the flight is being recorded. Tap any of the indicators for more detailed information.

## Single Screen and Split Screen

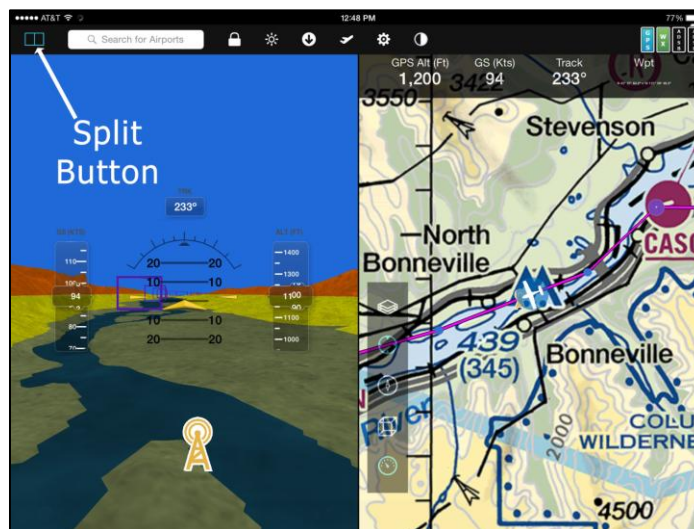
The iPhone has a relatively small screen so the app always shows just one content area; the iPad's screen size provides room to work in either single or split screen modes. On the iPad, tap to the button at the upper left corner of the screen (looks like a split window) to switch from single screen to split screen and back again.

### Single Screen



### Split Screen

In split screen view, you can see a map and airport info, a map and an approach procedure, two maps (perhaps different scales or one IFR and one VFR), and much more. Click the icon at the upper left corner of the screen to switch back from split to single screen.





## Map Types

The most obvious use for an aviation app is to display a map (chart) and show your current position over it. Of course FlyQ does that, but it also does much more because it doesn't have just one map; it has three distinct types of maps: *2D*, *3D Synthetic Vision*, and *Augmented Reality (AR)*.

### 2D

This is the standard map that most people are used to. It's like looking at your choice of standard paper charts (Sectional, IFR Low, IFR High, etc.).

### 3D Synthetic Vision

As the name implies, the Synthetic Vision view is a completely synthetic (computer-generated) image of the world that is derived from databases and position sensors. It simulates looking outside the windshield.

### Augmented Reality (AR)

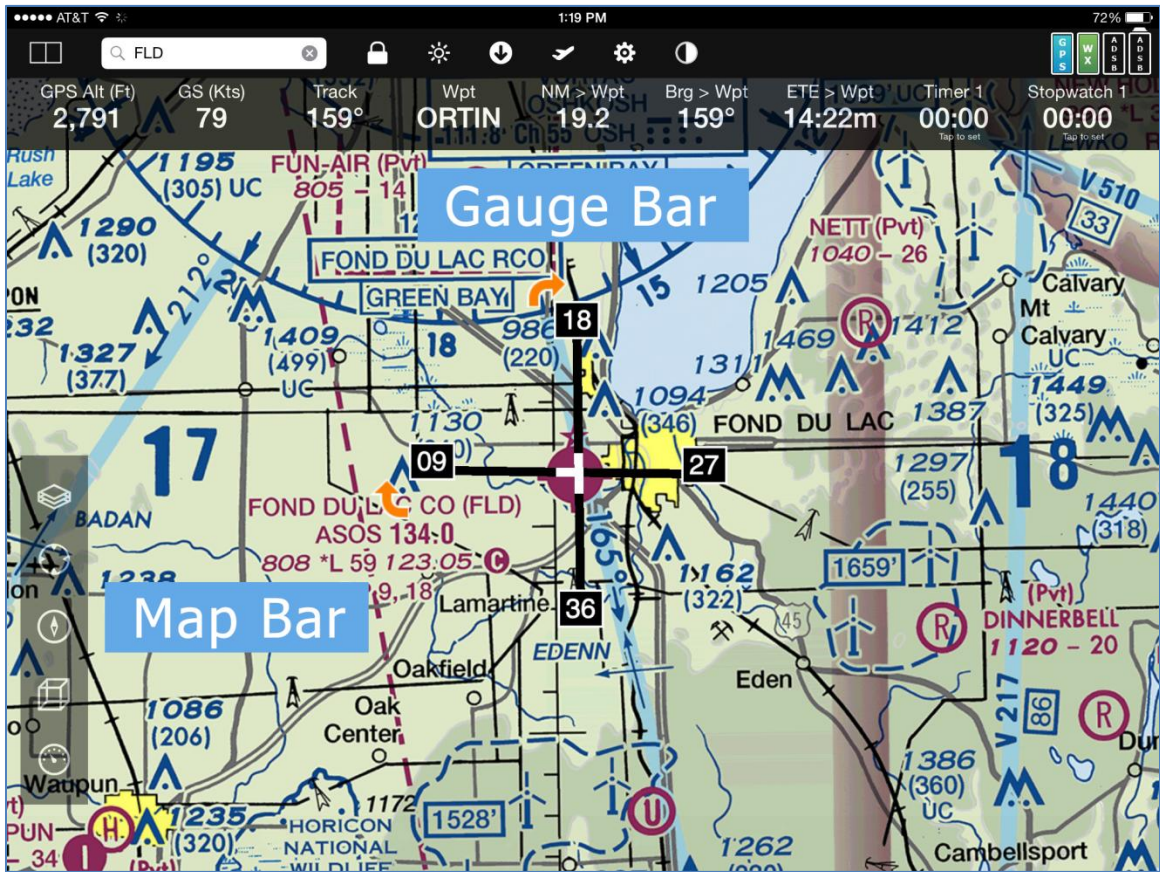
Augmented reality is a new concept and FlyQ is the only app that has it. It blends a live video feed from your iPad or iPhone's camera with computer-generated overlays. In particular, FlyQ shows where airports are by overlaying airport markers on the video feed. As you move the iPhone or iPad around the cabin and point out the window at different areas, FlyQ overlays the airports visible in the video feed. This is especially handy when flying at night, in poor weather, or in unfamiliar areas.

All three of these maps styles are accessed from the **Map** tab at the bottom of the screen. Switch between the types of map by tapping the button that looks like a **3D cube** (the map types switch from 2D to 3D to AR with each tap). The **3D cube button** is on the **Map Bar** (explained below) on the left side of the map. If you prefer, you can remove one or more of the map types from the switch sequence from within the **Settings** portion of the app (the gear icon at the top of the screen). For example, if you never want to use AR, set the **Map modes** switch in **Settings** to *2D, 3D*.

## The 2D Map

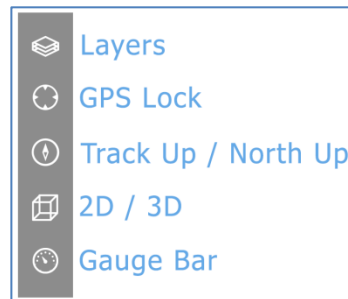
By default, FlyQ EFB shows 2D maps. The icon that looks like a 3D cube on the **Map Bar** shown below switches from 2D to 3D to AR (Augmented Reality) modes and back again.

In addition to the map itself, there are two areas of the screen with tools or information: the **Map Bar** and the **Gauge Bar**.



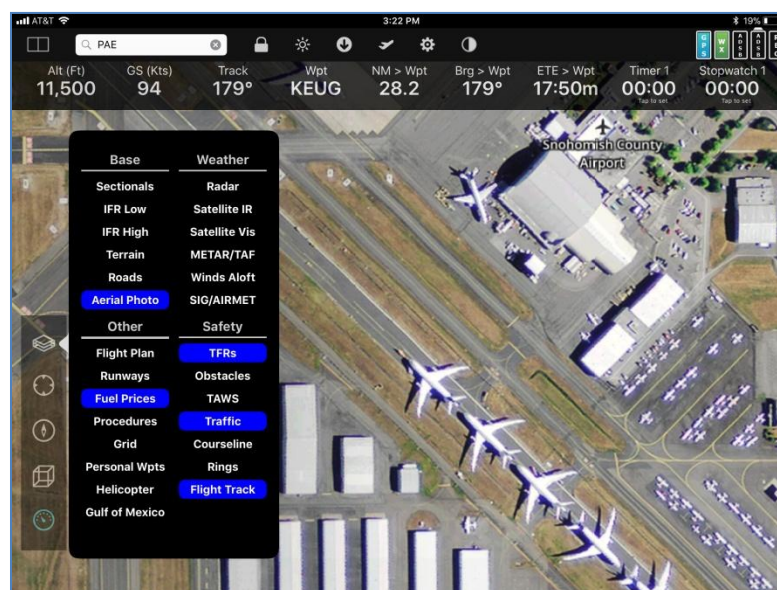
## The Map Bar

In the lower left corner of every map is series of five buttons. These control key mapping features. From top to bottom: **Layers**, **GPS Lock**, **Track Up**, **2D/3D/AR**, and **Gauge Bar** toggle.



### Layers

FlyQ EFB lets you mix and match any base map (*Sectional, IFR Low, IFR High, Terrain, Roads, and Aerial Photo*) with overlays you choose. These overlays are known as *layers*. Simply select the base layer you want then tap as many or as few weather or other layers as you like. You can choose to see NexRad radar and satellite at the same time or see easy-to-read winds aloft arrows and METAR/TAF circles at the same time. If you create your own Personal Waypoints (aka user-defined points) turn on the Personal Waypoints layer. Look at Fuel Prices and Radar at the same time when trying to choose a safe, inexpensive place to get fuel. And how about flying with distance rings, an extended courseline, terrain, and obstacle warnings over an IFR map? Other layers include geo-referenced IFR Approach Procedures, ADS-B Traffic, and extended runway centerlines with right-pattern indicators. Even turn on the Grid layer for CAP search and rescue missions. You decide what you want to see overlaid on the map and FlyQ EFB will display it. The Flight Track layer, also known as “breadcrumbs”, shows where you’ve flown.



## Notes:

The Winds Aloft arrows point in the direction that the wind is moving not in the direction from which it comes. The number at the end is the expected winds aloft speed, in Kts, at your current GPS altitude. Thus, this number generally changes as you climb. Tap the large **Weather** tab at the bottom of the screen to see winds at other altitudes.

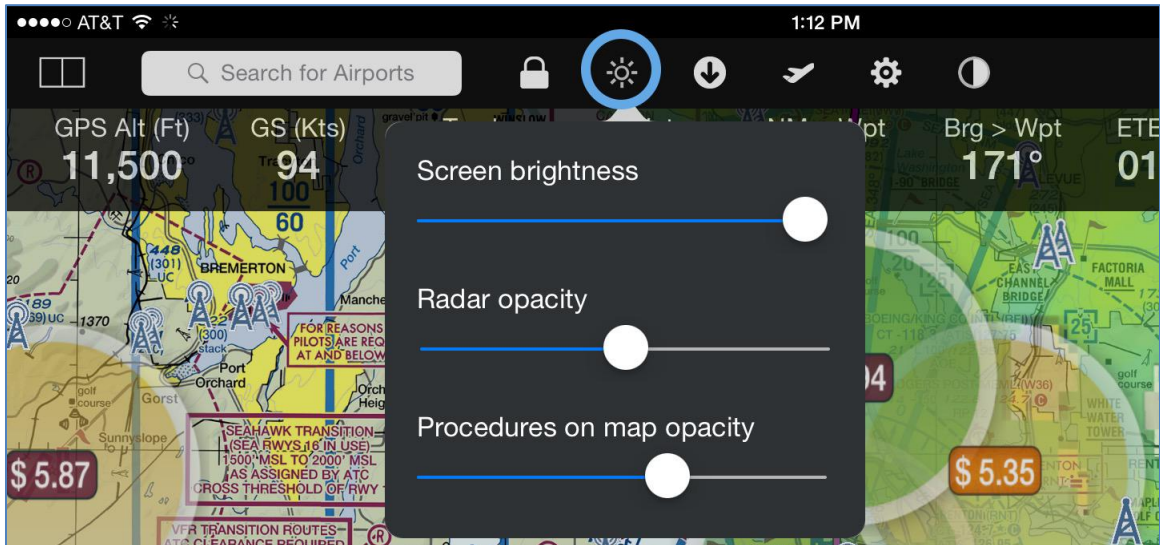
**Note: If you're not flying, the Winds Aloft layer assumes the winds at your default cruise altitude. This is 7,000 ft. unless you change it in the Defaults section of Settings.**

The METAR/TAF circles use three colors to depict the actual or expected weather conditions: green is VFR, yellow is MVFR, and red is IFR, LIFR, or VLIFR. The colors are determined by either METARs or TAFs, depending on the time. If the airport has a METAR report that is still valid (they last one hour), the color is based on a METAR. If you're outside the time range of METARs, FlyQ EFB automatically switches to using TAFs.

The Grid layer displays one of three different types of Search and Rescue (CAP) grids. FlyQ EFB has extensive support for grids and automatic Search and Rescue pattern creation. See the *Search and Rescue* section towards the end of this document for much more detail.

The Fuel Prices layer uses three colors (green, orange, and burgundy) to indicate prices relative to the other prices within each state. Green means the price is at least \$0.50 lower than the state average, orange means it's near the state average, and burgundy means it's at least \$0.50 above the state average.

Tap the **Brightness** control at the top of the app to control the opacity of the Radar and Procedures layers.



### GPS Lock

Normally FlyQ EFB uses your GPS to keep the map centered on your current location. However, if you use your finger to pan (move) the map, tap this button to re-center on the GPS. If **GPS Lock** is already on (blue), tap it again to zoom in. The only way to turn **GPS Lock** off is to move the map.

### Track Up

FlyQ EFB makes it easy to toggle between Track Up (blue and the default) to North Up.

**Note:** Track Up is meaningless unless you're moving (that is, have a track) so this button has no effect if you're using the iPad or iPhone at your desk. Also, when you turn **Track Up** on, the system engages the **GPS Lock** button.

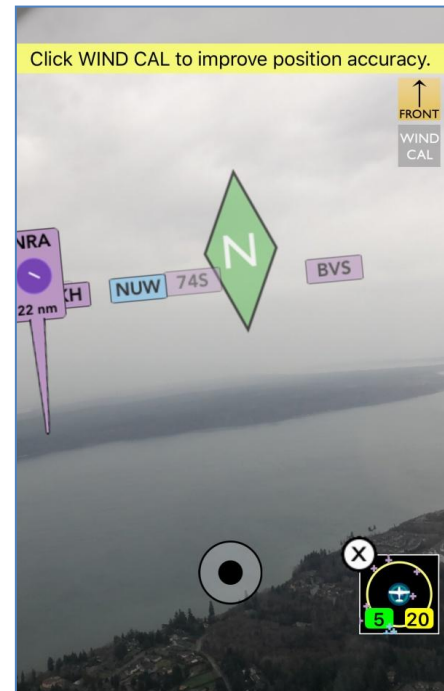
## 2D / 3D / Augmented Reality

FlyQ EFB was designed from the ground-up to use one very powerful mapping system that works in either standard 2D or true 3D Synthetic Vision mode. It also includes a unique Augmented Reality view. There is no additional subscription required to get these feature and switching from 2D to 3D to AR is as easy as tapping the button that looks like a 3-dimensional cube. An AHRS is not required although the display is much more realistic with one (no yaw, pitch, or roll without an AHRS).

2D and 3D (split screen)



AR (Augmented Reality)

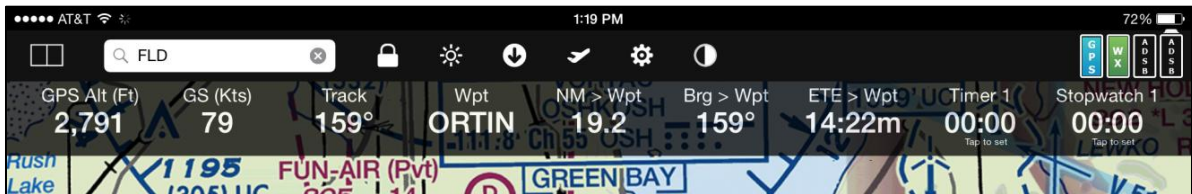


**Note:** In 2D mode, FlyQ EFB automatically downloads data from the Internet so you don't have to pre-load data (of course, you should before you fly – see the *Downloading Data* section below). However, for technical reasons, 3D synthetic vision requires data to be pre-downloaded. Thus, if you switch to 3D mode before downloading data, you'll see a warning that you need to use the **ChartData Manager**. If you don't have terrain data downloaded, all you'll see is a blue screen.

## Gauge Bar

The top of the map has a wealth of pilot-configurable gauges (speed, altitude MSL, altitude AGL, next waypoint, timers, etc.). FlyQ EFB has more gauges than can fit on the screen so press and hold a gauge to see a list of the other possible gauges that can go in that position. Scroll the list of available gauges by swiping the list up and down. If you select a *Timer* or *Stopwatch* gauge, tap the gauge to set the timer. Tapping the *Position* gauge (latitude/longitude) can add a Personal Waypoint at your current position.

Toggle the **Gauge Bar** on and off with the last button on the **Map Bar** that looks like a circular gauge.

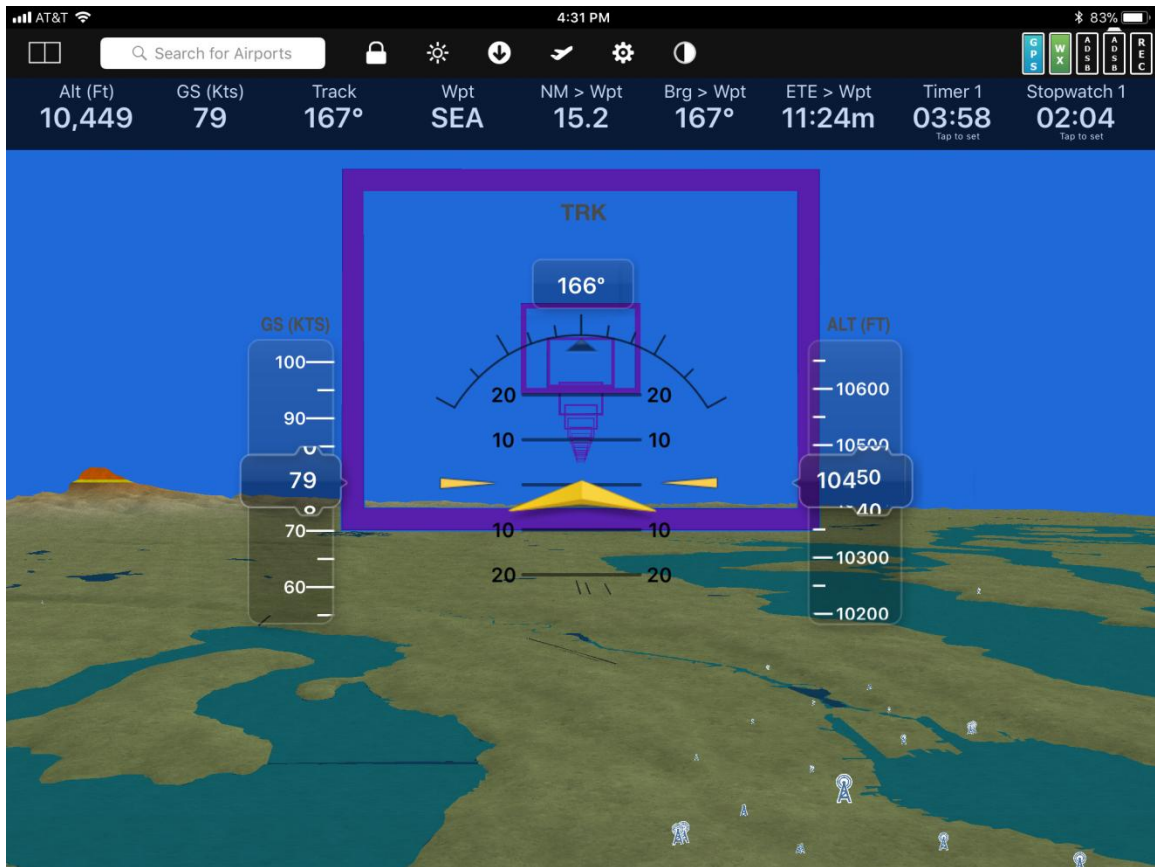


Gauge	Function	Notes
<b>GPS Altitude / Pressure Altitude</b>	Displays the geometric altitude as reported by a GPS or pressure altitude if sent from the position source	GPS altitude is not corrected for atmospheric pressure.
<b>Ground Speed</b>	Ground speed in Knots, MPH, or K/min	Change Units in Settings
<b>Track</b>	Magnetic ground track	
<b>Position</b>	Latitude/longitude	Tap to create a Personal Waypoint at that location
<b>AGL</b>	Altitude above Ground Level	The low-resolution terrain database must be loaded
<b>VSR</b>	Vertical Speed Required in Feet/Min to go from the current altitude to a specified AGL and distance from the next airport in the flight plan. Arrows show if climb or descent required.	By default, the system aims for 1000 feet AGL and 3 NM away from the airport. Use Settings to change these values.
<b>Bearing to Wpt</b>	Magnetic course to the next point on the flight plan	
<b>ETE to Wpt</b>	Estimated Time Enroute from the current position to the next waypoint	
<b>Distance to Wpt</b>	Distance to the next waypoint in the flight plan in NM, SM, or KM	Change Units in Settings
<b>Dist. to Landing</b>	Distance to the final landing (not next fuel stop)	
<b>Time to Landing</b>	Time to the final landing	
<b>Waypoint</b>	Name/ident of the next waypoint in the flight plan	

<b>Closest Waypoint</b>	The waypoint closest to your current location	
<b>Timer 1</b>	Count down time	Tap to set the duration and start/stop the timer
<b>Timer 2</b>	As above	Timer 1 and Timer 2 are independent of each other
<b>Stopwatch 1</b>	Count-up timer	Tap to Start/Stop
<b>Stopwatch 2</b>	As above	Stopwatch 1 and Stopwatch 2 are independent of each other
<b>Clock</b>	Zulu (UTC) clock	
<b>Blank</b>	No gauge	Useful for simplifying visual layouts in some cases
<b>GPS Info</b>	Shows horizontal and vertical accuracy of the GPS	This value is estimated and should not be taken as extremely reliable



## The 3D (Synthetic Vision) Map



Enable 3D Synthetic Vision mode by tapping the 3D cube icon on the **Map Bar**. This button cycles between 2D, 3D, and AR (Augmented Reality) views so you may need to tap the button twice to get 3D, depending on where you start. **Note:** You can disable the AR view with a switch in **Settings** (gear icon at the top of the screen) if you like.

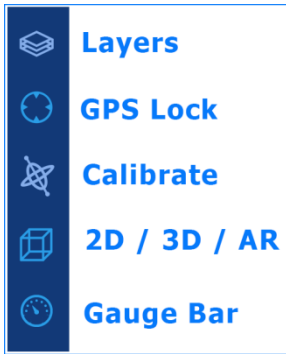
In 3D mode, FlyQ shows a computer generated image based on the direction of flight and, if you have an AHRS (generally part of your ADS-B receiver), roll and pitch. The 3D view required downloading relatively large files with the high-resolution terrain data needed to generate the view. This switch, **High-Resolution Terrain**, is on by default in the **ChartData Manager** (“down arrow” icon at the top of the screen) portion of the app but, unlike 2D map data, this data is not downloaded “on demand” as you sit at your desk. Rather, you must explicitly go to the **ChartData Manager** page and click **Update Now** to download the data or you will not see any terrain.

On an iPad, the default 3D view shows an EFIS display (HUD) that shows roll and pitch in the center area, current track above the EFIS, and two “tape” displays on the side which show ground speed and altitude. On an iPhone, the tape and track displays are not shown to save screen space.

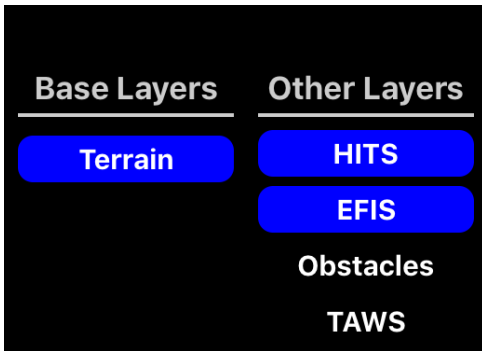
Like in 2D mode, a Map Bar also appears on the left side of the screen. By default, unlike when in 2D mode on an iPad, the Map Bar disappears after a few seconds to save space.

## Map Bar

The 3D Map Bar includes most of the same icons as in the 2D view and adds one specific to 3D mode.



### Layers



The **Layers** button (stack of papers icon) allows you turn on a HITS (Highway In The Sky) layer (boxes that show your flight plan), the EFIS display, Obstacles, and TAWS (Terrain Awareness / Warning System). TAWS and Obstacles both use colors to indicate threat level where Red indicates terrain or obstacles within 200 ft and yellow indicates a threat within 1,000 ft.

### GPS Lock

The GPS Lock button is always engaged in 3D mode and cannot be turned off.

### Calibrate

Unique to the 3D view is a button that looks like a spinning top or gyro. It calibrates pitch and roll based on your AHRS feed and is not available if no AHRS is connected. When tapped, your current pitch and roll is considered “zero” so only tap it when in straight and level flight.

## 2D / 3D / AR

The 3D cube button cycles between 2D, 3D, and AR (Augmented Reality) views so you may need to tap the button twice to get 3D, depending on where you start. **Note:** You can disable the AR view with a switch in **Settings** (gear icon at the top of the screen) if you like.

## Gauges

The last button controls whether the **Gauges** display (text displays that show speed, altitude, track, etc.) is shown at the top of the map or not. On an iPad, this is off by default since the tape displays on the left and right give most of the same information. The **Gauges** are on by default for an iPhone since the tapes are not displayed.

**Note:** The 3D synthetic vision system works properly when flying or in GPS simulator mode; it is not designed to work at while on the ground. The display may not look right when used on the ground.

## The Augmented Reality Map

Enable AR (Augmented Reality) mode by tapping the 3D cube icon on the **Map Bar**. This button cycles between 2D, 3D, and AR views so you may need to tap the button twice to get AR, depending on where you start. **Note:** You can disable the AR view with a switch in **Settings** (gear icon at the top of the screen) if you like.



## What is Augmented Reality

Augmented Reality is a computer-science term for starting with reality (generally a video feed) and adding (*augmenting*) it with digitally drawn information. Imagine going to a party and seeing lots of people you don't know then putting on a pair of special glasses that magically adds the name and age of every person in your field of view. Or, in the case of FlyQ EFB, putting the name, distance, and other information about every

airport shown in the video feed provided by your iPad or iPhone as you point it outside the cabin. This is materially different than HUD displays that fighter pilots use because those HUDs display speed, altitude, and heading information not directly related to the objects in the view while the data in FlyQ is tied directly to those objects.

You'll find the AR view especially useful when flying at night, in bad weather, or when visiting unfamiliar airports. It's the difference between "knowing" where an airport *should be* based on the overhead view provided by a 2D map versus having a friend with Superman's vision point out where the airports actually are no matter how bad the conditions are.

## Using AR

The AR view is not meant to be used continually during flight but generally before landing. It's especially helpful on the iPad in split-screen view where you're looking at a 2D map and the AR view at the same time. Alternately, many people use AR on their iPhone rather than iPad as an iPhone is generally not otherwise used for flying while an iPad is often used for primary navigation, making it inconvenient to wave around the cabin.

Point the rear camera of your iPad or iPhone towards airports and FlyQ draws markers where the airports would be if you could see them. The marker sticks are color coded like the airport icons in FlyQ EFB: Blue = controlled airport, Magenta = uncontrolled. The markers also show the runway configuration from a north-up perspective and the distance to each airport. You can select which types of airports are shown with the **Layers** button explained below.

Nearby airports are shown with a "stick" that points to the airport's location. Further away airports do not have a stick so as not to create visual clutter. Distant airports begin to fade-out the further away they are. Tap an airport marker to see more info about the airport (runways, frequencies, weather, etc.).

See something interesting? Click the **Shutter** (black dot icon) in the lower center of the screen to snap a photo. You'll get two photos per click; one with all the markers you see on the screen and one "clean" image with no markers. These images are in the **Photos app** on your device.

## Accuracy and Calibration

Creating augmented reality using strictly off-the-shelf hardware has a few limitations so it's very important that you read this document before using AR in-flight. The portion about how the **FRONT** button works (below) is especially important.

The app uses the sensors in your device to determine location, yaw (lateral direction), pitch, and roll. It does not use an AHRS, even if you have one connected, because the app lets you point the device in any direction, not just straight out the windscreen.

When not moving, yaw is determined solely by the compass in your device. The compass isn't very accurate so using the app while at your desk will give you a sense of how the app works but can't accurately display airports. The **FRONT** and **WIND CAL** buttons, explained below, dramatically increase accuracy but the app can only show approximate locations so do not rely on it for absolute accuracy. The sensors in your iPad and iPhone were never designed for the tricky physical, magnetic, and electrical environment of your plane.

## **FRONT**

The **FRONT** button at the upper right of the screen helps calibrate lateral position. It has 3 modes: *clear* (off), *yellow* (medium accuracy), and *green* (highest accuracy).

### *Clear Mode*

When you start the app, it doesn't know which way is front so the **FRONT** button is clear (Off). In this case, the compass (or *magnetometer*) in your device determines direction. The compass is highly affected by the magnetic and electrical "noise" so isn't especially reliable.

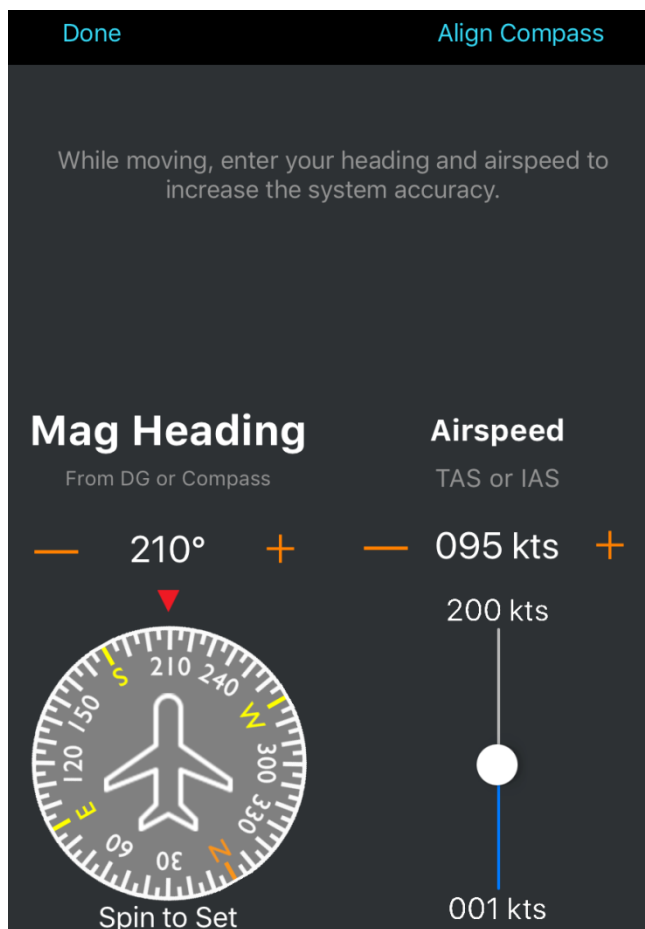
### *Yellow Mode*

When moving, point the camera straight out the front of the plane and tap **FRONT**. That tells the app which way is forward and calibrates the system. The button turns yellow to indicate some position accuracy. You can move the iPad/iPhone left and right to see airports to the side or behind you. Over time (such as a couple of minutes), accuracy will decrease as the device sensors drift so you may want to re-center the device and click **FRONT** every once in a while.

### *Green Mode*

For better accuracy, you can lock the camera to the front position. This tells the system to always assume the device is pointed straight outside and ignore the device's gyros and compass. Tap and hold **FRONT** for a few seconds and the button turns green to indicate that it's locked to the front position. In this mode, rotating the device left or right has no effect; the app assumes it's looking straight outside so always shows airports directly in front of you. The accuracy is very stable as it does not use gyros or compass in your device, relying solely on your GPS track.

## WIND CAL (Wind Calibrate)



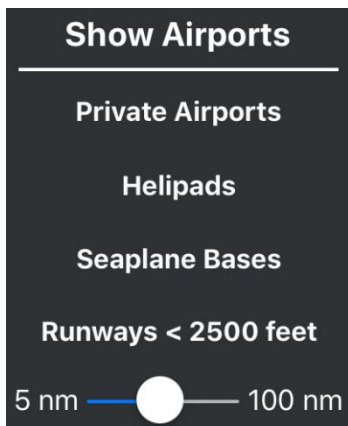
For best accuracy that compensates for winds aloft, fly straight and level then hold the rear camera straight out the front window and tap the **WIND CAL** button. Use the slider and + and - buttons to enter your current TAS. Spin the **Compass Card** to set the magnetic heading as shown by the instruments in the plane. These bits of data let FlyQ calculate the wind vector so it can compensate correctly no matter which direction the iPad/iPhone is facing. You only need to redo this step if the winds have changed due to a large altitude change, a long distance travelled, or a large passage of time.

## Map Bar

The AR Map Bar includes some of the same icons as the 2D and 3D view and adds two specific to AR mode.



### Layers



#### *Private Airports*

There are far more private airports in the US than public airports. By default, FlyQ hides them to remove clutter. Select to show them.

#### *Helipads*

There are also more helipads than fixed-wing airports in the US although most FlyQ pilots do not fly helicopters so these are hidden unless you explicitly show them.

#### *Seaplane Bases*

Unless selected, FlyQ hides seaplane bases.

#### *Runways < 2500 feet*

Whether public or private, FlyQ hides airports with very short runways. Select this option to show them.



### *Distance slider*

FlyQ normally hides airports that are beyond a certain distance away to reduce screen clutter. You may want to change this depending on where you're flying. For example, if you're near New York City or in Southern California, you'd probably want to restrict the distance while a flight in Wyoming may merit a much larger allowed distance.

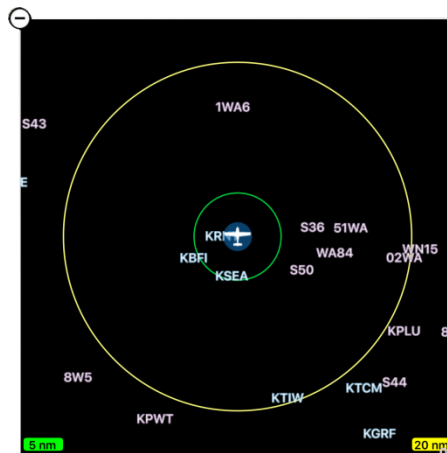
### **Tape (Ruler)**

FlyQ can display a moving tape at the top of the screen that gives a sense of heading. It's normally hidden as the standard **Gauges** are more comprehensive and use the same screen space.

### **2D "Radar" View**

FlyQ shows a handy overhead image of nearby airports in a small window at the bottom right. Distance rings at 5 and 20 NM give a sense of distance for each airport. Unlike a standard 2D map, which is also an overhead view, the 2D Radar view bases airport locations on where the camera is facing, not the direction of flight. In other words, it matches the display on the AR view and changes as you rotate and move the iPad or iPhone within the cabin.

**Note:** Tap the small view in the corner to see a larger, more detailed image.



### **Mode Toggle**

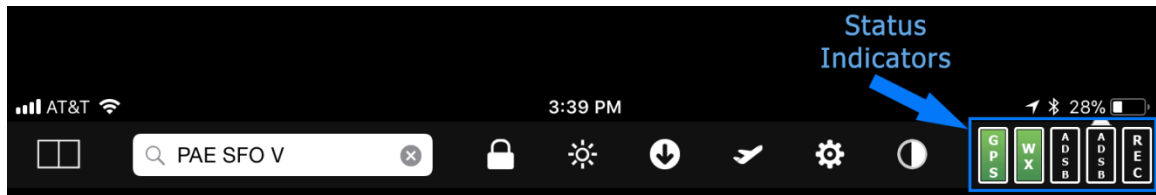
The 3D cube button cycles between 2D, 3D, and AR views so you may need to tap the button twice to get AR, depending on where you start. **Note:** You can disable the AR view with a switch in **Settings** (gear icon at the top of the screen) if you like.

### **Gauges**

The last button controls whether the **Gauges** display (text displays that show speed, altitude, track, etc.) is shown at the top of the map or not. The **Gauges** are on by default.

## Status Indicators

The upper right area of the screen shows critical device and data status and aging information.



These five indicators use colors to tell you at a glance the status of your GPS, the age of the weather you're viewing, the status of a connected ADS-B system, the battery status of a connected ADS-B system (if applicable), and whether or not your flight is being recorded. GPS is on the left, then Weather (Wx), then ADS-B, then ADS-B battery, then Flight Recording status.

As elsewhere in FlyQ EFB, *green* means good, *yellow* means marginal, and *red* means there is a problem.

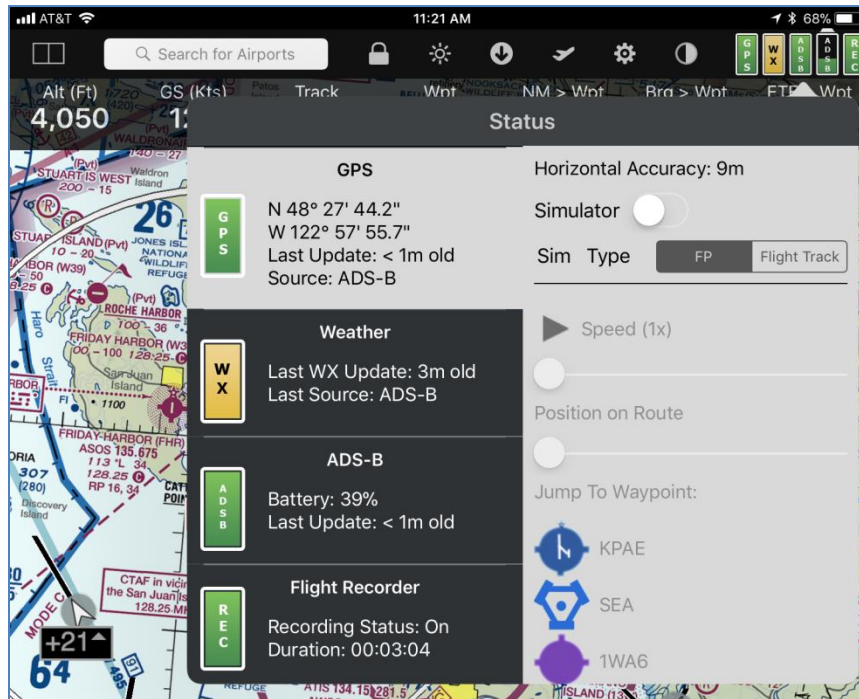
Tap anywhere on the **Status Indicator** to see additional information about GPS, Weather, ADS-B, or flight recording. It does not matter which specific indicator you tap. Once the detailed page appears (as below), tap the large **GPS**, **Weather**, **ADS-B**, or **Flight Recorder** cells on the left side of pop-up for more details about each system.

**Note:** These indicators are designed to quickly alert you to problems so we're careful to only use red when there is an actual problem. Specifically, the lack of an ADS-B receiver does not turn the ADS-B indicator red or everyone without an ADS-B would always see a red indicator in the corner which defeats the point of alerting to you a problem as it would always give the impression of a problem. Rather, the ADS-B indicator only turns red if an ADS-B system is connected then disconnects.

In cases where no ADS-B has been connected, the ADS-B icon remains clear. Similarly, if an ADS-B system is connected but it has no integrated battery (Merlin, Stratux, FreeFlight, L-3 Lynx, SkyRadar, or NavWorx) the ADS-B battery indicator is clear or green rather than red. For technical reasons, the ADS-B battery indicator is also clear when a Stratus<sup>+</sup> is connected.

The recording status indicator is clear when no recording is taking place because lack of recording is not generally a problem that requires immediate attention.

## GPS



iPads and iPhones have been known to lose the GPS lock in flight. At a glance, this area gives you a quick indication of whether or not the GPS is engaged and working as expected.

*Green* means the GPS is working properly and providing data with a high degree of accuracy.

*Yellow* indicates that a GPS is connected but the accuracy is marginal.

*Red* means a GPS is either not connected or has not provided a position update in the last 60 seconds.

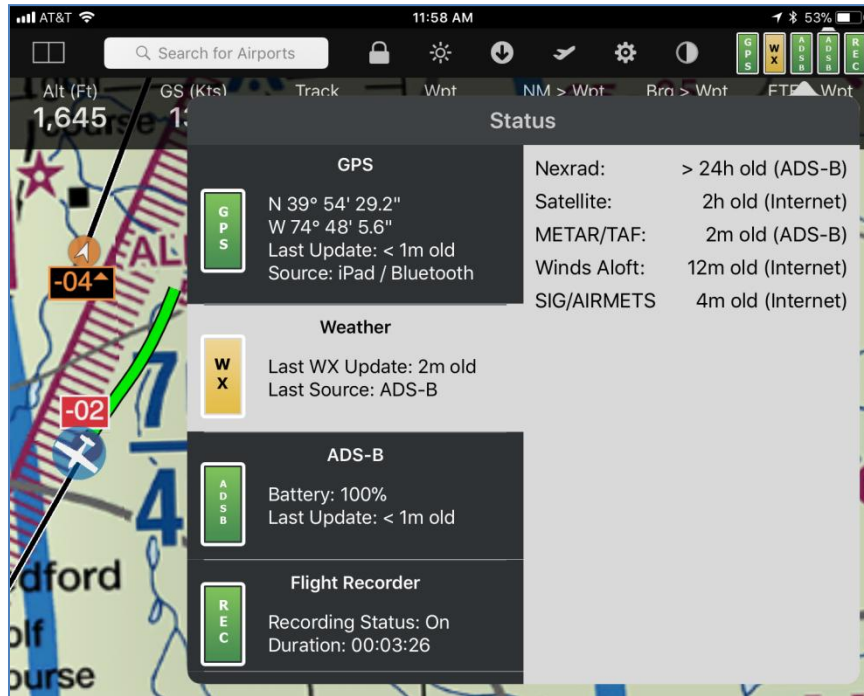
*Blue* is used when you're using the GPS simulator.

*Purple* (rarely seen) means you're using an ADS-B receiver but the GPS feed is coming from a different source such as the iPad/iPhone's internal GPS or a separate GPS.

This is also where you engage the built-in GPS simulator. That is covered in the *Simulator* section below.

**Note: Source** will show as *iPad* (or *iPhone*) / *Bluetooth* when using an external Bluetooth GPS because the GPS is working at the operating system level rather than with a direct connection to FlyQ EFB. The GPS tells the operating system the location and the OS provides that location to FlyQ EFB without specifying if the source was an external GPS or the device's internal GPS. This does not apply to ADS-B sources because FlyQ EFB directly connects to them.

## Weather



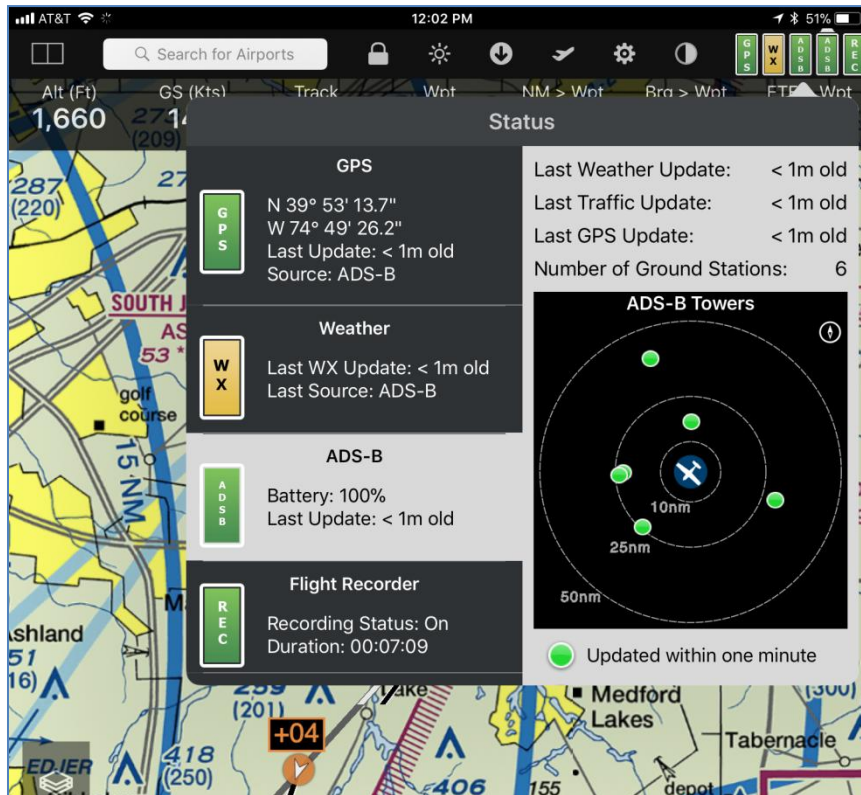
Weather information is critical when flying and you need to know the age and source of the weather to make decisions. This display immediately shows the age and source of each weather product. Weather is downloaded from the Internet every 8 minutes and cached on the iPad/iPhone for use during flight. Green means that weather (at least one product) has been updated within 30 minutes, Yellow is within 60 minutes, Red longer than that.

**Note:** An ADS-B system does not receive all the same data as FlyQ EFB gets from the Internet. Specifically, Satellite is not available in the ADS-B data feed. AIRMET/SIGMET data is in the ADS-B feed but, as of this writing, FlyQ EFB does not process it. This means that the sample display above shows everything working as designed.

FlyQ EFB provides in-flight weather updates when using one of our supported ADS-B receivers. As of this writing, that includes the Merlin, Stratux, Sagetech Clarity, the Dual XGPS 170 and 190, L-3 Lynx, SkyRadar DX, SkyRadar L, SkyRadar D2, all iLevel ADS-B receivers, AW Pathfinder, FreeFlight RANGR, Bendix-King, and NavWorx receivers.

The Stratus 1S and 2S are not supported at this time because AFS (Appareo, ForeFlight, Sporty's) added code to the firmware in those units that appears to serve no purpose other than make it very difficult for FlyQ EFB to connect to it. Similarly, the Stratus 1 and Stratus 2 are supported by FlyQ EFB but only if they have not loaded with firmware version 2.x. Please contact Sporty's or Appareo if you would like to see them remove the blocking code and allow you to use the device you purchased with your choice of app. In general, we do not recommend using Stratus devices with FlyQ.

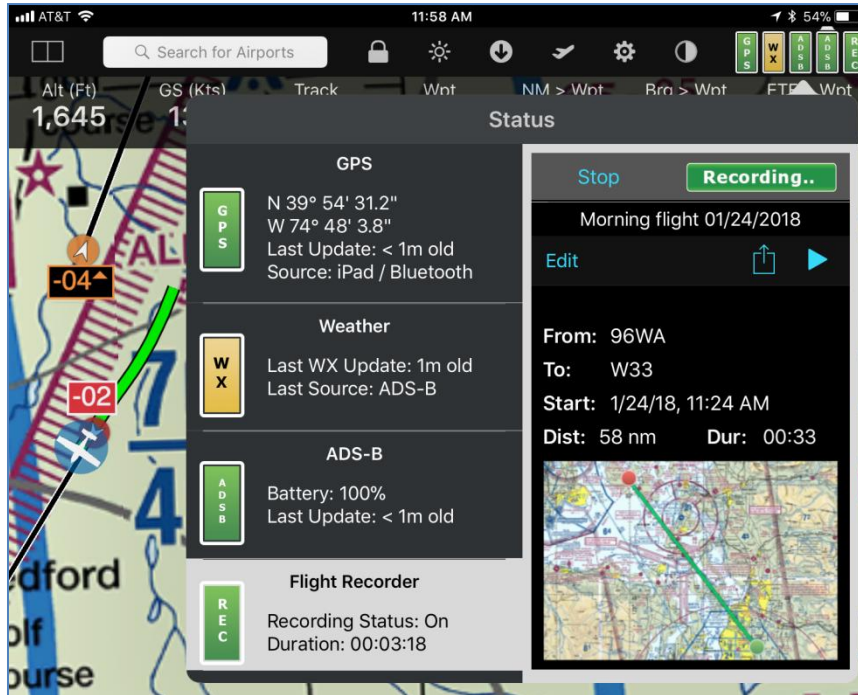
## ADS-B



FlyQ EFB displays a wealth of information about connected ADS-B systems. This includes the time of the last update for GPS, weather, and traffic, the number of ground stations, the relative position of received ground stations, type of system connected, and software version and serial number when applicable.

**Note:** The lack of an ADS-B receiver does not turn the ADS-B indicator red. Rather, the ADS-B indicator only turns red if an ADS-B system is connected then disconnects. In cases where no ADS-B has been connected, the ADS-B icon remains clear. Similarly, if an ADS-B system is connected but it has no integrated battery (Merlin, FreeFlight, SkyRadar, L-3 Lynx, Stratux, or NavWorx) the ADS-B battery indicator is green rather than red. For technical reasons, the ADS-B battery indicator is also green when a Stratus is connected.

# Flight Recorder



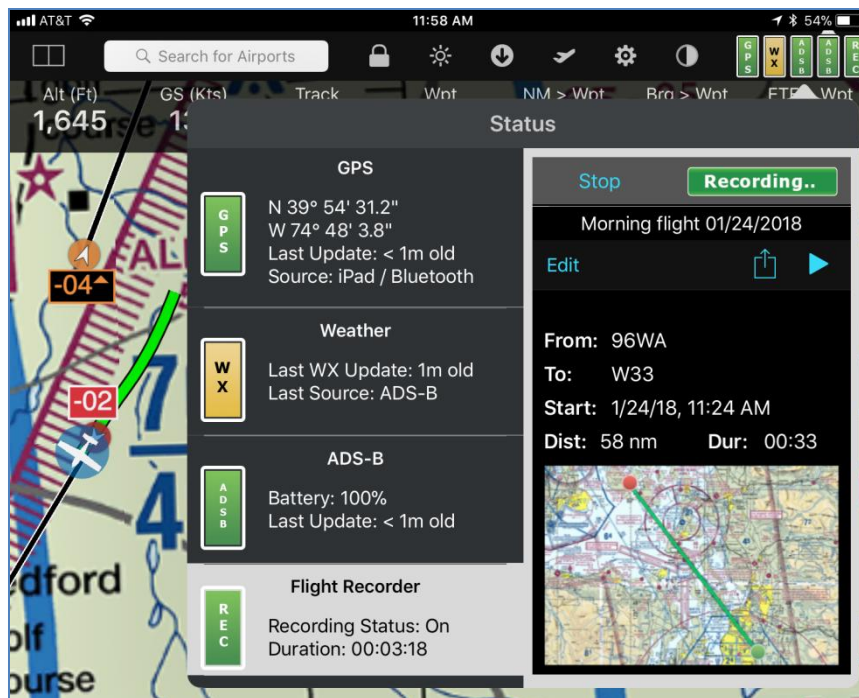
By default, FlyQ EFB automatically records your flights. You can playback your flights from within FlyQ itself or from systems like Cloud Ahoy or Google Earth, quickly post graphical summaries to Facebook or Twitter, and email GPX tracks so your friends and flight instructors can view in FlyQ or Cloud Ahoy. Soon, you'll be able to review them in FlyQ Online as well.

FlyQ includes a map layer called **Flight Track** (aka "breadcrumbs") that shows where you have flown. When it's turned on, the app draws your track as a green line.



FlyQ records your GPS position and altitude once per second. It does not record AHRS (yaw, pitch, and roll) information. The Flight Recorder does not require any specific hardware as it uses any GPS connected to your iPad or iPhone (including the internal GPS from an iPhone or some iPads), the GPS feed that is part of most ADS-B receivers (such as our Merlin), or the GPS feed from an in-panel system such as Dynon SkyView, AFS, or Avidyne.

The summary portion of the **Flight Recording** tab (the one on the left side) shows whether recording is on or off and how long it has been recording (03:18 in the example below). When tapped, the system shows more details including on/off controls and a graphical representation of previously recorded flights, if any. The list of past flights includes controls to view the track on the main map, playback the track, edit the name and other details of the track, and send the track to other apps and systems (Facebook, email, print, etc.).



### Start and Top Recording

Automatic recording starts when your speed exceeds 45 kts for a few seconds and ends when it goes below 20 kts for a few seconds. It will also end if the app doesn't see a GPS update for 50 seconds.

**Note:** Automatic recording can be disabled in **Settings**, in which case, you can still record flights manually. Recordings are stored on your device and in our cloud system. You may disable cloud storage in **Settings** but certain features, such as the graphical track summary and use by FlyQ Online on your PC or Mac, require connection to the cloud so we do not recommend disabling it.

**Note:** The app does not record data when using the built-in GPS simulator (described in the next section). However, it will record “flights” if FlyQ is sent simulated data from X-Plane, Microsoft Flight Simulator, or Prepar3D.

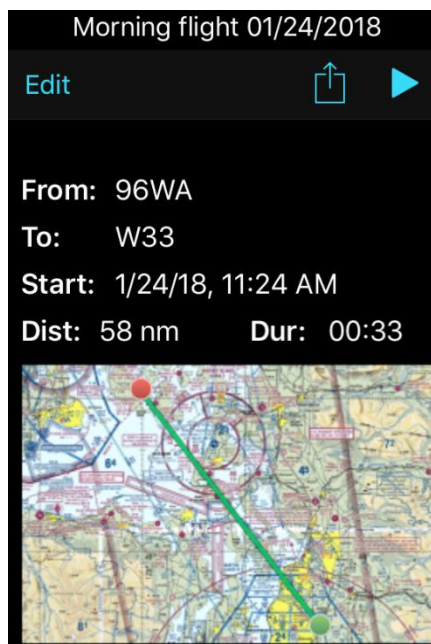


The top of the details portion (right side) has controls for a manual **Start** or **Stop**, depending on whether a recording is in progress or not, as well as an indication of recording status. In the example above, **Stop** is displayed rather than **Start** because a recording is in-progress.

**Note:** If automatic recording is enabled, tapping the **Stop** button will stop recording until the app believes you have landed. At that point, taking off again will start a new track. If automatic recording is disabled, the app will start and stop recording solely based on tapping the **Start** and **Stop** buttons.

### Reviewing and Sharing Previous Flights

FlyQ lists previous flights below the Start/Stop area. Flick the list up and down to see more flights. For each flight, you’ll see a graphical representation of the track, statistics of the flight, areas to name and add comments about the flight, a **Play** button (blue triangle) to playback the flight from within FlyQ EFB, and an **Action** button (box with an arrow coming out the top) to delete the track or send it to other apps or social media (Facebook, Twitter, etc.).



The app names each flight based on when the flight starts (e.g. *Morning Flight 01/24/2018*) and attempts to calculate the takeoff and landing airports (the **From** and

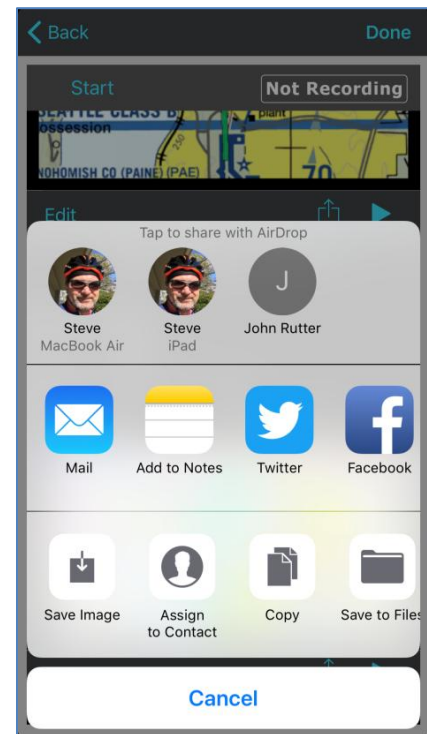
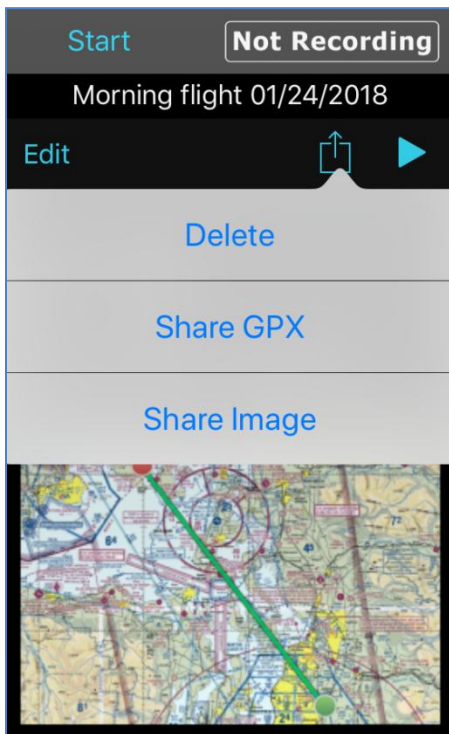


To fields). Tap the **Edit** button to provide a better name, add a comment, or change the **From** or **To** values.

Tap the **Play** button (blue triangle) to put the track on the main map and begin playing it back. Once play starts, tap the **Pause** button (double-bar icon) to stop playback. **Pause** is not shown in the screenshot above because it only appears when the track is playing. You can speed up the playback or jump to any point along the flight using the simulator controls in the **GPS** area of the app (see next section).

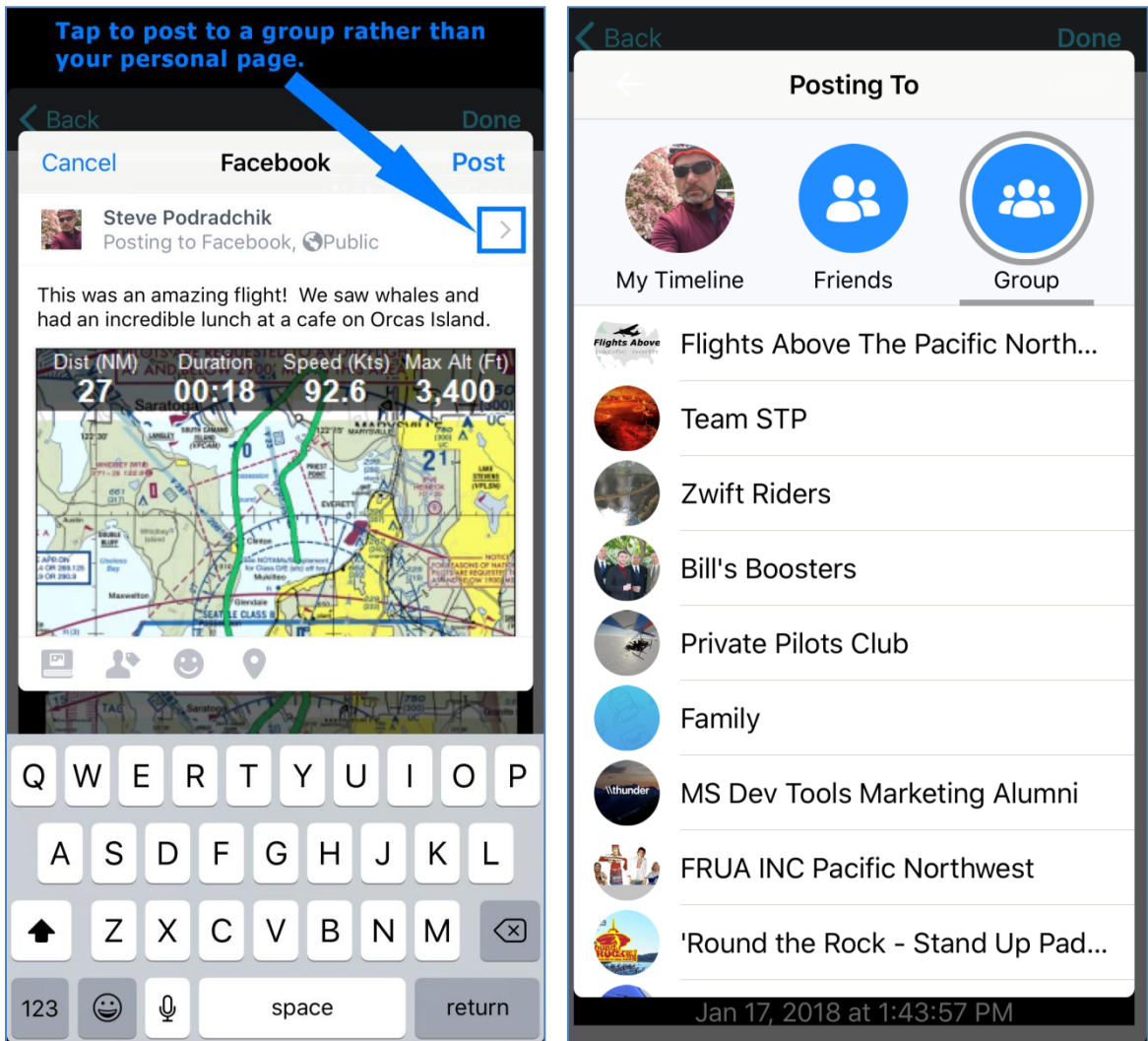
Tap the graphical image of the flight to put that track on the map but not play it. **Note:** The graphical image of the flight is shown as a placeholder graphic rather than your actual track until FlyQ connects to the Internet as the image is generated by our servers.

The **Action** button (box with an arrow) has options to **Delete** the flight, **Share GPX** (GPX is a file exchange format used by Cloud Ahoy, Google Earth, and many other systems) , and **Share Image** (demonstrated below) which sends a graphical representation of your flight via email or text message, to the printer, or to social media systems such as Facebook and Twitter.



**Important!** The **Share GPX** feature can be used to email the track from student pilot to flight instructor or send the flight to your friends. The receiver need only open the email on their iPhone or iPad (with FlyQ EFB installed), double-tap the GPX attachment, and FlyQ will load the track into the **Flight Recording** area where it can be viewed or played.

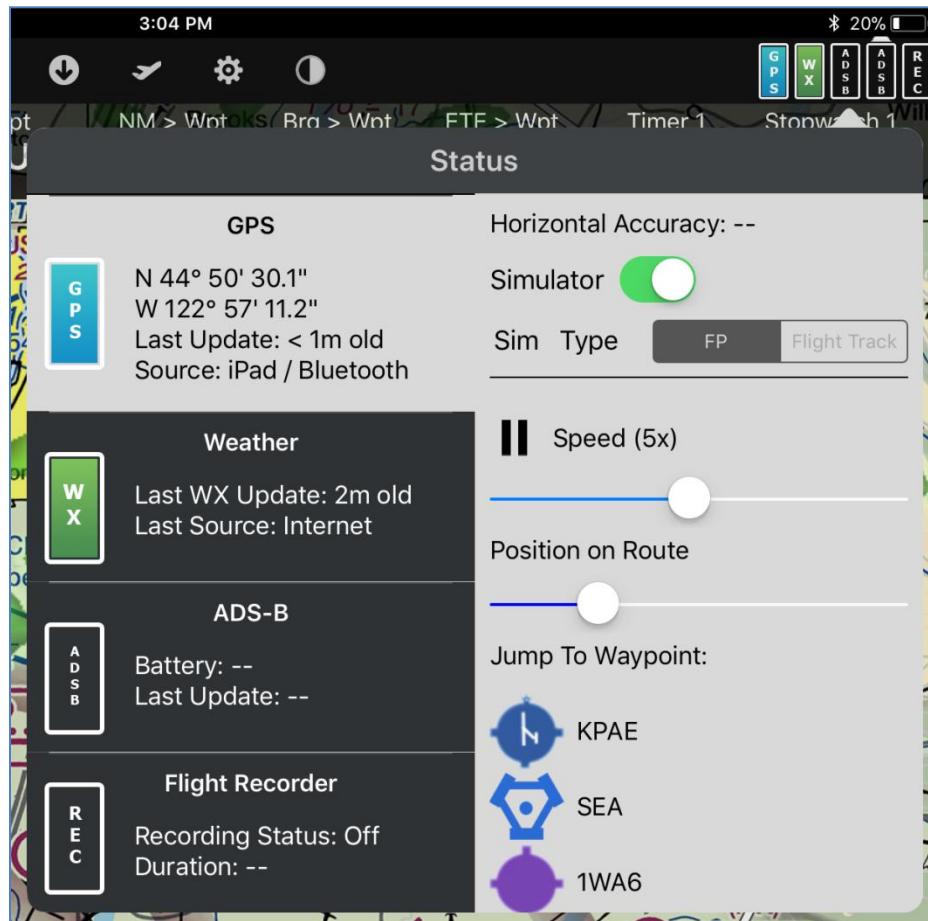
**Facebook Tip:** You have the option to add text describing the flight and, if you're a member of one or more Facebook groups (like *Private Pilot's Club*, *Flights Above The Pacific Northwest*, etc.), you can post to that group or to your own page.



Previous flights can also be accessed from the **Flight Tracks** section of the **Settings** page (**Flight Planning** category).

## Built-in Simulator

Perhaps the best way to learn about a product before you fly with it is to use the powerful built-in simulator. The FlyQ simulator can either “play” a flight plan or playback an actual recorded flight.



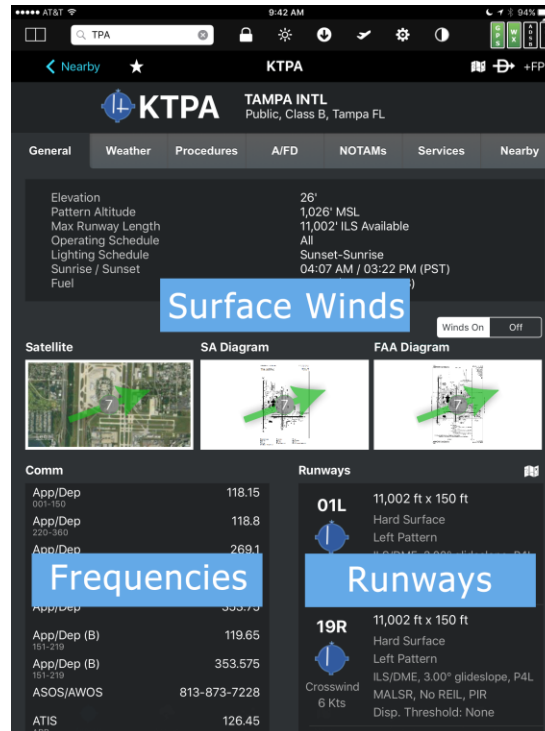
To simulate a planned flight, load or create a flight plan. Look at the **Status Indicator** at the upper right of the screen and tap **GPS**. Finally, turn the **Simulator** switch on then watch the flight begin. You can speed up the flight or jump immediately to any point in the flight by either time (the **Position** slider) or by selecting a specific waypoint (the **Jump to Waypoint** button).

To playback a flight track, go to the **Flight Recorder** section and click the blue **Play** triangle for the desired track. Go to the **GPS** section to control playback speed or use the **Position** slider to move to any point during the flight. The **Jump to Waypoint** feature is not available for a recorded flight.

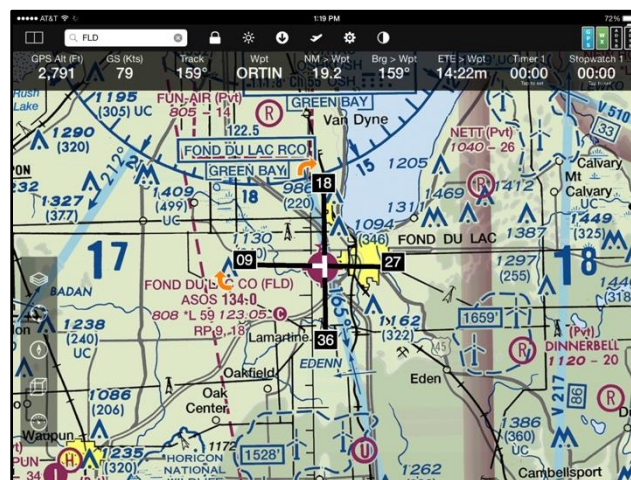
**Tip:** For even more realistic training, connect FlyQ EFB to X-Plane, Microsoft Flight Simulator, or Prepar3D. See the *External Devices and Applications* section later in this document for more information.

## Getting Info

Flying requires fast and easy access to data and FlyQ EFB has you covered. We put particular emphasis on giving you important airport information quickly and clearly. In fact, we have a name for it: [The Rule of 2](#). *The Rule of 2* means that it should never take more than two tap to get to key inflight information. As you can see, with just a simple tap all the key information you need to fly to an airport is shown clearly and concisely on one screen; there is no need to hit buttons or tabs to get information.



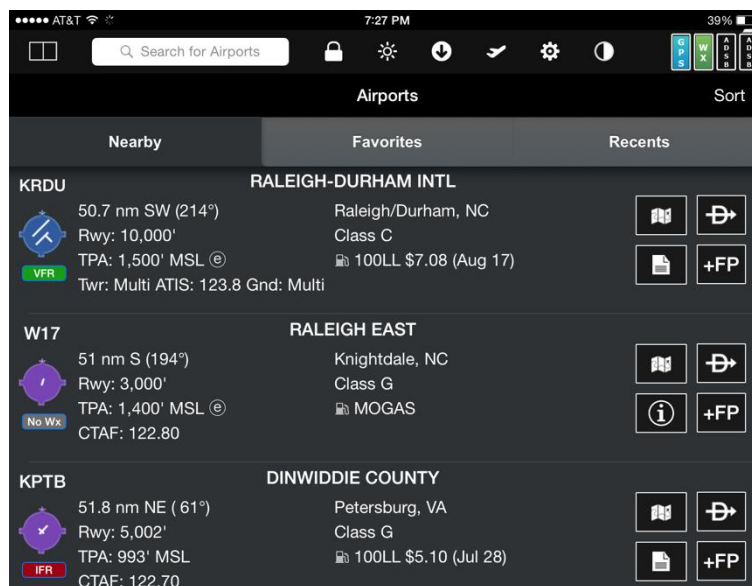
The runways at the selected airport are automatically shown as extended lines on the map for easier recognition. An orange arrow appears on the map to inform you if a runway has a right-pattern. Deselect the **Runways** item on the map **Layers** pop-up to hide extended runways.



## Nearby Airports

Let's say you're flying and have an emergency or you simply like the security of always knowing what the nearby airports are. Easy! Just tap the **Airports** tab and FlyQ EFB instantly uses the GPS to show nearby airports. Normally these airports are sorted by distance but you can tap the **Sort** button to sort by weather conditions, longest runway, or even by which airports have fuel. This list is not static; rather, it updates automatically every 15 seconds so it's a great safety aid to keep this screen up all the time. And it's much more than a simple list of airport names. For each entry, you'll see current weather conditions, distance and bearing to the airport, the lowest fuel price, key operational info such as elevation, TPA, frequencies, and more. Of course, tap any entry for even more info.

**Note:** There are more than 10,000 US airports that are private or heliports that don't apply to most pilots. Therefore, by default, FlyQ EFB hides private airports and heliports during a search and in the **Airports/Nearby** tab. This can be changed in the **Settings** screen, in the **Preferences** section.



## Direct To and Add to Flight Plan (+FP) buttons

You'll see a **Direct To** symbol and a **+FP** button next to each airport. Tapping **Direct To** does just that; it modifies (or creates) a flight plan from your current position directly to that airport. If the airport is already in your flight plan, points before the selected airport are removed but later points are retained. If the airport was not on your flight plan, the entire flight plan is replaced with this new plan. **+FP** means "Add to Flight Plan" and lets you insert this airport anywhere within an existing flight plan.

## Map button

Tap the Map icon to jump the map directly to that point.

## Procedure button




A Procedures icon (piece of paper icon) appears when an airport has IFR procedures. Tap it to jump immediately to viewing the procedures for that airport. If an airport does not have procedures, the Procedures icon is replaced with a General Information icon (the letter “i” with a circle around it). Tapping that icon shows general airport information, exactly as tapping in the main area of the row.

**Tip:** When looking at a list of airports, it’s easy to see which airports have procedures and which do not by looking for those with a Procedure icon rather than the General Information icon.

## Airports on Your Flight Plan

You may want to look up information on your destination as you approach it. Tap the **Plans** tab, tap your landing airport in the **NavLog** and there it is.

**Tip:** Taping an airport here automatically shows the extended runway centerlines and right-pattern indicators on the map.

	MXW	11,500'	174°	00:21:34	252° 4 kts	33.5 nm	93	95
	WUSHU	11,500'	176°	00:20:49	280° 3 kts	30.8 nm	89	89
	0Q9	11,500'	135°	00:04:03	260° 3 kts	5.5 nm	81	80
	SGD	11,500'	166°	00:23:34	0° 0 kts	33.6 nm	86	86
	KSFO	<b>Tap for KSFO info</b>						

## Search Box

The **Search Box** at the top of the screen is extremely powerful. You can use it search for airports, navaids, and fixes by ident, airport name, or city. Tap any search result for more information about it.

**Direct To** creates a flight plan directly from your current location to that point or sets that point as the next waypoint if it’s already in your flight plan.

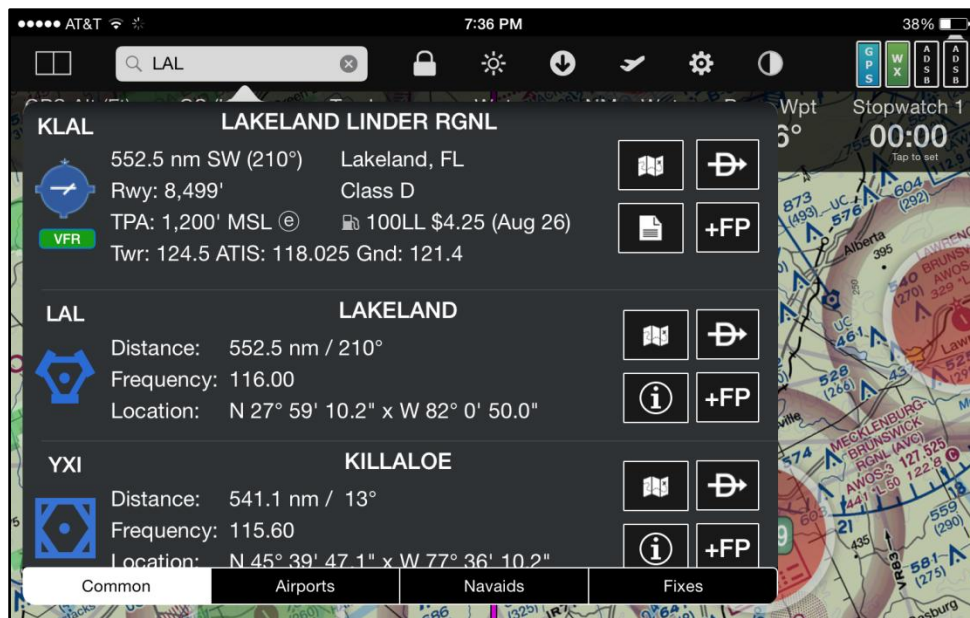
**+FP** (Add to Flight Plan) allows you to insert the point anywhere in your current plan or begin a new plan if there is no existing flight plan.

**Map** centers and zooms the map on that location.

A **Procedures icon** (piece of paper icon) appears when an airport has IFR procedures. Tap it to jump immediately to viewing the procedures for that airport. If an airport does not have procedures, the Procedures icon is replaced with a General Information icon (letter “I” with a circle around it). Tapping that icon shows general airport information, exactly as tapping in the main area of the row.

**Note:** There are more than 10,000 US airports that are private or heliports that don’t apply to most pilots. Therefore, by default, FlyQ EFB hides private airports and heliports during a search and in the **Airports/Nearby** tab. This can be changed in the **Settings** screen, in the **Preferences** section.

**Tip:** When looking at a list of airports, it’s easy to see which airports have procedures and which do not by looking for those with a Procedure icon rather than the general Information icon.



You can enter a latitude/longitude in the **Search Box**. There is no standard way to enter latitude/longitude points so FlyQ EFB recognizes all the common formats such as:

- W121.25N47.5 or N47.5W121.25
- W121.25xN47.5 or N47.5xW121.25
- W121'15'N47'30' or N47'30'W121'15'
- 4730/12115
- 4730N/12115W

**Note:** You **cannot use spaces to separate latitude and longitude** because FlyQ EFB interprets spaces as multiple idents.

In addition, you can enter a lat/lon as relative to a navaid or fix by using the navaid or fix ident, a slash, a radial (or bearing for a fix), and a distance in NM.

For example:

*SEA/87/35*

This is the point 35 NM along the 87 radial from the SEA VOR. If a fix is used instead of a navaid, the first number is a magnetic bearing rather than a radial.

You can find the intersection of radials from two nav aids as follows:

*SEA104/TCM74*

This is where the 104 radial from SEA meets the 74 radial from TCM. It also happens to be the RADDY fix.

CAP grid references can also be entered. FlyQ EFB accepts grid references in Gridded Sectional, Cell, or GARS format regardless of which grid system is displayed. Unless a corner suffix is added (*NW, NE, SE, or SW*), the lat/lon of the center of the grid cell will be used. See the *Search and Rescue* section at the end of this document for much more information.

*SEA140*. The center of the SEA 140 grid cell.

*SEA140A*. The center of the SEA 140A grid cell (which is the upper left quadrant of the SEA 140 cell)

*SEA140ANE*. The top-right corner of the SEA 140A grid cell.

See the *Waypoint Entry* section below for more information about these formats.

**+WPT** appears in the search results if you enter a latitude/longitude point, a location relative to a navaid or fix, a CAP grid reference, or the intersection of radials from two nav aids. **+WPT** creates a Personal Waypoint at the latitude/longitude location. You can name these, show them to a map, and use them on a flight plan. See *Personal Waypoints* for more information.

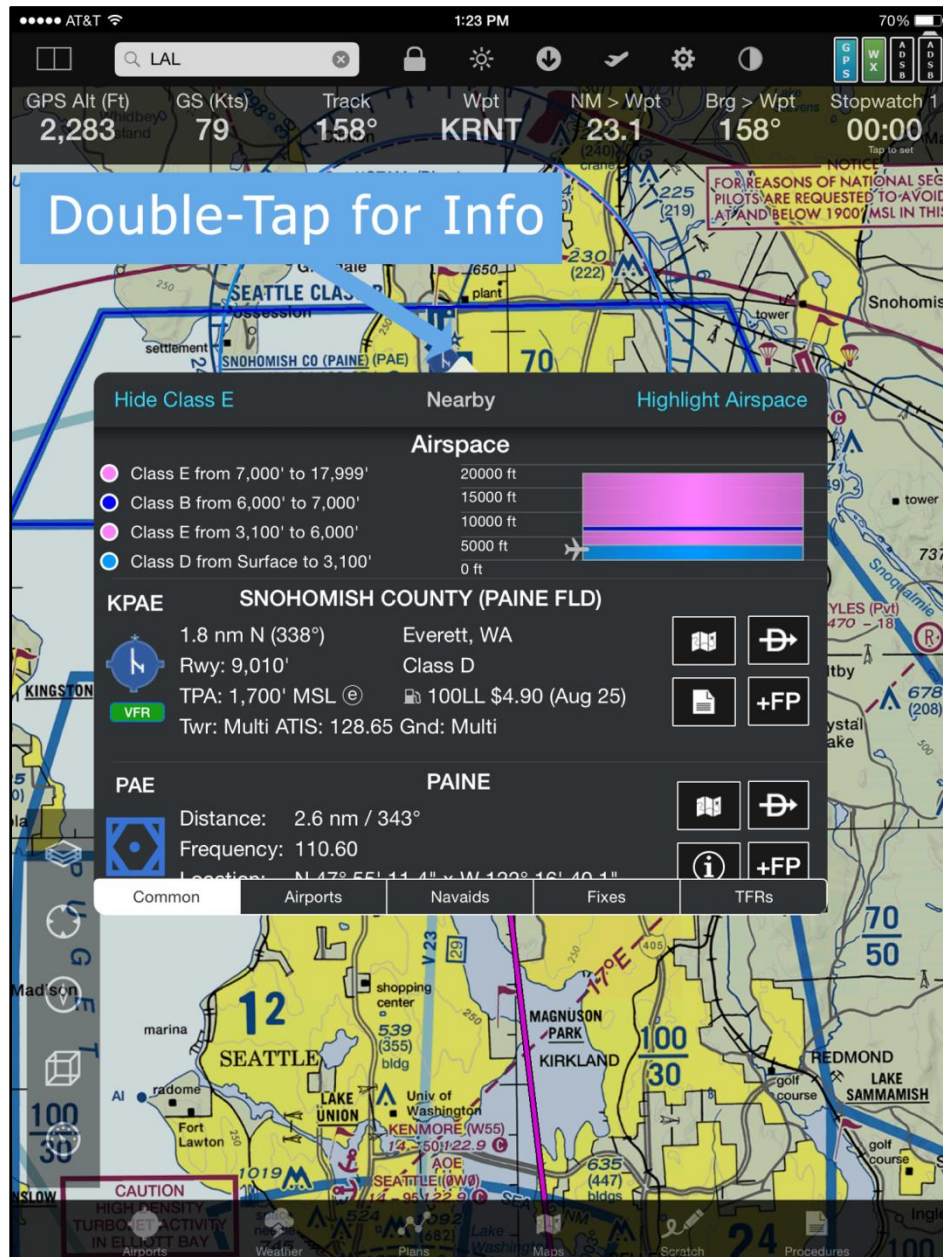
You can also create a flight plan by entering a series of idents into the **Search Box**. See *Flight Planning* for more information.



## Double-Tap the Map for Airports, Nav aids, Fixes and TFRs

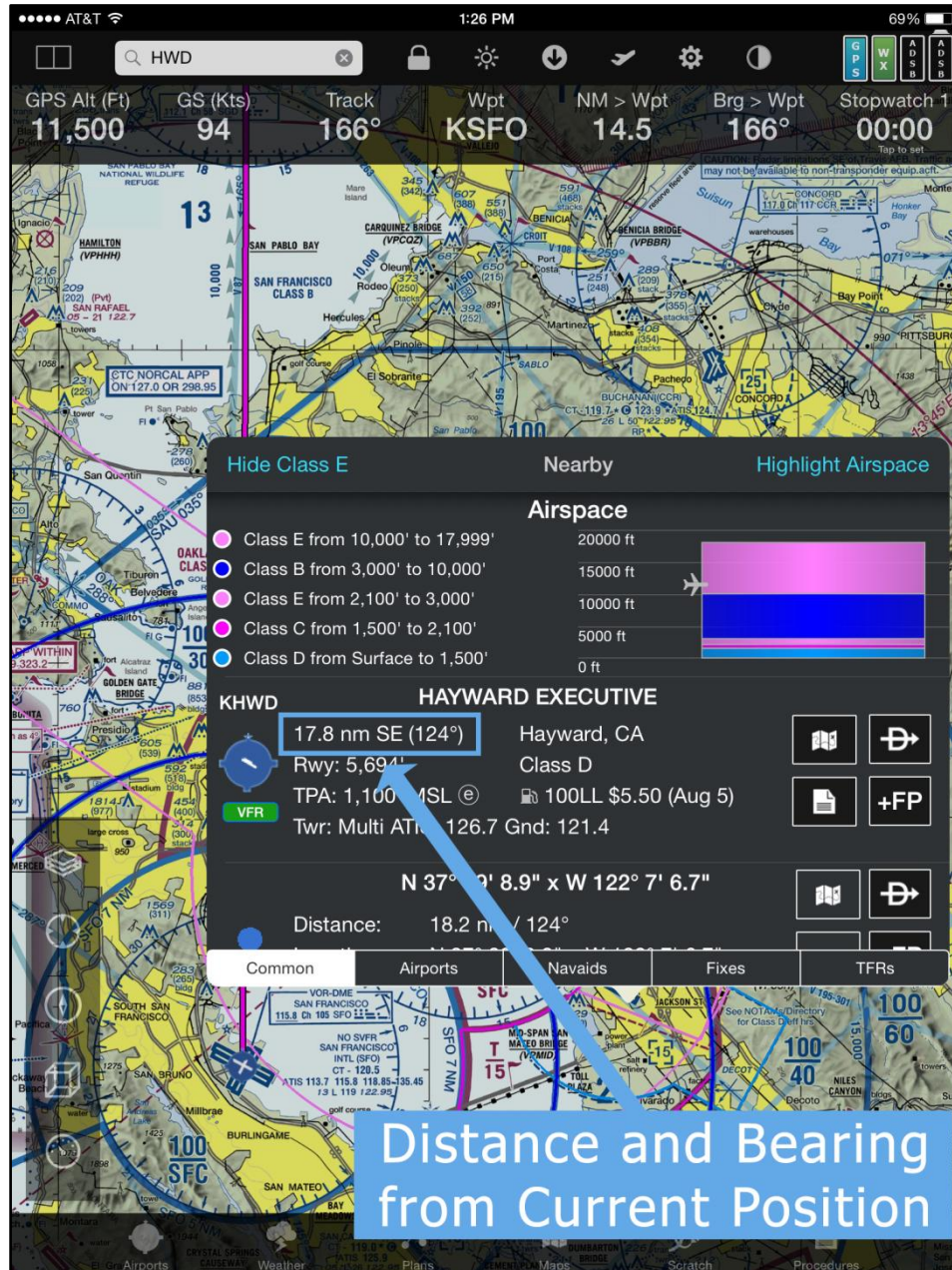
Humans are visual creatures and typing on an iPad or iPhone, especially while flying, isn't always the easiest thing to do. Once again, FlyQ EFB has you covered with a simple system for getting info about airports, nav aids, and fixes on the map: Double-tap the map and FlyQ EFB pops-up matches in the area you tapped. This list has tabs at the bottom. By default, the list just shows airports and nav aids but you can also select the **Fixes** tab or even **TFRs**.

**Tip:** Some people have asked why double-tap not single-tap like some other apps. We did this intentionally because it's simply too easy to tap the screen accidentally, especially in rough weather.

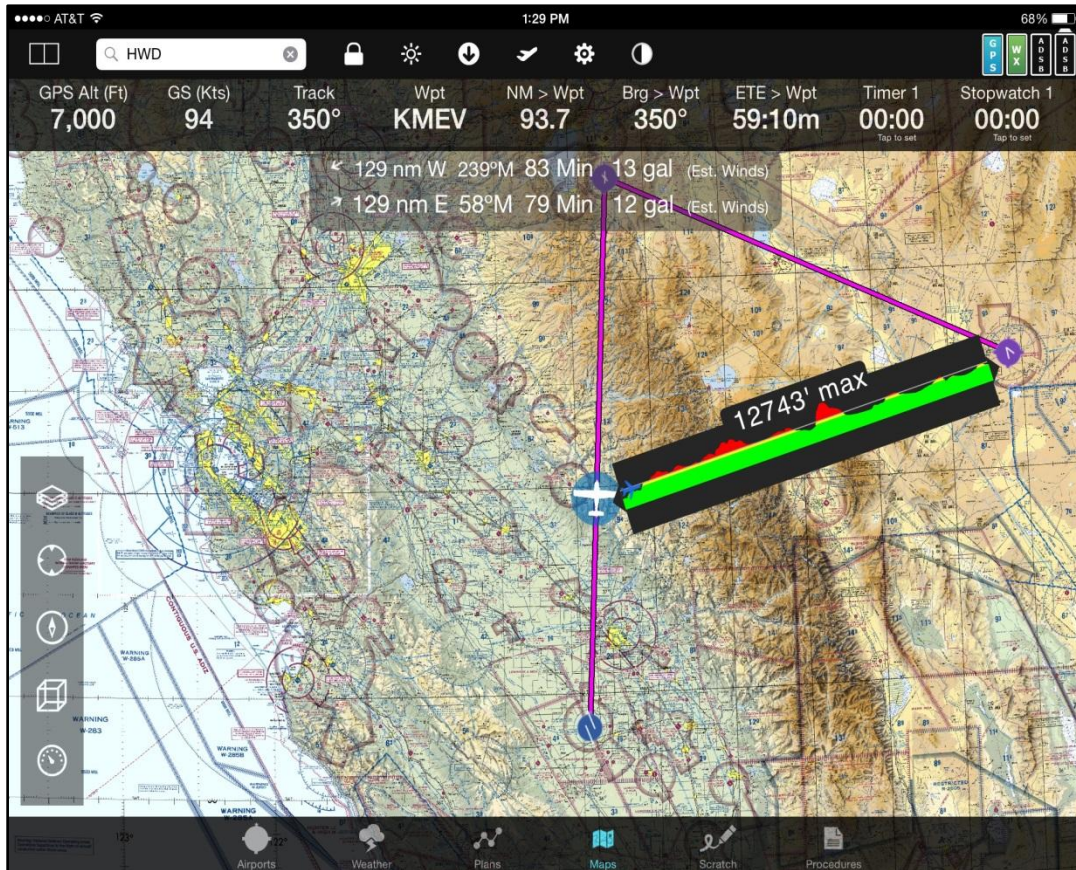


## Distance and Bearing to an Airport or Navaid

It's very common to need to know how far an airport or navaid is when calling the tower with a position report, managing fuel, and so on. Some other apps have a way of placing multiple fingers on the map. We have that, too, but we also have something much easier for most uses: Double-tap anything on the map and the pop-up shows the distance and bearing from your current position to every object near the double-tap. Simple!



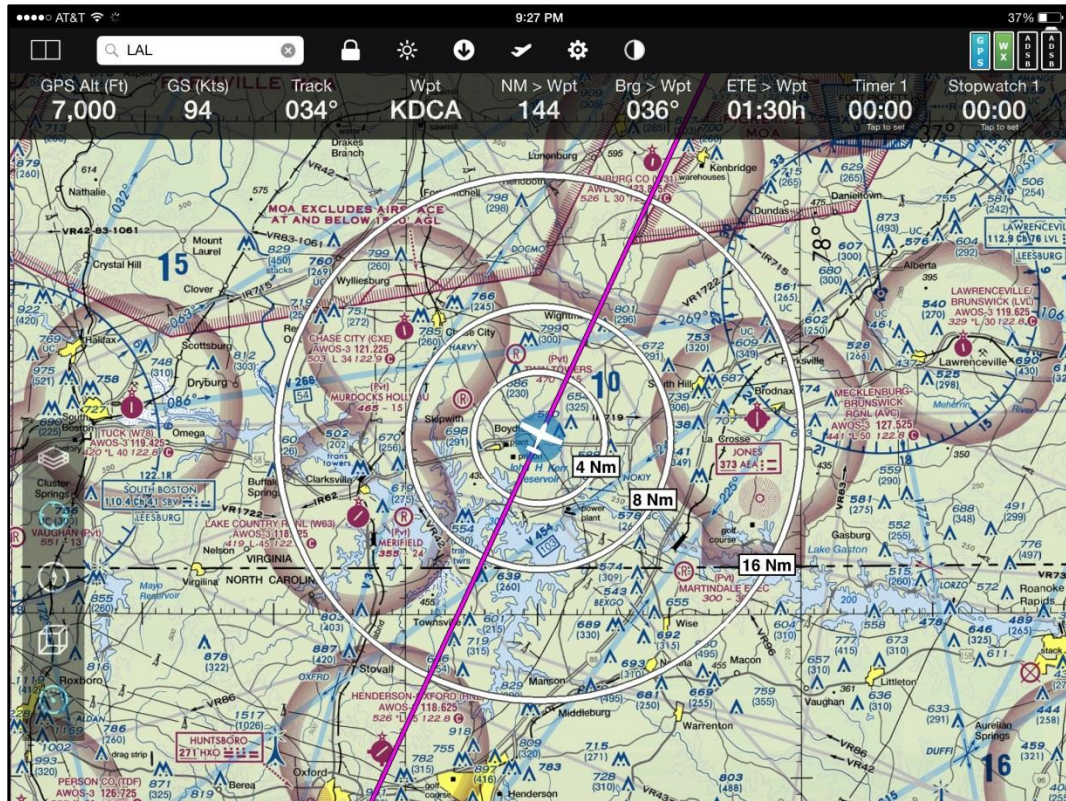
## Distance and Bearing between Any Two Points



FlyQ EFB has an exclusive distance measurement system with Terrain X-Ray™ that's activated by putting two fingers on the map at the same time. Not only does it show distance and bearing when you press and hold two fingers on the map, it even calculates expected flight time and fuel consumption that take the winds going in both directions into account. Best of all, our exclusive Terrain X-Ray clearly shows elevation between the points relative to your aircraft and where terrain issues may be (yellow and red areas). The maximum elevation between the two points is shown at the top of the terrain profile.

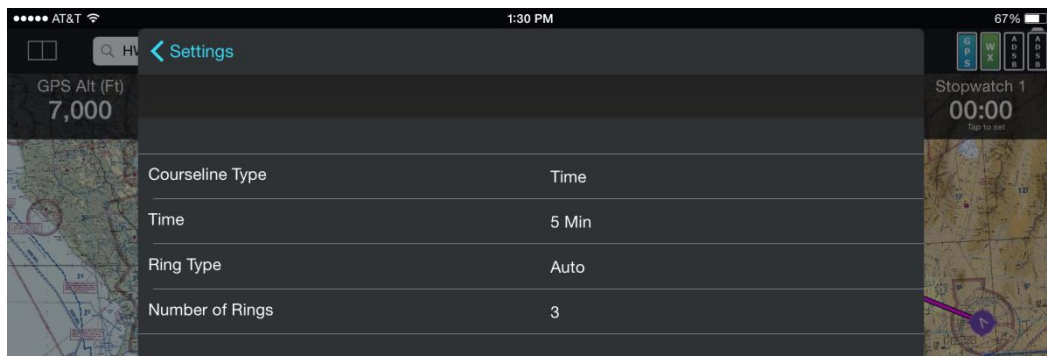
**Tip:** You can move either end of the Terrain X-Ray by pressing one finger against either end then dragging it to a new position. Remove your finger to stop the dragging.

## Distance and Time Rings



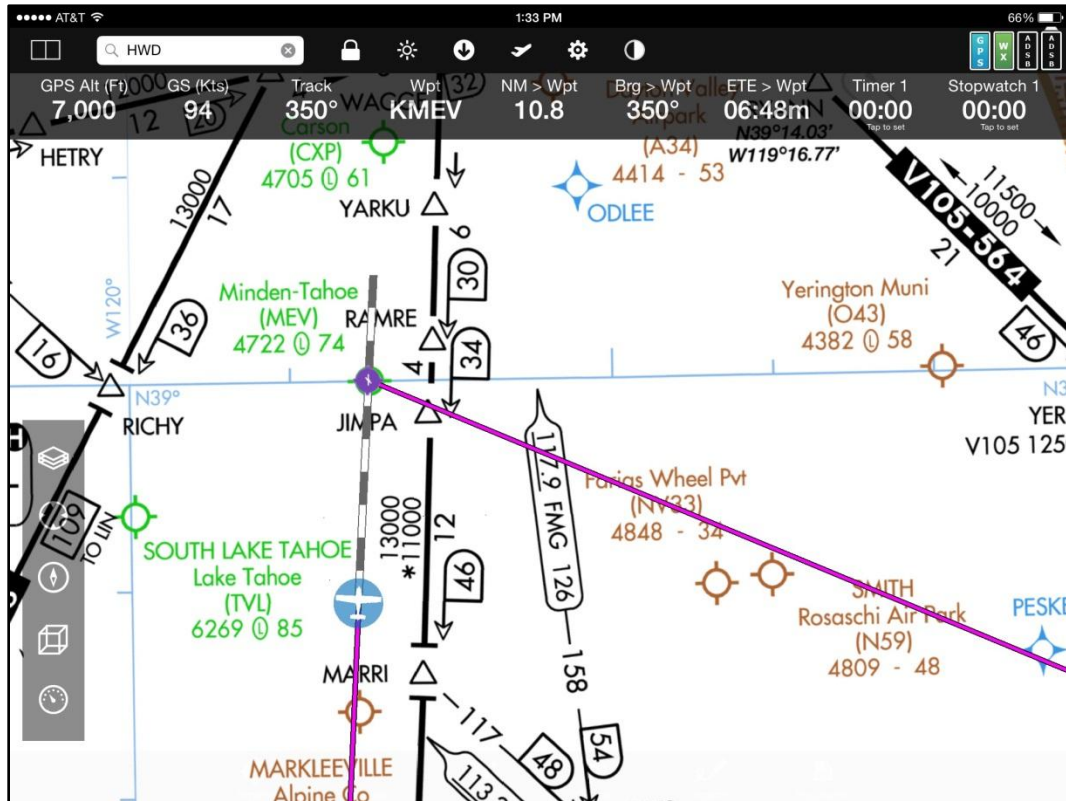
Another way to measure distance from your current location is to turn on the **Rings** layer. When enabled, you can see rings based on distance or time based on your current speed.

Tap the **Courseline and Rings** option in **Settings** to customize. Select 1, 2, or 3 rings with specific distances or times between the rings or use *Auto* to let FlyQ determine what's best given your zoom level. Rings can be spaced as close as  $\frac{1}{4}$  NM (useful for CAP missions).



**Tip:** You won't see time-based rings unless you're moving.

## Extended Courseline



Select the **Courseline** layer on the map to put a line in front of the aircraft marker in terms of either a fixed distance or time based on your current speed. In either case, the line is segmented with alternating bands of dark grey and white to show each unit of either distance (e.g. 1 NM) or time (e.g. 1 minute). This makes it very easy to see and avoid airspace. As with Rings, tap the **Courseline and Rings** selection in **Settings** to customize the feature.

**Tip:** You won't see either a time or distance based courseline unless you're moving.

## Airspace Info

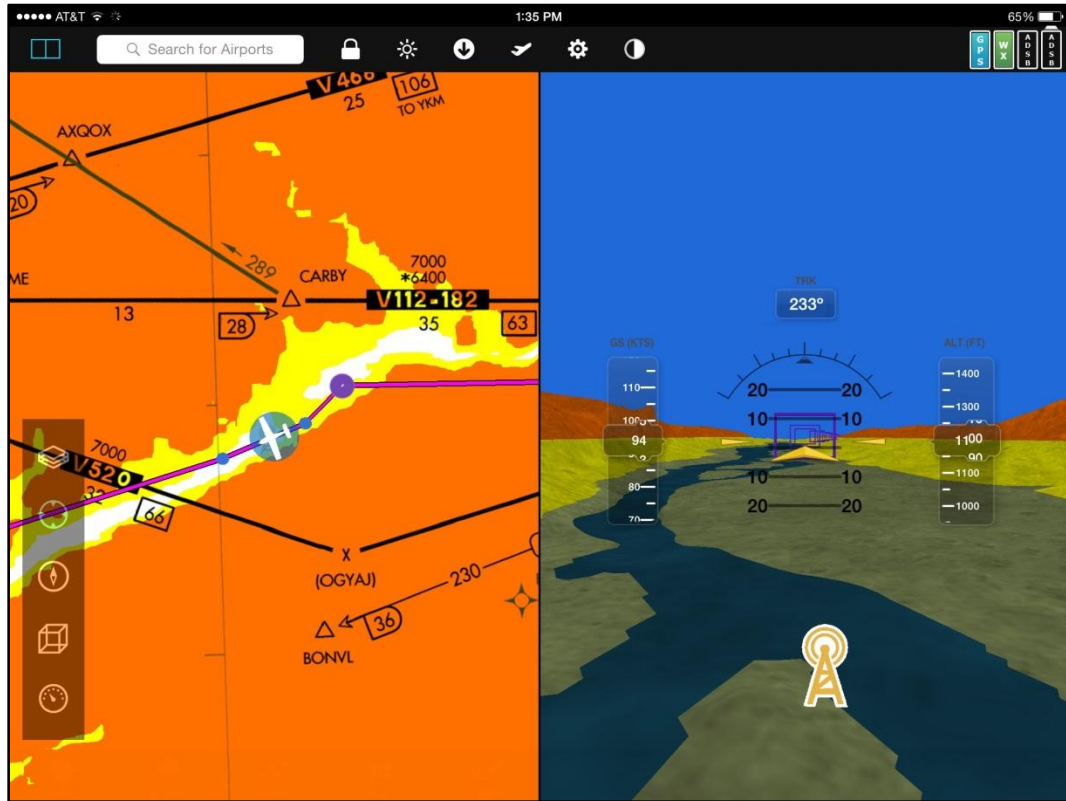
Only FlyQ has a patent-pending system for graphically showing you all the airspace layers you're in. In the example below, you're flying at 11,500 ft. and you can clearly see that you're just above the Class B area. Of course, tap the airspace graphic for more info including frequencies and other info that's especially handy for SUAs and MOAs.

Double-tap anywhere on the map for airspace info.



## Terrain and Obstacle Warnings

No one ever thinks they could possibly fly into the ground or hit a man-made obstacle yet every year pilots do just that. FlyQ EFB makes it easy to stay clear of terrain and man-made obstacles in both 2D and 3D mode: Simply tap the **Layers** button on the map then turn the **TAWS** (Terrain Awareness Warning System) and/or **Obstacles** layer on.



Terrain and obstacles are color-coded the same way: Red means you're either below or within 100 ft. of the terrain or obstacle, yellow means you're within 1,000 ft. of it. Terrain that isn't a factor is left the color of the original map. Obstacles that are no factor are blue.

**Tip:** If TAWS is on while you're pre-flight planning (that is, on the ground), the maps will appear yellow or red. You can disable TAWS unless you're actually moving, even if the TAWS layer is on, via the **Only show TAWS when moving** switch in **Settings**.

FlyQ adds a patent-pending system for detecting obstacles you're most likely to hit based on your altitude, speed, and course. When FlyQ detects such obstacles, you'll see a red pie-shaped cone in front of the plane (2D only) and a clear warning message in bright red urging avoidance.



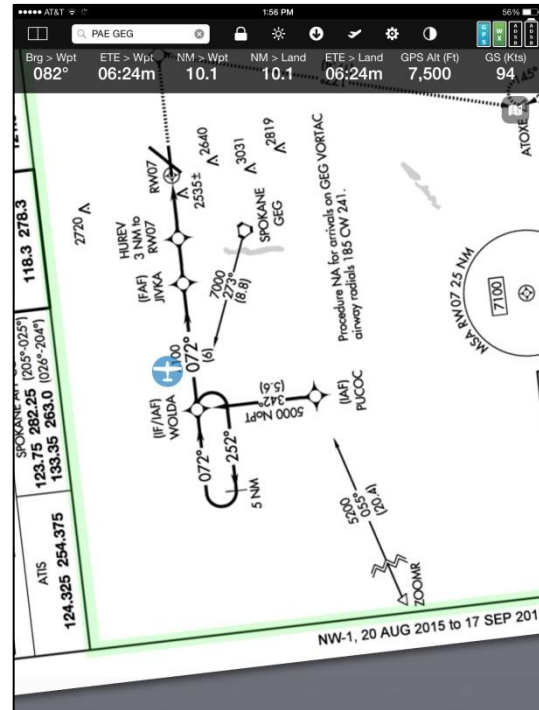
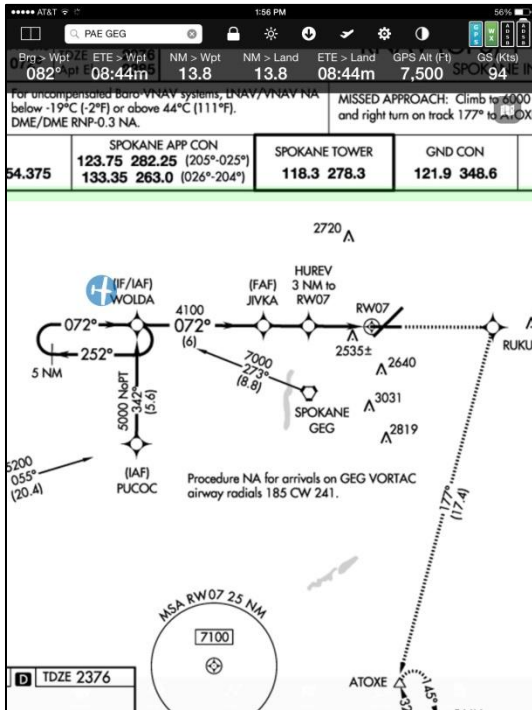
**Tip:** The pie-shaped cone normally appears only when an obstacle is a threat. You can turn the cone on all the time by selecting **Always show obstacle detection area** in **Settings**. The cone will be green when no threats are detected and red when they are.



## Approach Procedures

FlyQ EFB was designed with IFR pilots in mind and it shows. The **Procedures** tab does far more than just show geo-referenced approach procedures.

Select an airport using any method (enter an ident on the top **Search Box**, use the **Airports/Nearest** function, double-tap on the **Map**, tap an entry in **Plans/NavLog**, etc.) then use the **Procedures** sub tab to select a procedure.



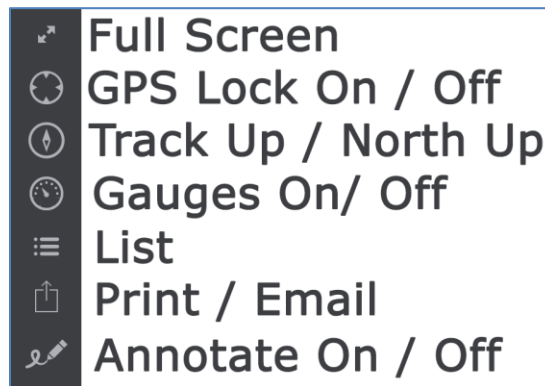
## Using Procedures

### Swipe between plates

Use a single finger to swipe left or right to select procedures/diagrams.

### Toolbar

Tap the procedure and a toolbar appears for 6 seconds then fades away so you can see more of the plate itself. In **Settings**, you can configure this delay to 2 seconds, 6 seconds, or never fade away.



### Full Screen button

Tap to show the current procedure/airport diagram using most of the iPad/iPhone screen. Use the **Close** button in the Full Screen view to return to the normal view.

### GPS Lock (Center) button

Similar to the **GPS Lock** button on the map, engaging this moves the procedure or airport diagram around your position rather than move the aircraft icon around the procedure/diagram. Once selected, tap again to zoom-in. The button disengages when you manually move the procedure.

### Track Up button

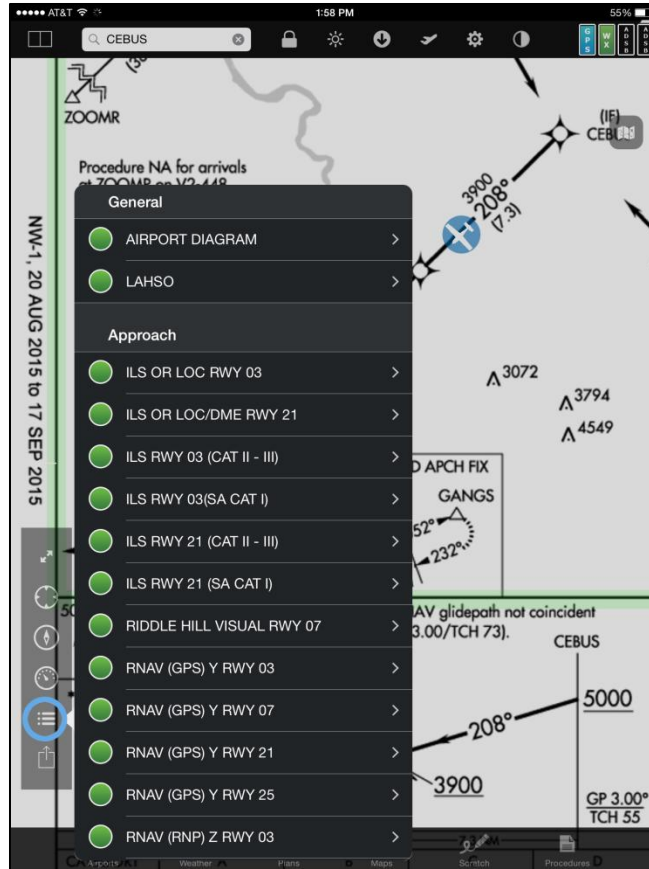
As with the **Track Up** button on the map, turning this on rotates the procedure or airport diagram as you fly such that what's ahead of you is always above you.

### Gauges button

Toggles the Gauge Bar on and off, just like it does with maps.

## List button

Rather than swipe between plates, tapping the **List** button shows a list of all the procedures/diagrams at the selected airport so you can immediately jump to any procedure or diagram. On an iPad, the List pop-up stays up until you tap off it so you can preview multiple procedures before you make your choice.

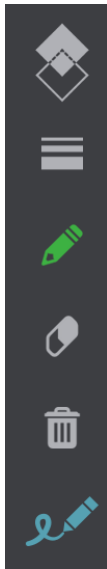
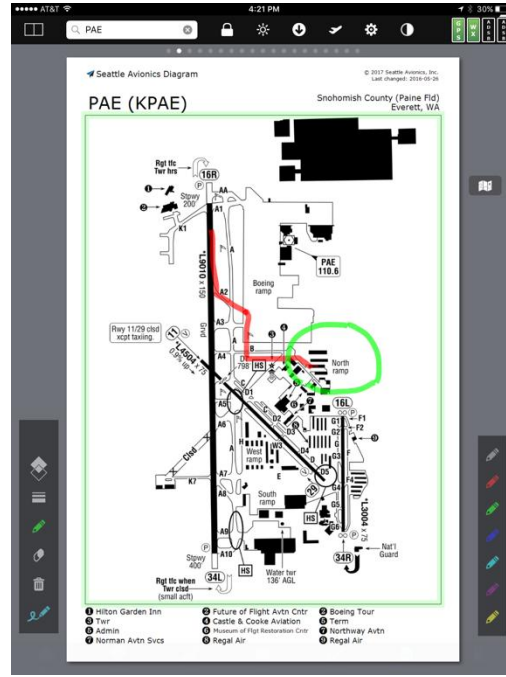
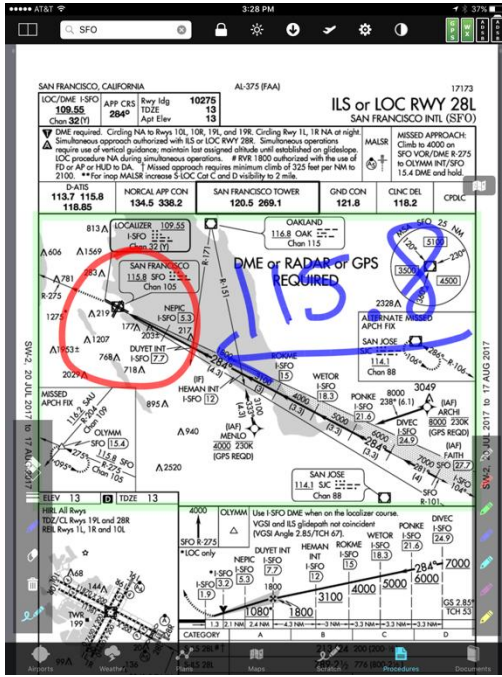


## Action (Email/Print) button

It's good practice to keep a few printed procedures in the aircraft in case your iPad or iPhone fails. Use the **Action** button (icon with an arrow coming out the top) to send the selected procedure to an [AirPrint compatible printer](#) (such as an HP wireless printer) or email it to you someone (such as yourself) to print on any other printer.

## Annotate button

You can annotate plates and diagrams by writing on them with your choice of pen colors, widths, and degrees of transparency. This is helpful to note frequencies, ATIS, etc. or draw taxi instructions on the FAA or Seattle Avionics Airport Diagrams.



When Annotate mode is on, the toolbar on the left side is replaced with one that includes drawing tools. Tap the blue Annotate button again to end annotation mode and return to normal viewing mode.

They are (top to bottom): *Line opacity*, *Line weight* (thickness), *Pen mode* (the default), *Eraser mode*, *Trash* (erase all annotations), and the *Annotate* button itself.

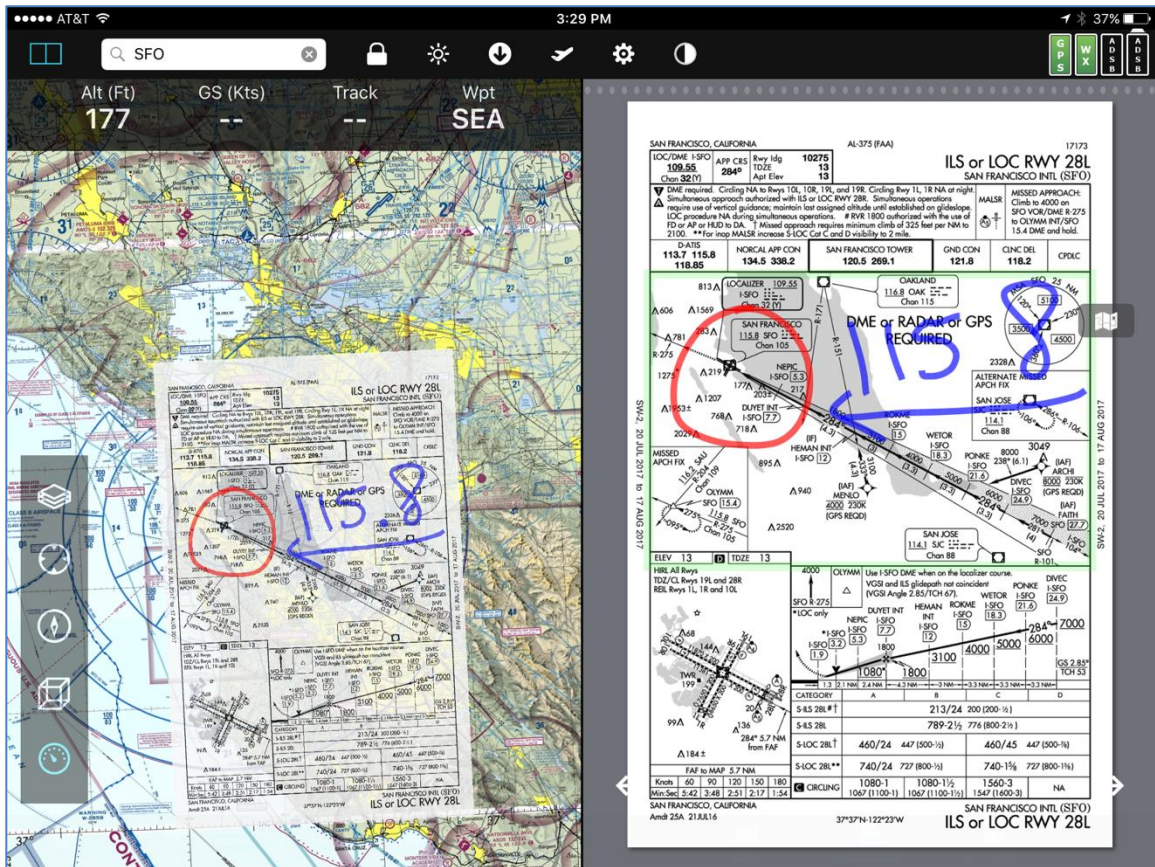
**Note:** Changing the opacity or weight shows a secondary popup. Once you select the new opacity or weight, you cannot draw again until you tap off the popup to dismiss it.

Another toolbar is also added on the right side with pen colors.

In Annotate mode, you can zoom a document in or out but cannot pan left or right since moving your finger across the diagram will draw a line.

### Map button (upper right corner of an approach plates)

Procedures can be shown on a map as well as in the **Procedures** tab. Tap the **Map** button to show this procedure on the map and zoom to the center of the airport (not necessarily the procedure). Only available for IAPs and Airport Diagrams. Once a procedure or diagram is selected, switching to another procedure or diagram automatically shows the new item on the map rather than the original one.



**Tip: Procedures** is a map layer so use the **Layers** button on the map to remove the procedures from the map.

### +FP button (upper right corner of a SID/STAR)

You can add all the NavLog entries for a SID or STAR with a tap. Once added to the NavLog, tap **-FP** here to remove it. Only available for SIDs and STARs.



### **Search box (on the main toolbar at the top of the app)**

Enter an ident or airport name to select a different airport then tap the **Procedure** icon that appears in the search results. For example, *SFO* above.

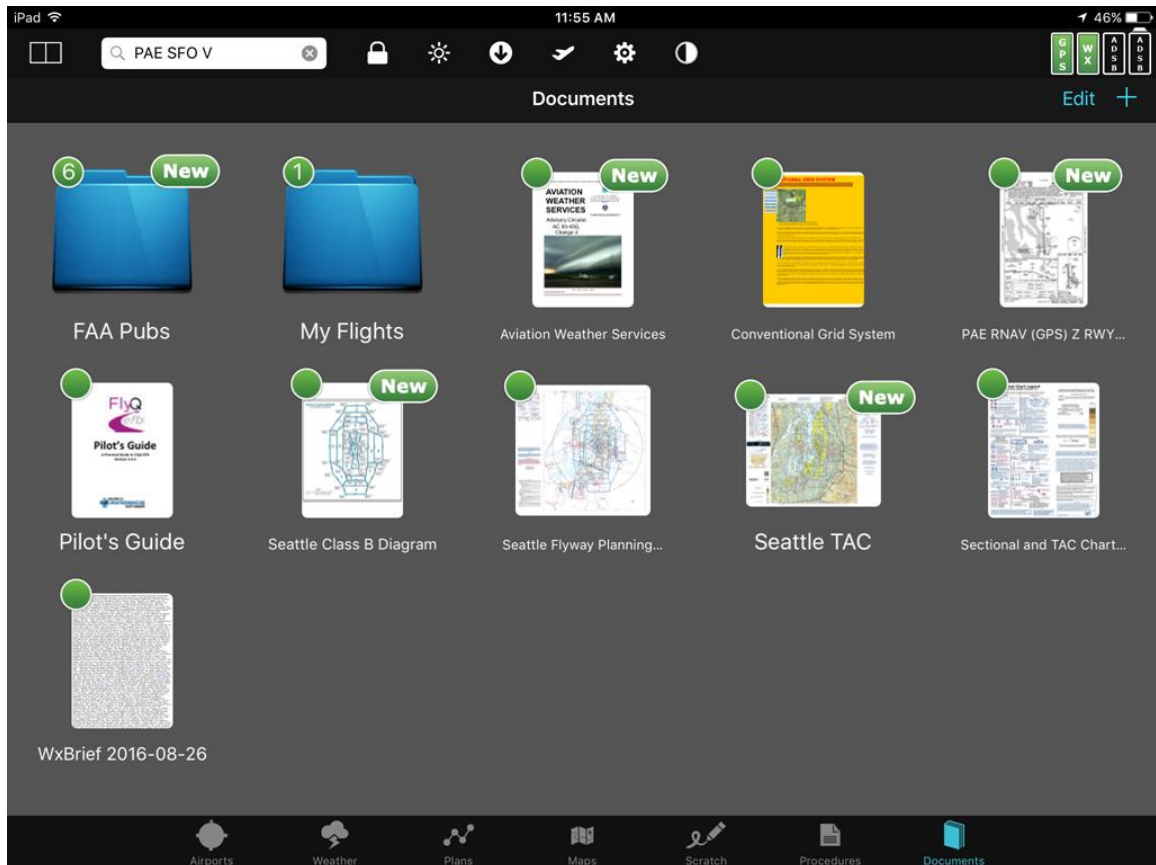
### **Night mode (on the main toolbar at the top of the app)**

Night Mode is a general function that applies to map as well as procedures/diagrams so it's on the top toolbar (the half white/half black circle). When Night Mode is on, black and white are reversed while other colors (such as terrain contours) are preserved.

The Night Mode switch is on the main toolbar at the top of the app.

## Documents

The **Documents tab** gives you immediate access to a library of more than 200 FAA publications and charts (Flyway charts, helicopter charts, etc.), weather documents, Seattle Avionics documents, legends, and more. You can also easily add your own documents by entering a URL or emailing them to your iPad or iPhone. Even tap to add photos already on your device.



FlyQ automatically downloads new versions of documents as they become available. For example, if you download the full Seattle TAC, FlyQ will automatically download the new TAC when the FAA updates it. Unlike the ChartData Manager, document updates are automatic and happen in the background.

By default, you'll see the *FlyQ EFB Pilot's Guide* and the *Sectional and TAC Legend*. Use the + button to add more documents.

Each document has a colored status dot icon in the upper left corner. Green = downloaded and ready for offline use, yellow = in the process of downloading, red = not downloaded.

Documents get a **New** icon in the upper right corner when they've been downloaded but not yet opened. **New** also appears if the source document gets updated (like a new version of an FAA chart).

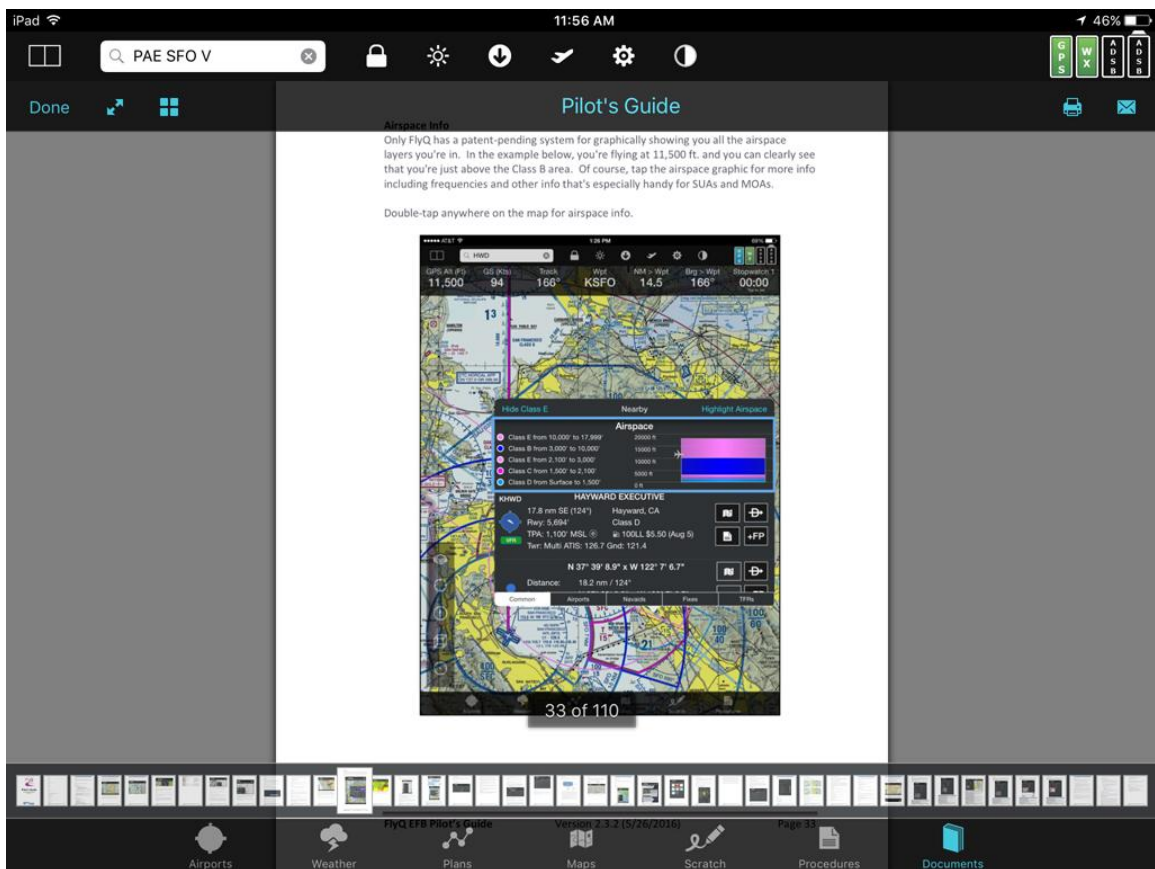
Folders have numbers within their status icons that show the number of documents and folders they contain (including subfolders). For space reasons, this number will show as ... if 20 or more documents are within it.

Folder status icons are based on the worst-case of the documents within it. For example, a folder with five downloaded (green) documents and one document not downloaded (red) will show as red.

FlyQ EFB creates thumbnail images for loaded documents except on older iPads where you see a generic icon based on the document type in some cases (this is not a bug but a limitation of these iPads).

## Viewing a Document

Tap any document icon to show the entire document or image. Large images or PDF files may take a moment to load, especially on older devices.



Swipe left and right to view multi-page PDF files.



A toolbar at the top of the screen will appear for a few seconds then fade-out (unless you have tabbar fading disabled in **Settings**). Tap the document to make it re-appear.



Tap **Done** to close the document and go back to the list.

Tap the **Full Screen** icon (two arrows) to view the document using the whole screen (especially useful when you're using split-screen mode). **Note:** The **Full Screen** option is not available on the iPad 2, iPad 3, or original iPad mini due to hardware limitations.

Tap the **Thumbnails** icon (four squares) to see large previews of all the pages in a PDF and jump directly to any of them. This icon is only shown for PDF files, not for graphics or other types of documents.

On an iPad, tap the name of the document (*Pilot's Guide*, in this case) to rename it. On an iPhone, you can't rename a document from this screen but you can rename it using the **Edit** button when looking at a list of documents.

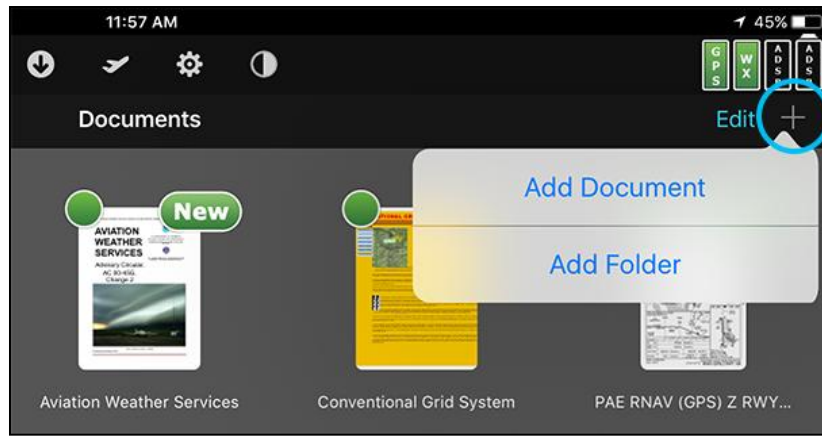
Tap the **Print** icon to print to an [AirPrint compatible printer](#) or use the **Email** (envelope) icon to email the document to yourself so you can print from a PC or Mac. **Note:** The **Print** and **Email** options are not available on the iPad 2, iPad 3, or original iPad mini due to hardware limitations.

PDF documents also have a lower bar that shows small previews of all the pages in the document. Tap an image or slide your finger to jump immediately to another page.



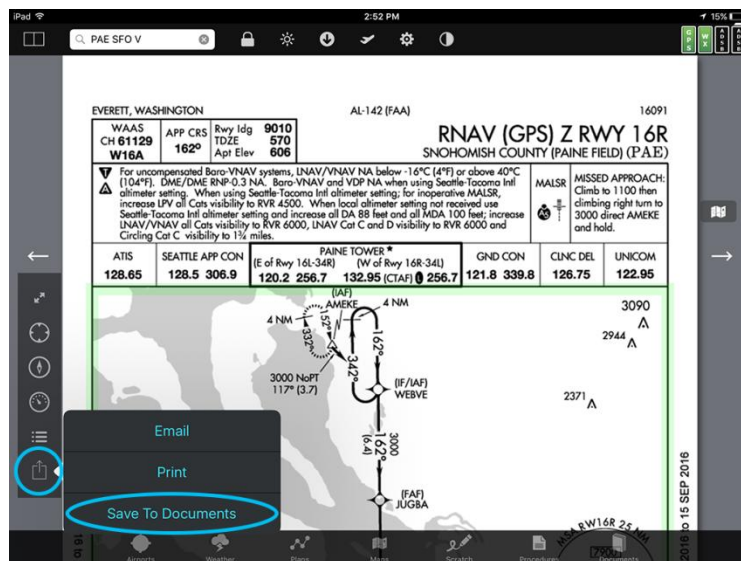
## Adding Documents

The **Documents** feature of FlyQ EFB allows adding documents that we've created or collected for you (the **Library**) and there are several ways to add your own, unique documents and images. As of this writing, about 200 documents are available in the **Library** with more being added all the time.



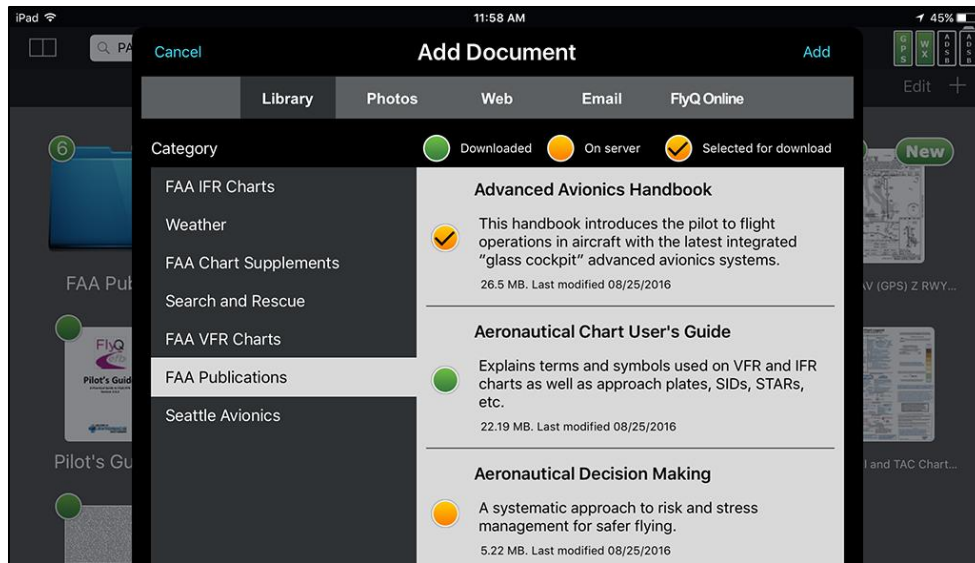
Tap + then **Add Document** to add one or more document. Tap to select as many documents as you like from the **Library** list or use the **Photo, Web, Email, or FlyQ Online** tabs to select documents in other ways. Tap the **Add** button to complete the selection. Documents are added to the folder you're currently in.

Weather briefings, accepted flight plans, procedures, and airport diagrams can be stored as Documents using the **Action** button (icon with an arrow coming out of a box) on the each of those tabs. **Note:** Procedures and Airport Diagrams selected in this way are static pictures only; they are not geo-referenced.



## Library

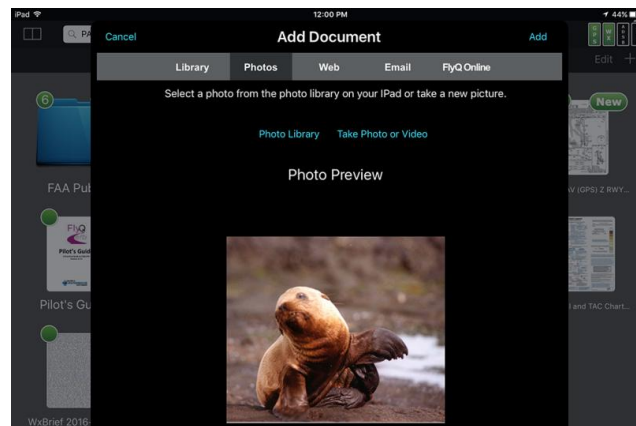
The hundreds of library documents are grouped by category. Select a **Category** on the left then select one or more documents on the right. Documents already on your device have a green icon, those not yet downloaded are orange, and ones selected for download have a checkmark. Each document can only be put into one folder.



Tap the **Add** button at the upper right to add all of the documents with an orange checkmark.

## Photos

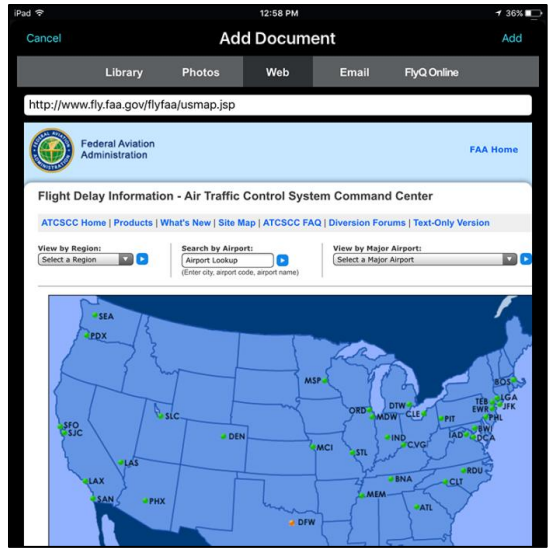
You can copy any image or video already on your device to the **Documents** system or even take a new photo or video. Select either **Photo Library** (existing image or video) or **Take Photo or Video**. Tap the **Add** button in the upper right corner to add the selected image or video.



## Web

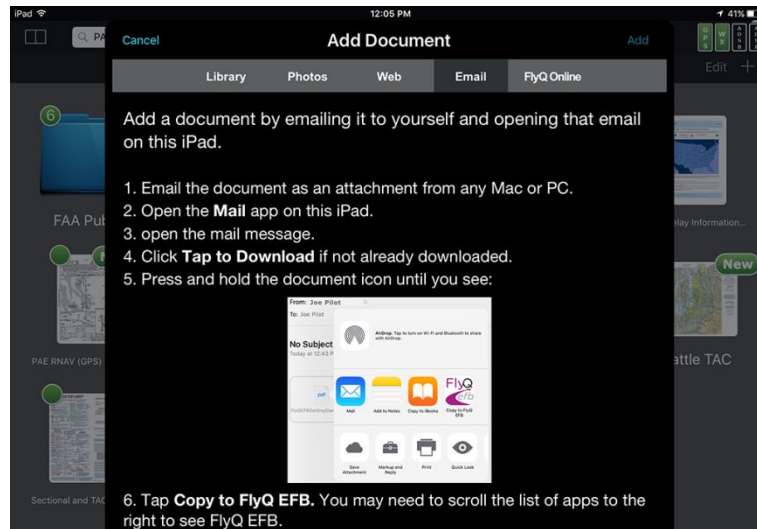
You can browse to any page, image, or document (including Word and Excel documents) by entering its URL. Enter the URL in the top bar and press the blue **Go** button on the pop-up keyboard. The page, image, or document will be displayed in the main window if the URL is valid. Tap the **Add** button in the upper right corner to add the page, image, or document.

**Note:** The system monitors these documents for changes and automatically downloads them to your device if the originals change.



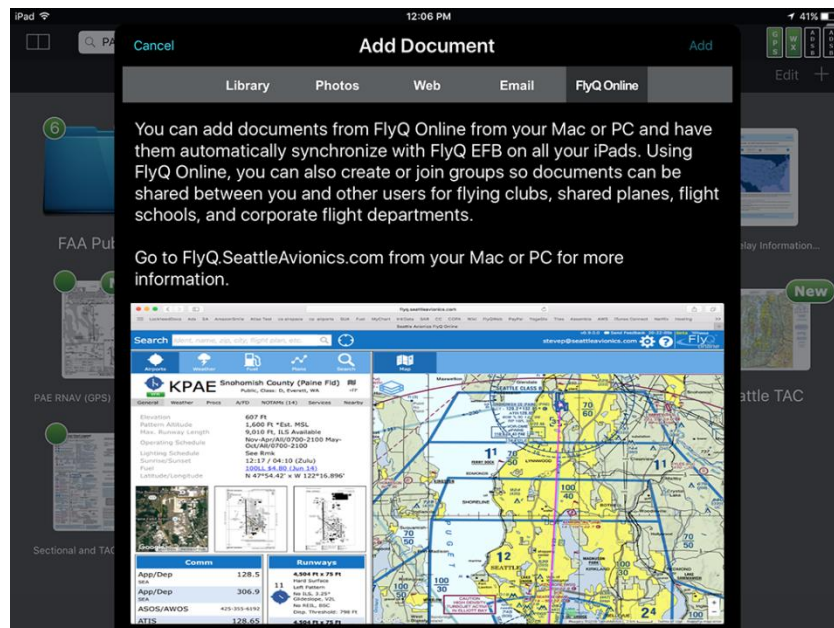
## Email

You add documents by emailing documents from your PC or Mac to yourself.



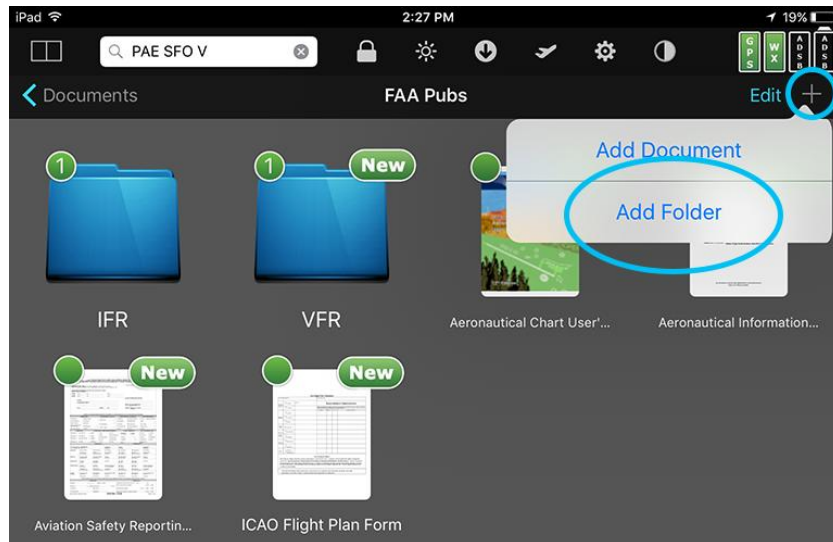
## FlyQ Online

You can add and manage documents from FlyQ Online (<https://flyq.seattleavionics.com>) using your PC or Mac.



## Organizing Documents

Documents can be organized into folder and even subfolders for your convenience. Tap **+** and then **Add Folder** to add a new folder within the current one. Tap a folder to open it. Use the back button at the upper left of a folder to navigate to the previous folder.



## Moving documents and folders

Documents and folders can be moved to another folder two different ways:

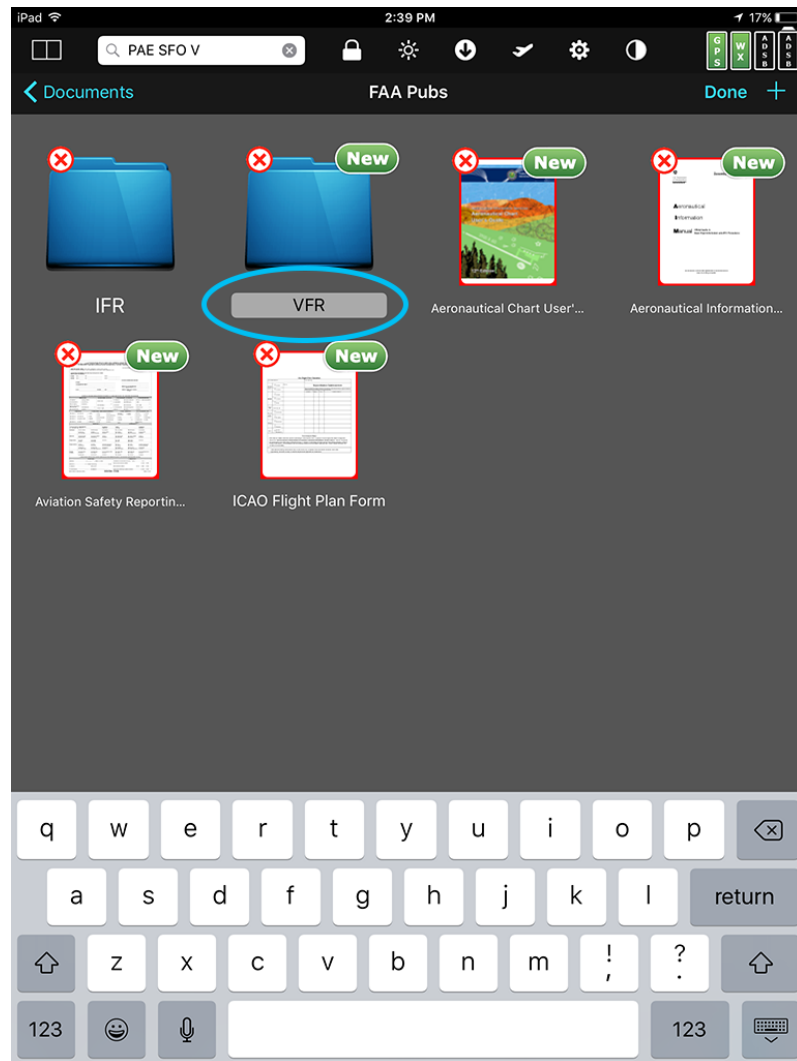
1. Tap the **Edit** button then drag a document or folder into a folder on the screen. Tap **Done** when finished moving items. **Note:** You must tap **Edit** to move a document or folder to guard against inadvertent moves.
2. Tap the **Edit** button then tap the main area (not the **X** in the corner) of a document or folder. Select the new folder for the document or folder. Tap **Done** to end edit mode.



## Renaming documents and folders

Rename a document that is being viewed by tapping its name at the top of the screen (iPad only).

Rename a document or folder by tapping the **Edit** button in the list view then tapping its name in the list. Tap **Done** to end edit mode.



## Deleting documents and folders

Tap the **Edit** button in the list view then tap the **X** in the upper left corner. Tap **Done** to end edit mode.

**Note:** Deleting a folder also deletes all documents and subfolders within it.

**Tip:** Tap off the document and try again if you miss the **X** and tap the main body of the document or folder (which is interpreted as a move to another folder).

## Sharing, printing, and emailing documents

Documents and folders are automatically shared between all devices running FlyQ EFB and (soon) FlyQ Online so long as you login with the same email address. No action is required.

**Note:** Deleting a document or folder from one FlyQ application will also delete the document or folder from other devices running FlyQ when the other devices starts or performs a periodic background synchronization (it's not immediate).

Tap the **printer** icon to print a document being viewed to a [compatible AirPlay wireless printer](#).

Tap the **email** (envelope) icon to email a document to yourself or anyone else. Email must be properly configured on the iPad/iPhone for this to work.

**Tip:** If you don't have an AirPrint compatible printer, email the document to yourself and print from a PC or Mac.

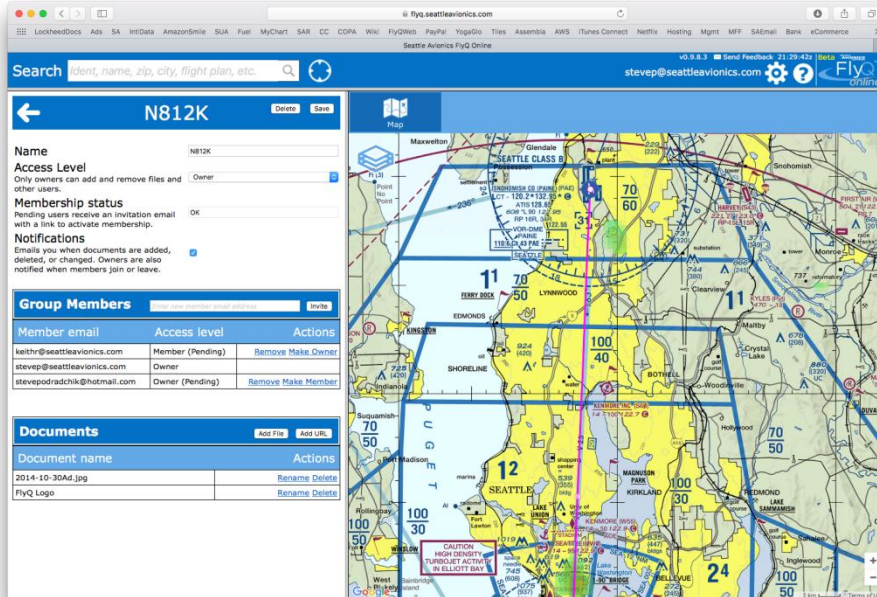
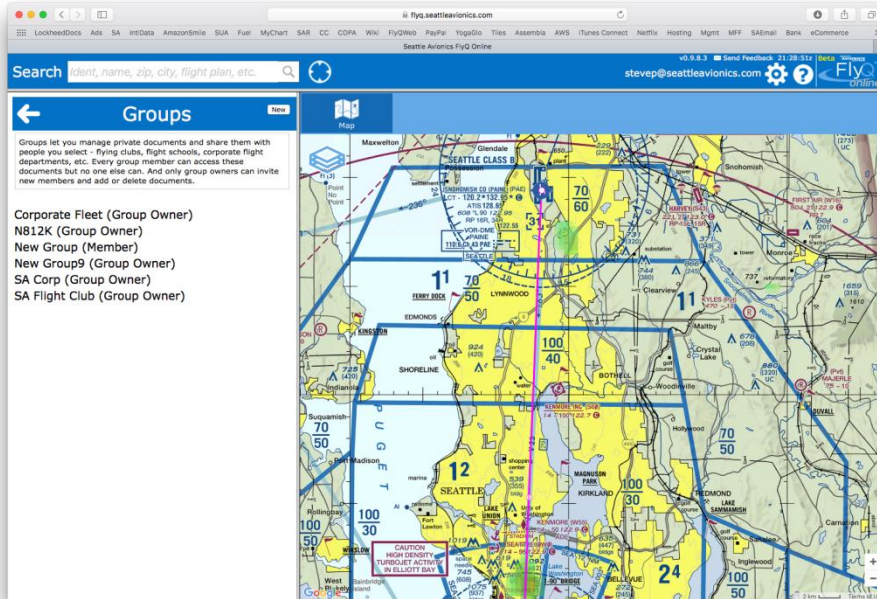


# Creating and Managing Private Groups and Documents

FlyQ Online lets you can create and manage your own groups of pilots and share private documents within the group. The documents in these groups can be added to FlyQ EFB the same as you would add documents in the built-in groups (Seattle Avionics, FAA VFR Charts, FAA IFR Charts, Weather, FAA Publications, etc.). See

<https://flyq.seattleavionics.com> for details (select the **Documents** tab then click **Groups**) or watch the video at <https://www.youtube.com/watch?v=3pTEw24LZpQ&t=6s>

This is especially useful for flying clubs, shared planes, and corporate flight departments.

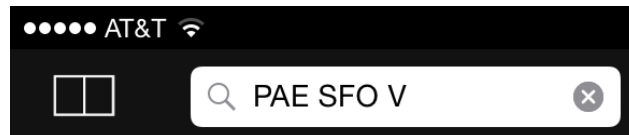


### Creating a flight plan

FlyQ EFB makes it very easy to create an ideal, wind-optimized flight plan any way you prefer. Plans can be created whether you're connected to the Internet or not but some advanced features are only available when online. Flight plans created when you're online are automatically available from any device running a FlyQ application such as FlyQ InSight for the iPhone, FlyQ Pocket for Android, or FlyQ Online from your PC or Mac.

#### Use the Search Box at the Top of the Screen

Enter a series of idents into the top **Search Box** such as *PAE SFO* for a direct plan from Paine Field near Seattle to San Francisco.

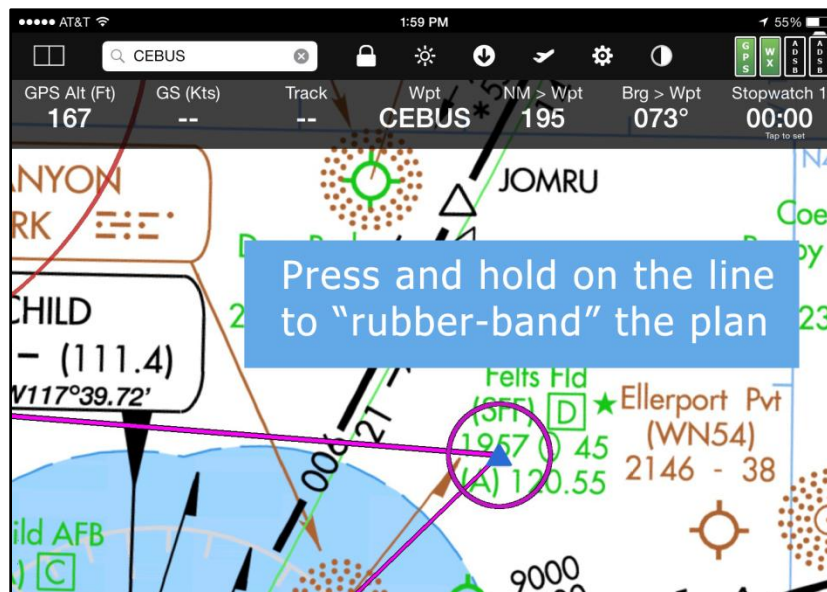


**Tip:** When you're online, use this same method to create a plan via Victor airways by adding the letter *V* to the end (e.g. *PAE SFO V*), via Jet airways by appending a *J*, via GPS-Direct that avoids terrain using *G*, or just by wind-optimizing by using the letter *W*.

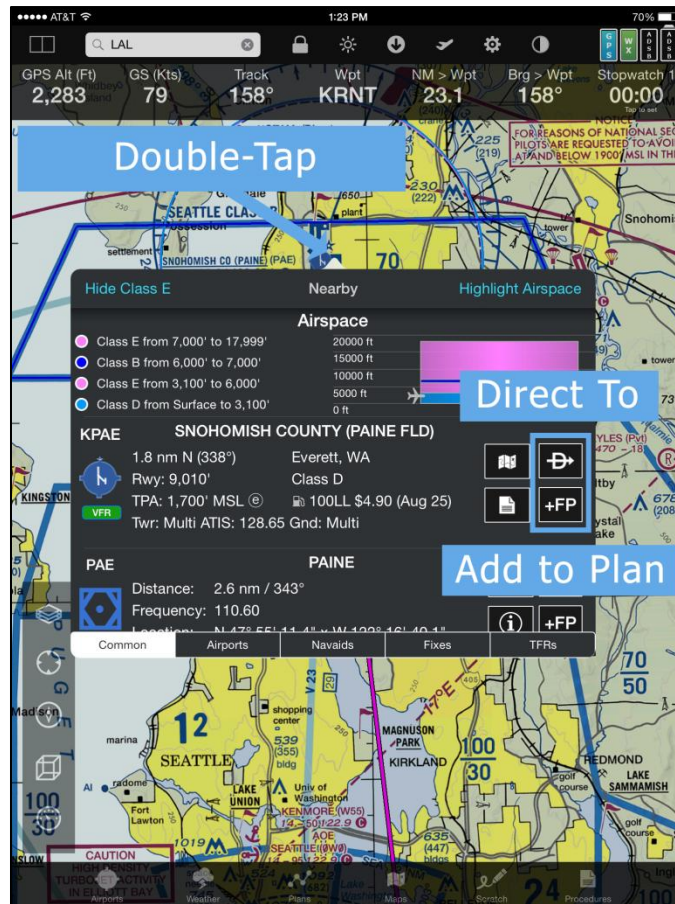
#### Use the Map

##### Rubber-band the Plan

Press and hold to move an existing point or insert one between two existing points ("Rubber-banding"). When you release, FlyQ EFB finds the nearby airports, nav aids, and fixes. Select one of those or tap the exact latitude/longitude where you released the line.



## Direct To and +FP



You can create or modify flight plans directly from the map by double-tapping the map. If the desired point is not already on your flight plan, or you have no flight plan, the **Direct To** button creates a new flight plan from your current location to the selected point. If the selected point is already on the current plan, FlyQ EFB will delete the points before the selected point and fly directly to the point.

Unlike **Direct To**, **+FP** (Add to Plan) does not clear the current plan. Rather, it asks where within the current plan you'd like to insert the new point. Tap the **Add to end** button to append the new point to the plan rather than insert between existing points. If **+FP** is tapped when no flight plan is loaded, the new point becomes the first point in the plan so new additional popup appears.

**Tip:** You can create an entirely new plan using **+FP** even if a flight plan is already loaded by using the **Clear** button on the **Plans/NavLog** tab.

In addition to standard named aviation points, FlyQ EFB accepts entry as latitude/longitude, points relative to a navaid, the intersection of two navaid radials, or a grid cell reference. See the *Waypoint Entry* section later in this document for details. Some quick examples below:

W121.25N47.5 or N47.5W121.25

4730/12115

4730N/12115W

**Note:** You cannot use spaces to separate latitude and longitude because FlyQ EFB interprets spaces as multiple idents.

*SEA/87/35*

This is the point 35 NM along the 87 radial from the SEA VOR. If a fix is used instead of a navaid, the first number is a magnetic bearing rather than a radial.

*SEA104/TCM74*

This is where the 104 radial from SEA meets the 74 radial from TCM. It also happens to be the RADDY fix.

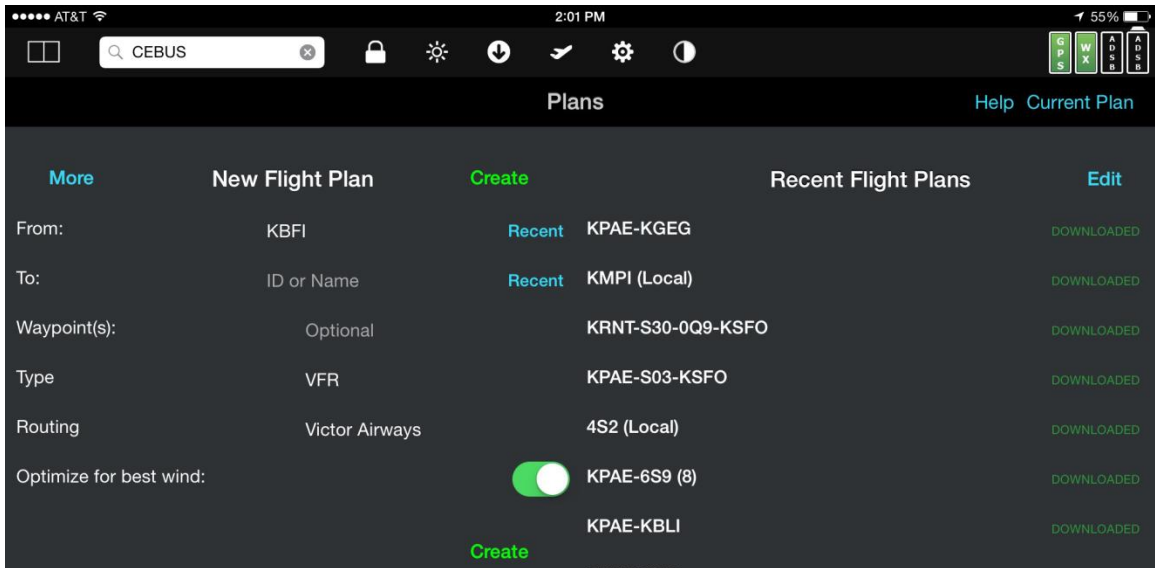
*SEA140A*. The center of the SEA140A CAP grid cell.

## Use the New Plan Window

Select the **Plans** tab then use the **New Flight Plan** area to enter as much or as little info as you like and have FlyQ EFB plan the flight for you. This method has the most options including selecting the routing method, VFR or IFR, whether or not to optimize for best winds, etc.

By default, FlyQ EFB shows you the most common routing parameters (below) and hides less commonly used ones.

There is no Save button because flight plans are automatically saved. They can be renamed or deleted later.



Tap the **More** button for even more options such as selecting which aircraft to fly, min and max altitude ranges, takeoff fuel, and more.

### **Basic Flight Planning**

FlyQ EFB just needs a few inputs to plan your flight.

**Routing:** FlyQ's autorouter can plan wind-optimized flights on airways or using *Terrain Avoidance*. For airways, you can choose between *Victor Airways* (lower than 18,000 ft. MSL) or *Jet Airways* (FL180 or above). Be sure not to plan for *Jet Airways* if the selected aircraft cannot fly above FL180. Planning via *Terrain Avoidance* tells FlyQ to create as direct as possible flight between the **From** and **To** airports but apply rules for terrain avoidance and wind-optimization. You can also use the *Wind/Fuel Only* method to simply plot a direct line between **From** and **To** and wind-optimize it. This differs from *Terrain Avoidance* in that the *Terrain Avoidance* method may also add some intermediary waypoints for long flights. Finally, if you simply want to calculate the time/distance between two points without any wind-optimization, select (*None*) as the routing method.

Select *Search and Rescue* to use one of the nine built-in Search and Rescue patterns. See the *Search and Rescue (CAP)* section later in this document for details.

**From:** Enter the airport ident (either with or without the 'K'), its name or even the city. Use the **Recent** button to select from a list of airports you've recently used. Generally FlyQ defaults to taking off from the home airport you've specified. Change your home airport by tapping the **Settings** button then tapping the **Defaults** button in the **Flight Planning** section.

**To:** Same as above but your landing airport.

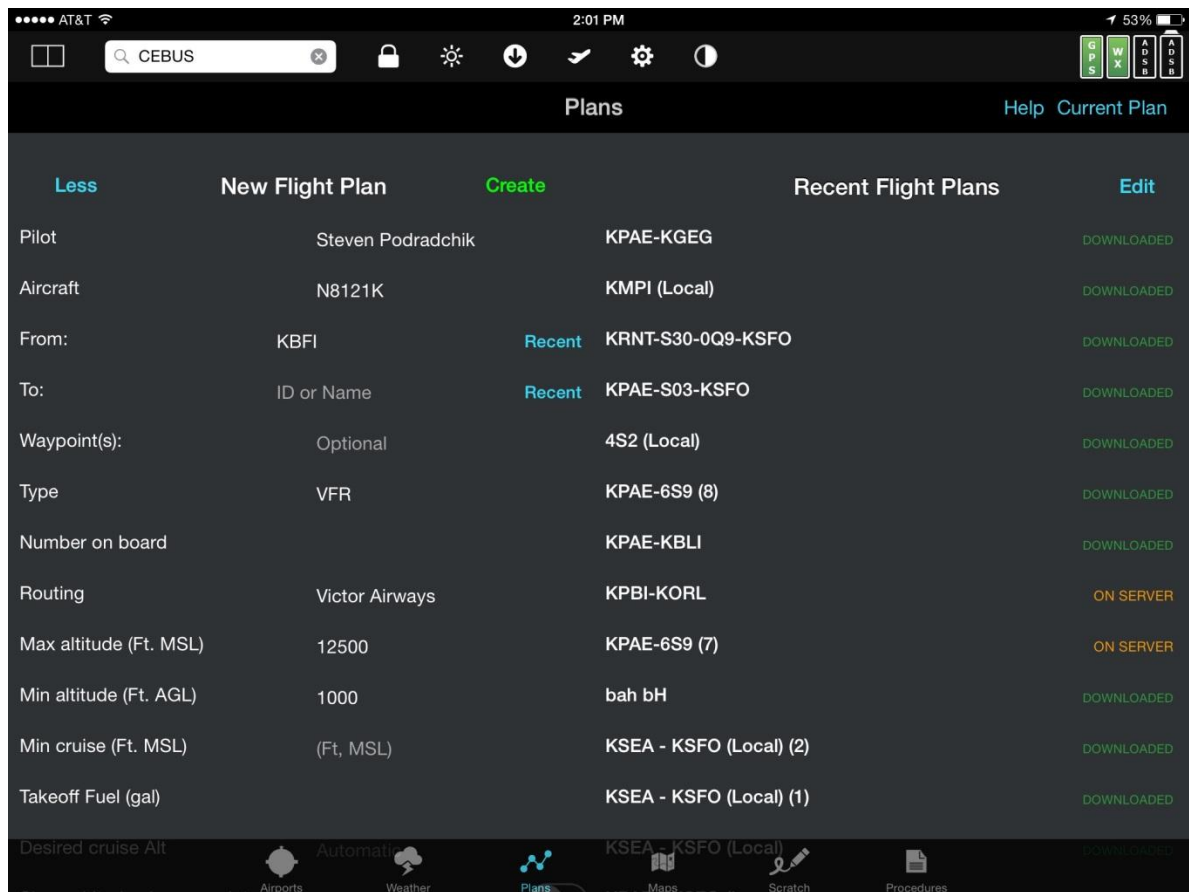
**Takeoff:** Tell the system when you want to takeoff, in the current local time.

**Type:** FlyQ applies different rules for planning VFR and IFR flights so select the type of flight you expect. This is also used when filing the flight plan via Leidos (Lockheed Martin) or DUATS.

**Optimize for best winds:** Normally FlyQ will use the winds-aloft forecast for your flight time to plan the best altitude for the flight. Select *Off* to disable this feature.

## Advanced Flight Planning

Tap the **More** button at the top of the screen to control additional routing parameters.



**Pilot:** FlyQ allows you to create as many different pilots associated with your account as you like. When FlyQ requests a weather briefing or files a flight plan, it uses the credentials associated with the selected pilot.

**Aircraft:** Many pilots fly more than one plane so FlyQ lets you create as many aircraft profiles as you like. In the **Settings** page, tap the **Aircraft** button to add or edit aircraft profiles.

**Route:** Normally FlyQ calculates a flight plan based entirely on your takeoff and landing airports. Use this field to specify any intermediary waypoints, navaids, or airports by ident. Add multiple route entries by separating them with a space (e.g. *LOFAL SEA PDX*). Enter Victor or Jet airway idents (such as *V495*) and FlyQ will plan along the specified airway. Even add SIDs and STARs. **Note:** If you enter an airway, the router will ignore your **Routing** setting and just plan along the specified airway(s).

**Number on Board:** Unless otherwise stated, FlyQ will plan flights with just one person, the pilot, onboard. Enter a different value in this field. Change your default setting from one using the **Defaults** button within the Settings page.

**Max Altitude (MSL):** Normally FlyQ uses wind-optimization to plan the fastest flight possible by potentially going up to the service ceiling of your aircraft. Use this field to enter a specific altitude (MSL) either higher or lower than the service ceiling.

**Min Altitude (AGL):** When using the *Terrain Avoidance* routing method, FlyQ will plan to keep about 1,000 ft. above ground level (AGL) at all times except takeoff and landing. Use this setting to choose an AGL setting either higher or lower. Use the **Defaults** button within **Settings** to change your default AGL clearance.

**Min Cruise (MSL):** For some aircraft, typically jets or very high-performance pistons, it's economically impractical to fly below a certain altitude regardless of the effects of winds. If you fly such a plane, enter an appropriate value here or use the **Defaults** button in **Settings** to specify your preference.

**Takeoff fuel:** Unless otherwise stated here, FlyQ will assume your plane takes off with a full tank of fuel. Enter a higher or lower value as desired. Note that the units used here depend on whether your plane uses AvGas (100LL) or JetA. When using JetA, the fuel value should be entered as pounds (lbs.), otherwise the system uses gallons.

**Show altitude change points:** FlyQ can show you a flight plan that includes points for when you reach the beginning of your cruise altitude (also known as *TOC* or *Top Of Climb*) and when you should begin your descent (*TOD* or *Top of Descent*). Normally this is suppressed but you can turn this feature on here.

### **Routing Problems**

When FlyQ says that it cannot compute the flight plan, it generally means that some of your input parameters conflict. For example, you can't plan a flight on *Victor Airways* through the Rocky Mountains with a **Max Altitude** of 7,000 ft. When you see this error message, please use the **More** button to set or review your inputs.



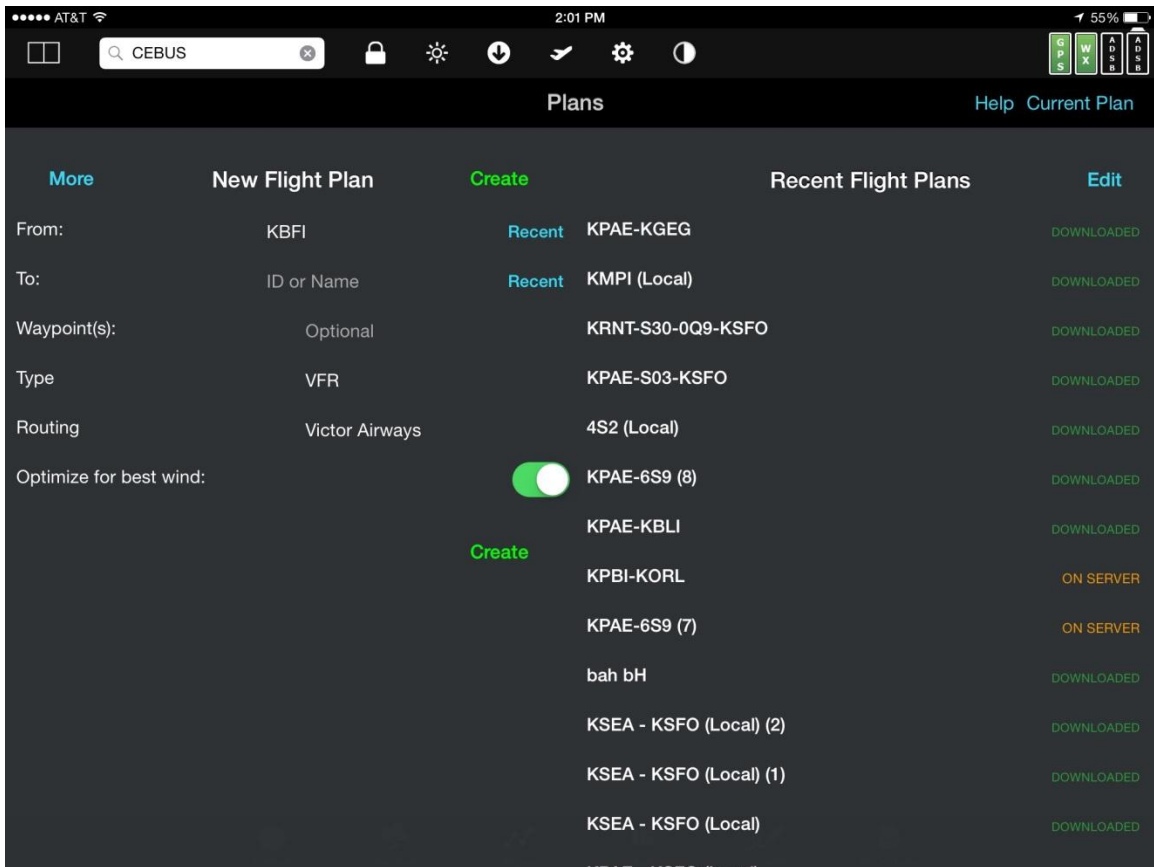
## Loading a Previously Created Plan

The **Recent Flight Plans** section lists the flight plans you've recently used. Some may be green (Downloaded) and some may be orange (On Server). Green plans have been loaded to your device and may be used during flight when no Internet connection is available. Orange plans were created on some other device and have not been downloaded to this device so must be downloaded before used in flight.

The **Edit** button lets you selectively delete flight plans. Once tapped, **Edit** becomes **Done**. When you're done deleting plans, tap **Done**.

Tap a plan to load it, using its original takeoff date/time, into the **NavLog**. Once in the **NavLog**, you can edit the flight plan's points, its takeoff date/time and more.

If a flight plan is already loaded, the **Current Plan** button will be available. Tapping it opens the NavLog to that plan.



**Note:** You can send flight plans to the Dynon SkyView, AFS, or Aspen systems via a Wi-Fi connection. Flight plans can also be sent from SkyView or AFS to FlyQ EFB. See the *External Devices and Applications* section later in this document for details.

# The NavLog

The screenshot shows the NavLog app interface. At the top, there's a search bar for airports and a flight plan name: **KPAE-7S5-KRBG-KWLW-KSFO**. Below this, flight summary information is displayed: Time: Feb 14, 2017, 3:30 PM; Distance: 643.7 nm; Duration: 10:04; Fuel Used: 93.8 gal; Fuel Rem: -1.0 gal; Pilot: Steve Podradchik; Type: VFR; Plane: N8121K.

The main section is titled "Nav Log" and contains a table with the following columns: Name, Alt. (ft), ETE, MHdg, TCrs, MagVar, Wind Dir, Speed, Distance, GS, TAS, Fuel Added, and Fuel Us. The route is: KPAE SEA MALAY BTG 7S5 EUG CURTI KRBG MOURN BROKN S03 ZUNAS FJS RBL ZOKOP KWLW MXW WUSHU SGD KSFO.

	Name	Alt. (ft)	ETE	MHdg	TCrs	MagVar	Wind Dir, Speed	Distance	GS	TAS	Fuel Added	Fuel Us
	KPAE	11,500'	00:30:32	176°	182°	-16°	208° 36 kts	28.3 nm	61	95	48.0 gal	5.7 ga
	SEA	10,500'	01:05:09	184°	197°	-16°	205° 36 kts	63.5 nm	59	95	0.0 gal	9.6 ga
	MALAY	11,500'	00:36:25	166°	170°	-16°	208° 31 kts	41.1 nm	68	95	0.0 gal	5.6 ga
	BTG	10,500'	00:59:20	190°	206°	-15°	205° 32 kts	58.7 nm	63	95	0.0 gal	7.2 ga
	7S5	11,500'	00:56:16	180°	181°	-15°	210° 47 kts	44.8 nm	51	95	17.6 gal	9.6 ga
	EUG	11,500'	00:29:01	174°	172°	-15°	210° 46 kts	26 nm	54	95	0.0 gal	4.4 ga

The top section of the NavLog shows the basic flight summary info – flight plan name, takeoff date/time, Pilot, Distance, Duration, Fuel, etc. The fields in light blue can be changed by tapping on them, similar to a Web page.

The NavLog shows the data required for flying between each point in the plan. The **Alt** column means the final cruise altitude from the point on the current line to the next. In the example above, it means ascending from ground level (not shown) to 11,500 ft. MSL between takeoff at *KPAE* and flying over the *SEA* VOR. **MHdg** is the magnetic heading you should take to properly adjust for the effect of winds aloft.

Tap any row in the NavLog to see more information about that point. For example, tapping anywhere in the *KPAE* row shows detailed information about the *KPAE* airport.

The NavLog contains more columns than can be shown on the page so swipe it left and right to see more. Swipe up/down to see more rows (if applicable).

The **Map** icon next to the plan name shows the entire flight plan on the map at an appropriate zoom level.

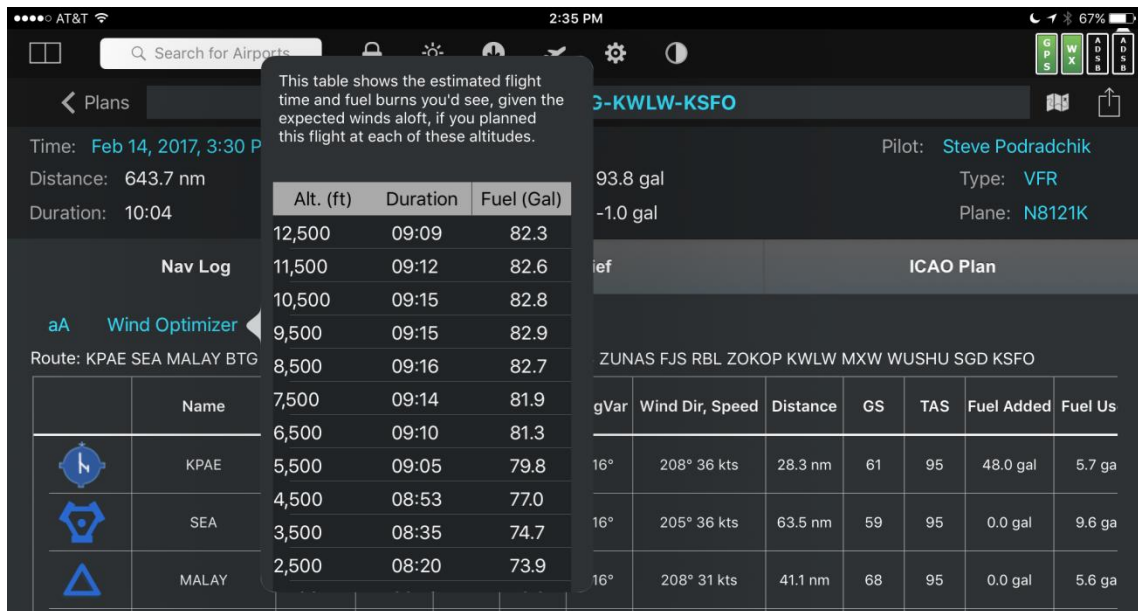
The **Action** button (box with the arrow coming out the top), allows you to print or email the flight plan. If you have a Dynon SkyView, AFS AF-5000, or Aspen Connected Panel, you can also send the flight plan to your in-panel system. See the *External Devices and Applications* section later in this document for details.

Tap the **Back Arrow** icon at the top to go back to the New Flight Plan / Recent Flight Plans page.

The button bar just above the NavLog itself controls the display and editing of the NavLog:

**Font Size** button (aA icon): Toggles the font size of the NavLog between normal (as shown above) to a font that's about 50% larger.

**Wind Optimizer:** Often a flight plan is generated by FlyQ EFB taking Winds Aloft into account to get you to your destination as fast as possible. However, there may be other considerations as well beyond precise times so the **Wind Optimizer** button shows you a table of the tradeoffs in terms of time and fuel of flying at different altitudes. Tapping on a row in the table changes all altitudes in the flight plan to the selected altitude, as adjusted for cardinal altitude rules.



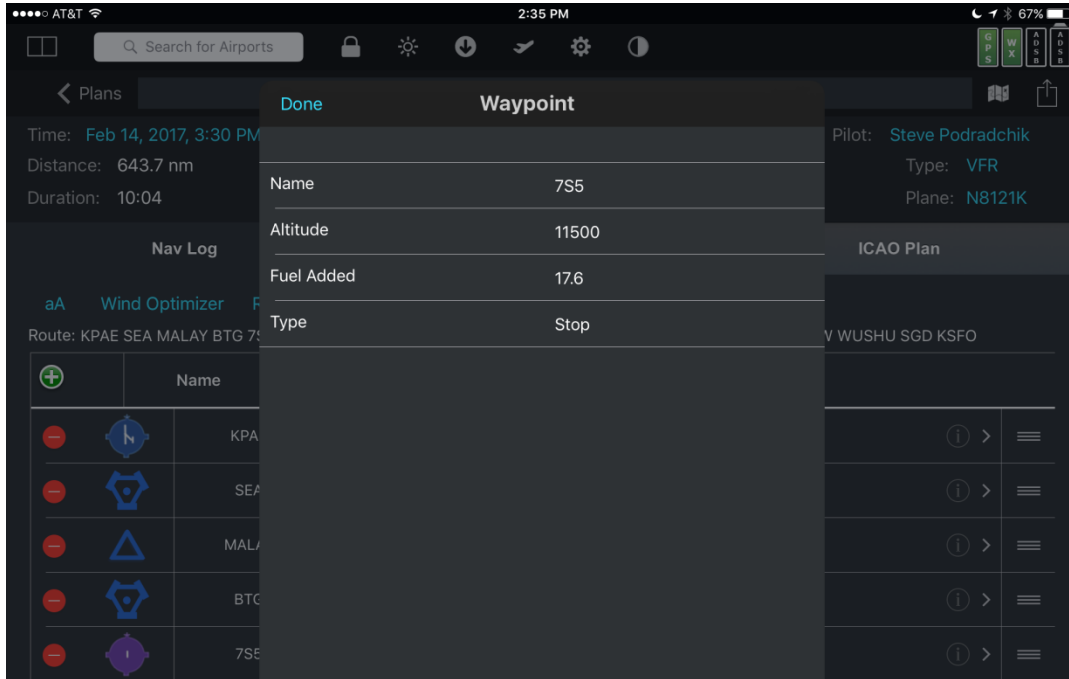
**Reverse:** Tap to reverse the flight plan. Altitudes will be adjusted for cardinal direction rules but the plan will be not be wind optimized for the reverse direction. The **Wind Optimizer** button can re-optimize the plan.

**Clear:** Clear unloads the current plan from the system (removes the **Flight Plan** layer from the map, clears the **Gauges**, etc.) but does not delete it from the iPad/iPhone so it may be loaded again.

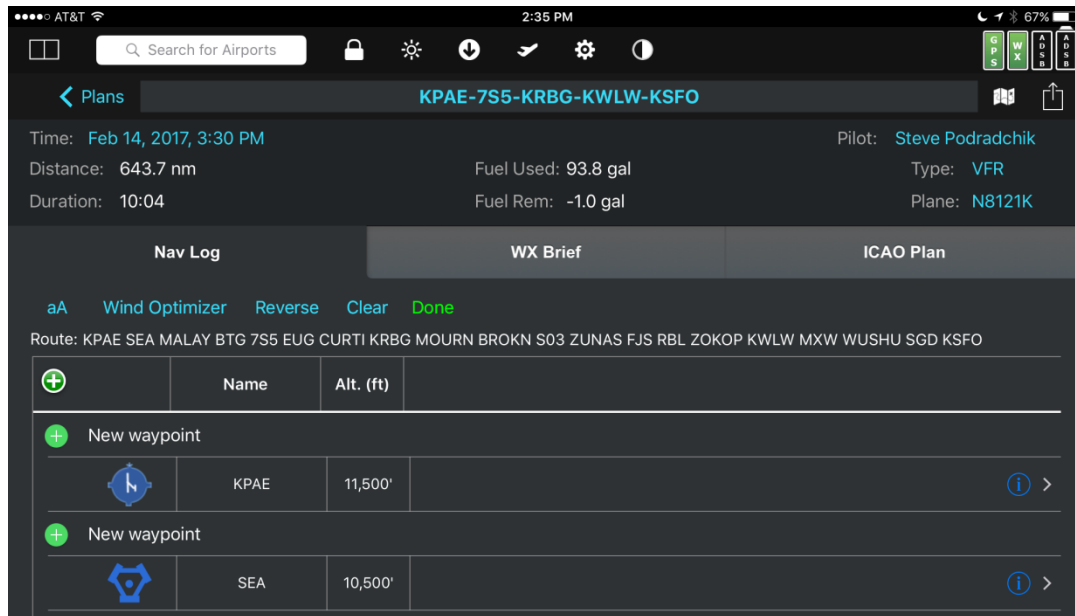
**Edit:** A flight plan may be edited in several ways including rubber-banding the flight plan line on the map, using the **Direct To** and **+FP** buttons available in several places or by simply entering a new flight plan in the top **Search Box**. Tapping the **Edit** button here is not necessary for any of those edits. Rather, **Edit** puts the NavLog into a mode where

tapping a row lets you modify the altitude, fuel, or type of waypoint for that entry rather than show detailed information about it. **Edit** turns into **Done** when it's tapped.

In the example below, the 7S5 entry was tapped to turn it into a fuel stop by changing the **Type** to *Stop* (that is, fuel stop as opposed to final landing). The **Fuel Added** field can be edited for any *Airport* but not for *Nav aids* or *Fixes*. If the **Type** is not already *Stop*, FlyQ EFB automatically changes it to a *Stop*.



**Edit** also adds a green + (New) button to the NavLog. Tapping + puts a “placeholder” row between each of the rows of the NavLog. Tap the green + above any row to add a point between the two adjacent points. Note that you can generally do this more easily by rubber-banding the flight plan line or using the **+FP** button after double-tapping the map over the desired new point.



When you're down with your edits, tap **Done** to automatically save your changes.

## Weather Briefing

A Leidos (Lockheed Martin) or DUATS weather briefing is automatically generated when a flight plan is created or edited. Switch from the **NavLog** sub tab to the **Wx Brief** tab to see it.

**WxBrief** has a **Refresh** button to generate a new weather briefing in case the plan was last loaded or edited some time ago.

## File a Flight Plan

Select the **ICAO Plan** sub tab to view, edit, and file the flight plan.

Nav Log	WX Brief	ICAO Plan
<b>File</b>		
7. Aircraft Tail #	N8121K	
8a. Flight Rules	VFR	
8b. Type of Flight	General Aviation	
9a. Number of Aircraft	1	
9b. Type of Aircraft	P28A	
9c. Wake Turbulence	Light	
10. Equipment	ODGY/CU2	
13a. Departure Aerodrome	KPAE	
13b. Proposed Departure (PST)	3:30 PM	
15a. Cruising Speed	95	
15b. Cruising Level. (ft / 100)	115	
15c. Route of Flight	SEA V23 BTG 7S5 EUG V23 CURTI KRBG MOU...	
16a. Destination Aerodrome	KSFO, San Francisco Intl	
16b. ETE Hours	09	
16c. ETE Minutes	33	
16d. Alternate Airports		

The **ICAO Plan** shows the same data entry fields, in the same order, as the standard ICAO flight plan form so the first block is number 7. The fields in white (e.g. **Type of Flight, Proposed Departure, Cruising Speed, Route of Flight**, etc.) may be edited before submission to the FAA. The other fields may only be edited indirectly by changing the **Plane** or **Type** in the Summary section above or creating a new plan.

Tap **File** to submit the plan to your choice of Leidos (Lockheed Martin) Flight Services or DUATS when all the fields are as you like. Leidos (Lockheed Martin) or DUATS will reply with a confirmation if the plan was accepted or an error message if it cannot be filed. The most common reason for failure is that the proposed takeoff is either in the past or less than 30 minutes from the current time. Use the **Time** field in the **Summary** section to alter the takeoff time if required. Accepted plans may be printed or emailed.

The selection of Leidos (Lockheed Martin) versus DUATS is part of the profile for each pilot. Pilot profiles are accessed from the **Settings** page.

## ADS-B

ADS-B is an FAA acronym for *Automatic Dependent Surveillance-Broadcast*. The FAA created ADS-B to provide more accurate traffic information to ATC so they can manage the national airspace more efficiently (that is, land more airliners). Thus, all aircraft operating in areas with high traffic (e.g. the 30 NM Mode C veil around Class B airspace) must transmit their location to ATC before January 1, 2020. When planes do that, ground-stations respond by broadcasting all the traffic targets near that plane. Rudimentary weather is also transmitted to all aircraft near these ground stations regardless of whether or not a plane sends its location to the station.

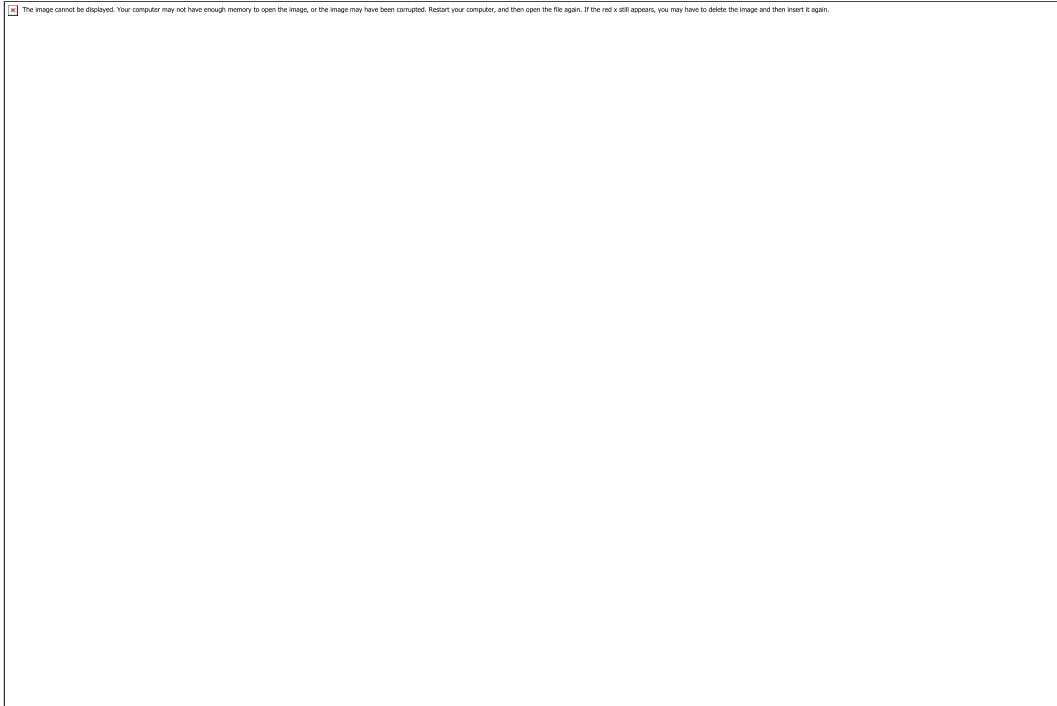


Seattle Avionics is committed to open standards so FlyQ EFB supports a wide variety of different ADS-B systems from many manufactures so if newer/better technology comes along, you're not locked into any single device. As of this writing, FlyQ EFB supports the Merlin, Stratux, Clarity, Dual XGS170/ 190, SkyRadar receivers, iLevel receivers, Pathfinder, and systems from Bendix-King, L-3, FreeFlight Systems, and NavWorx. See our [ADS-B Primer](#) for more information about each receiver and for detailed explanations of how weather and traffic work, including the very significant limitations to traffic information.

All ADS-B receivers receive basic weather and traffic information from ground-based stations once you hit about 3,000 ft. AGL. There are two different radio frequencies used for ADS-B: 978 MHz and 1090 Mhz. All ADS-B receivers receive weather and traffic data from nearby ground stations over 978. Some units also receive air-to-air traffic transmission over 1090 to give you a much fuller picture of traffic. Weather is not transmitted over 1090.

## ADS-B Traffic Limitations

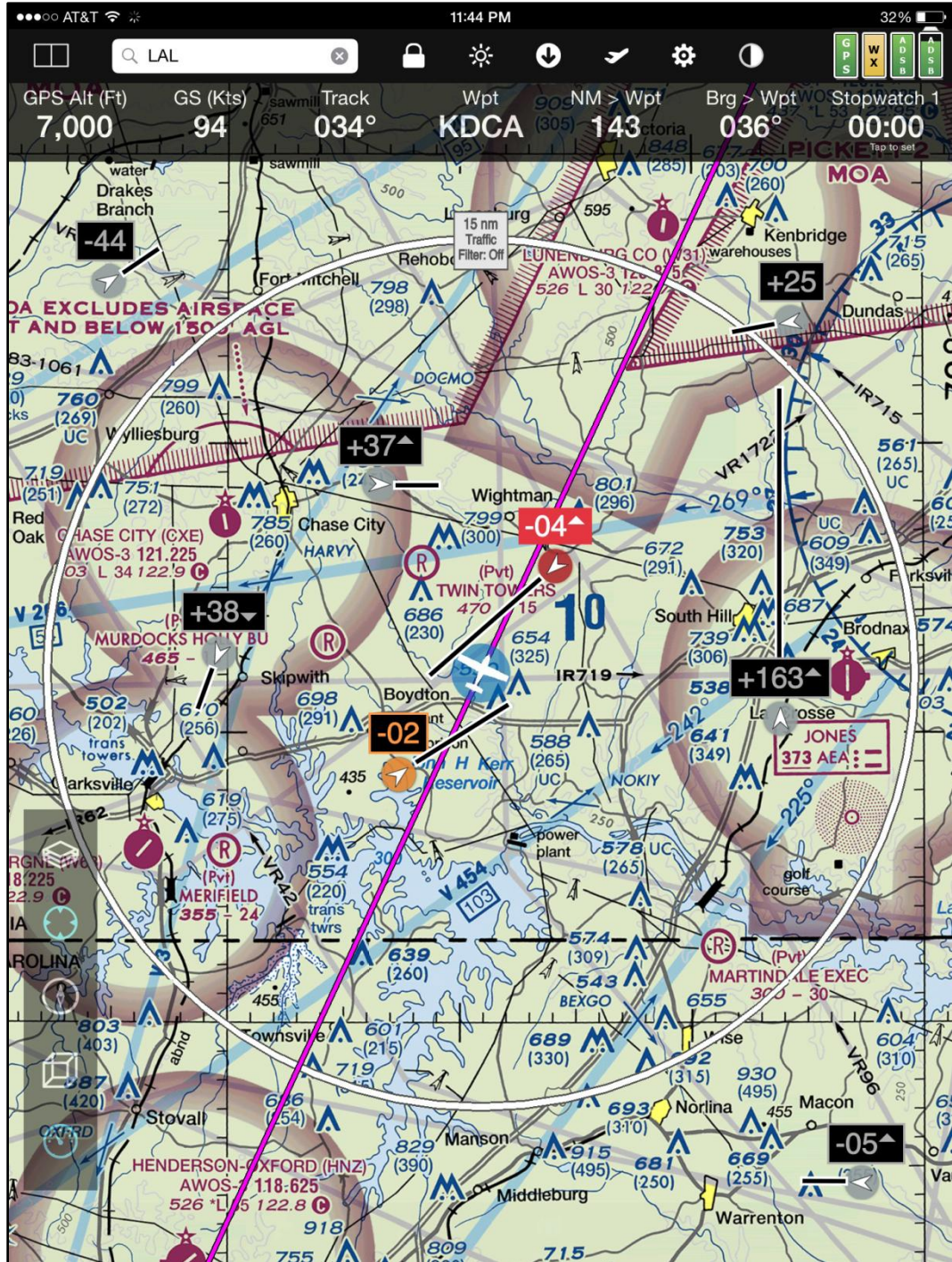
Although the FAA created ADS-B to help them with traffic management, the way FAA ground stations broadcast traffic is highly problematic and pilots must be aware of the very significant limitations. Specifically:



1. If your plane is not ADS-B Out equipped (that is, has a transmitter as well as a portable receiver), you will only get 978 ground-based traffic if another plane nearby has an ADS-B transmitter. Moreover, the traffic you see is traffic near him, not you. "Near" is defined as a hockey-puck shaped region centered on the transmitting plane with a radius of 15 NM and height of +/- 3500 ft. Thus, there may well be traffic near you that you never see on the ADS-B feed.
2. If you see no traffic on your iPad or iPhone, it means either there really is no traffic or there may be traffic but no one in the area that is ADS-B Out (transmitter) equipped. Worse, you cannot tell the difference!
3. A "dual channel" ADS-B receiver such as the Merlin, Stratux, Dual 190, or iLevel units provides substantially better traffic information because it also receives traffic broadcast air-to-air from airliners passing overhead.
4. To get the best possible traffic information, equip your plane with ADS-B Out transmitter or a new 2020-compliant transponder in addition to the portable ADS-B receiver.



## Traffic in FlyQ EFB



**Important!** ADS-B traffic is a map layer in FlyQ EFB, like any other map layer such as Radar, METARs, Obstacles, etc. By default, *Traffic* is **not on**. Therefore, you won't see any traffic until you click the **Layers** button (stack of papers icon) on the map and select *Traffic*.

Subject to the limitations noted above, FlyQ EFB shows traffic sent by ADS-B receivers using many features to help keep you safe:

## Relative Altitude and Climbing or Descending

In addition to icons, a text box above the icon tells you the altitude of the target relative to you. A + means the target is above you; a - means it's below you. The number shown is the altitude differential in hundreds of feet. Thus, a target marked as +30 is 3,000 ft. above you. After the number, there may be an arrow at the top or the bottom of the text box. This indicates if the target is climbing (up arrow) or descending (down arrow).

**Note:** The relative altitude may be a little off because FlyQ compares your *GPS* altitude to the *pressure* altitude encoded in the ADS-B feed.

## Two-Minute Line

For targets that are moving, FlyQ shows a line that indicates where the target will be in two minutes at its current speed and direction. Thus, longer lines indicate faster aircraft.

## Threat-level color coding

Similar to many other places in the app, FlyQ uses three colors to indicate threat-level: A white target with a light gray background is generally no factor. A white plane with an orange background is within 5 NM and +/- 3000 ft. of you so should be considered a potential threat. A white plane with a red background and a red text box means imminent danger with a threat within 1 NM and +/- 1,000 ft.

**Tip:** Due to the way ADS-B works, you may see a shadow of your plane as a red-level threat, especially if your plane is ADS-B Out equipped. In that case, you can tell FlyQ EFB to hide your plane by entering its tail number in the **Ignore tail number** field in **Settings**. This has no effect unless your aircraft has ADS-B Out because only an ADS-B Out data stream transmits your tail number to the ground station.

## 15 NM Ring

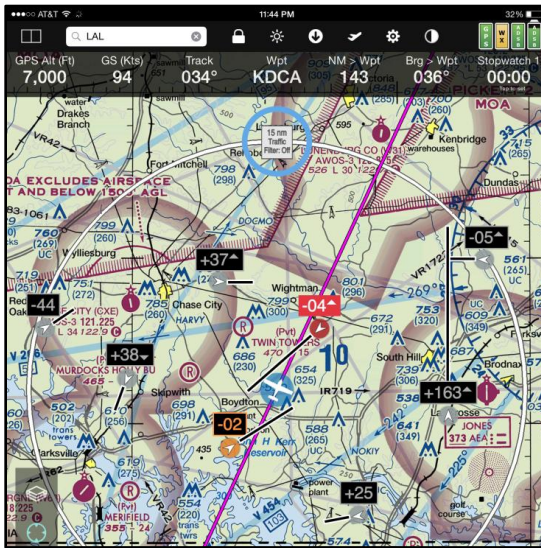
Turning on the **Traffic** layer also turns on a 15 NM ring centered on your position to help you judge distance. You can disable this in the **Settings** portion of the app.

## Traffic Filter

In high-traffic areas, you may see so many targets, often very far above you, that it's difficult to visually pick-out the ones you really care about. Thus, we provided a filter system that removes any traffic that is no-factor. This is defined the same way the FAA determines nearby traffic: When On, FlyQ only shows traffic within a 15 NM radius of your position, +/- 3,500 ft. You can toggle this filter on and off by tapping the gray text box on the 15 NM ring that says **15 NM, Traffic Filter: On/Off**.

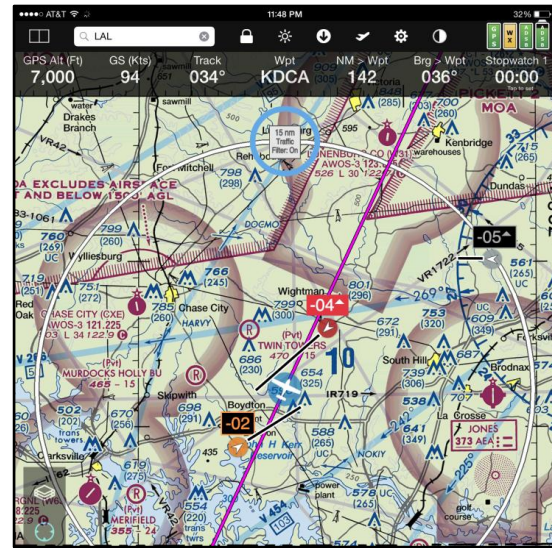
### Traffic Filter Off

All ADS-B traffic



### Traffic Filter On

Only traffic within a 15 NM radius, +/- 3,500 ft.



**Note:** Even when the traffic filter is off, FlyQ EFB hides traffic more than 75 NM away to reduce screen clutter and improve system performance and memory utilization.

## Supported ADS-B Devices

Product	Single/Dual Channel	AHRS	Portable or Installed	Meets 2020 Mandate	Battery	Connection
Clarity SV	Dual	Yes	Portable	No	Yes	Wi-Fi
Merlin	Dual	Yes	Portable	No	Yes	Wi-Fi
Dual XGPS 170	Single	No	Portable	No	Yes	Bluetooth
Dual XGPS 190	Dual	Yes	Portable	No	Yes	Bluetooth
Stratux	Single/Dual	Yes/No	Portable	No	Yes/No	Wi-Fi
iLevel AW or SW	Single	Yes	Portable	No	Yes	Wi-Fi
iLevel 2/3 AW or SW	Dual	Yes	Portable	No	Yes	Wi-Fi
Pathfinder	Single	No	Portable	No	Yes	Wi-Fi
SkyRadar DX	Dual	Yes	Portable	No	No	Wi-Fi
SkyRadar (other)	Single	No	Portable	No	No	Wi-Fi
FreeFlight RANGR	Single	No	Installed	Depends	N/A	Wi-Fi
L-3 Lynx	Single/Dual	No	Installed	Yes	N/A	Wi-Fi
NavWorx ADS600	Single	No	Installed	Depends	N/A	Wi-Fi

The Stratus 1S and 2S are not supported at this time because AFS (Appareo, ForeFlight, Sporty's) added code to the firmware in those units that appears to serve no purpose other than make it very difficult for FlyQ EFB to connect to it. Similarly, the Stratus 1 and Stratus 2 are supported by FlyQ EFB but only if they have not loaded with firmware version 2.x. Please contact Sporty's or Appareo if you would like to see them remove the blocking code and allow you to use the device you purchased with your choice of app.

## Connecting an ADS-B System

For any Wi-Fi based ADS-B system (all systems except the Dual XGPS 170):

- Turn on your ADS-B system.
- Let it warm up for about a minute.
- Go to the **Settings** app on the iPad or iPhone.
- Turn **Airplane mode ON** to disable other wireless services that might interfere with FlyQ EFB.
- Turn only **Wi-Fi ON**. Leave all other wireless systems off.
- Connect to the Wi-Fi Network that has your device's name or manufacturer in it unless otherwise instructed by your ADS-B manufacturer. **Note:** The iPad/iPhone may show a small **(i)** symbol with the words **Security Recommendation** next to the connection. That is **not an error or a problem**; it's the iPad/iPhone simply telling you that the ADS-B Wi-Fi connects only to the device, not to the Internet.
- You should see FlyQ EFB notify you of a connection within one minute.
- If you turn the ADS-B off, the green **ADS-B** status light should turn red within about 60 seconds.

For the Dual XGPS-170 or 190:

- Turn the XGPS-170/190 to *ADS-B*
- Let it warm up for about a minute.
- Go to the **Settings** app on the iPad or iPhone.
- Turn **Airplane mode ON**. This disables all wireless services that might interfere with FlyQ EFB.
- Turn only **Bluetooth ON**. Leave all other wireless systems off.
- If the receiver has not yet been paired with your iPad or iPhone, do so now.
- You should see FlyQ EFB notify you of a connection within one minute.

**Tip:** Tap the **Layers** button on the map and be sure the **Traffic** map layer on. The **Traffic** layer is not automatically turned on when an ADS-B receiver is connected.

## Weather

Weather is crucial to flying and FlyQ EFB has a wealth of weather information that make flying easier and safer.

### ADS-B or Internet

While on the ground, FlyQ uses weather downloaded from the Internet and stores this on the iPad/iPhone for use while flying. Add one of several supported ADS-B receivers for weather updates while flying. Learn more about ADS-B receivers from our [ADS-B Primer](#).

**Note:** Remember that many ADS-B receivers, including our Merlin, are dual-channel receivers. The 1090 band receives traffic only, no weather. Weather and traffic are both broadcast on the 978 band sent from ground stations. Therefore, if you're at your desk at home or flying too far from a ground station (or below 3,000 ft. AGL), you may see traffic from 1090 but no weather as you're not receiving any 978 transmissions.

Weather can be accessed in a number of ways:

### On the Map

FlyQ EFB can display any combination of NexRad, Satellite, METAR/TAF, AIRMETs/SIGMETs, and Winds Aloft over any 2D map. Tap the **Layers** button then select as many or as few weather layers as you like.



When the **METAR/TAF** layer is on, single-tap over a METAR/TAF circle and FlyQ pop-ups a quick box with the nearest METAR and TAF information. Tap the **More** button for additional weather information including Winds Aloft for that airport.



The Winds Aloft arrows point in the direction that the wind is moving not in the direction from which it comes. The number at the end is the expected winds aloft speed, in Kts, at your current GPS altitude. Thus, this number generally changes as you climb. Tap the large **Weather** tab at the bottom of the screen to see winds at other altitudes. If you're not flying, the Winds Aloft layer assumes the winds at your default cruise altitude. This is 7,000 ft. unless you change it.

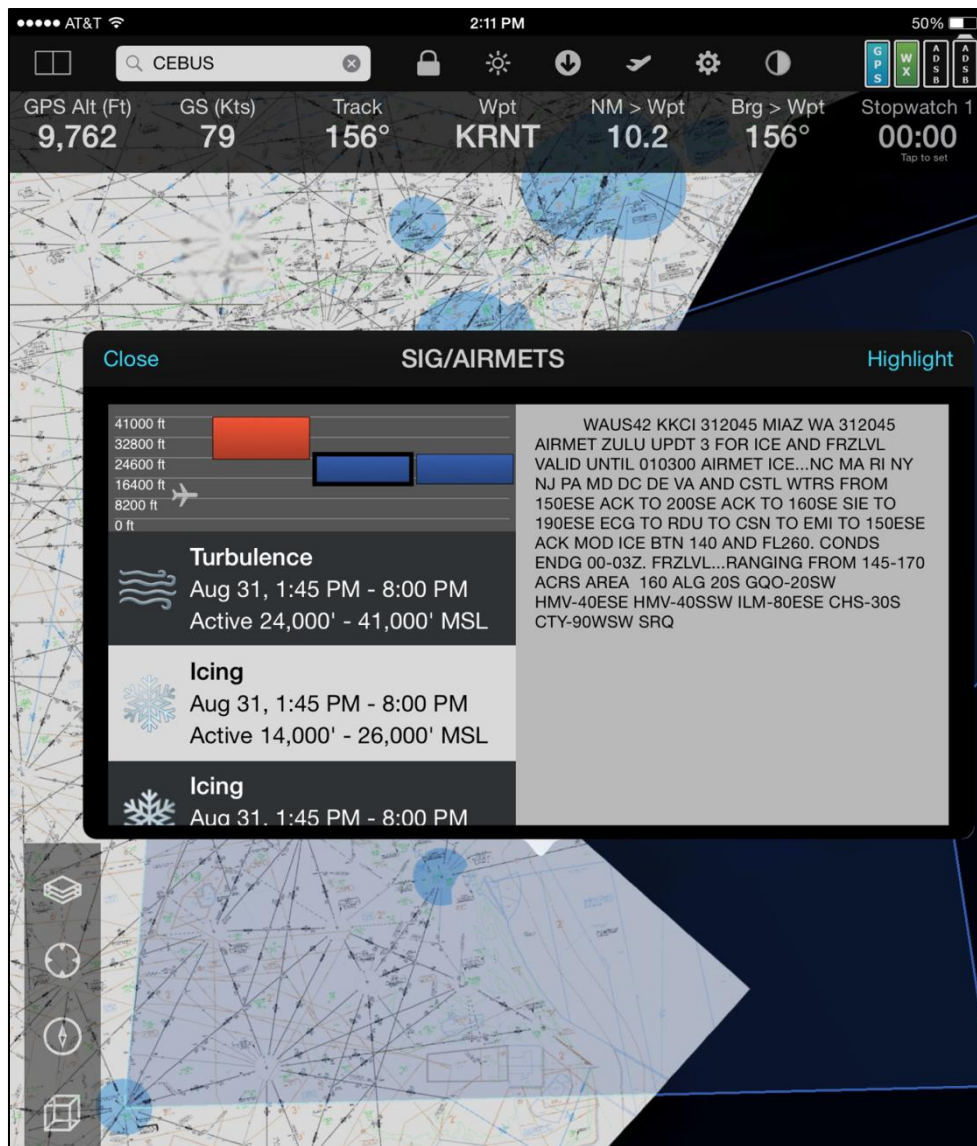
The METAR/TAF circles use three colors to depict the actual or expected weather conditions: green is VFR, yellow is MVFR, and red is IFR, LIFR, or VLIFR. The colors are determined by either METARs or TAFs, depending on the time. If the airport has a METAR report that is still valid (they last one hour), the color is based on a METAR. If you're outside the time range of METARs, FlyQ EFB automatically switches to using TAFs.

**Note:** A single-tap on the map shows METAR/TAF info if that layer is on *UNLESS* the TFR layer is also on and there is a TFR in that area. This is because the single-tap is used to

show either TFR info or METAR/TAF info. For safety reasons, when a TFR overlaps a METAR/TAF circle, we choose to show TFR information.

When the **AIRMET/SIGMET** layer is on, make a single-tap on an AIRMET or SIGMET to see detailed information about it. Notice that the graph shows which AIRMETS and SIGMETs are relevant at your current altitude as depicted by the aircraft icon.

See detailed information about an AIRMET or SIGMET either by selecting it from the list or by tapping the graphical representation above the list. As you select a specific AIRMET or SIGMET, it's highlighted on the map and all other AIRMETS and SIGMETs are hidden. Tapping **Close** restores all AIRMETS and SIGMETs and tapping **Highlight** closes the pop-up but leaves the selected AIRMET or SIGMET on the map until the map is tap to restore showing all AIRMETS and SIGMETs.

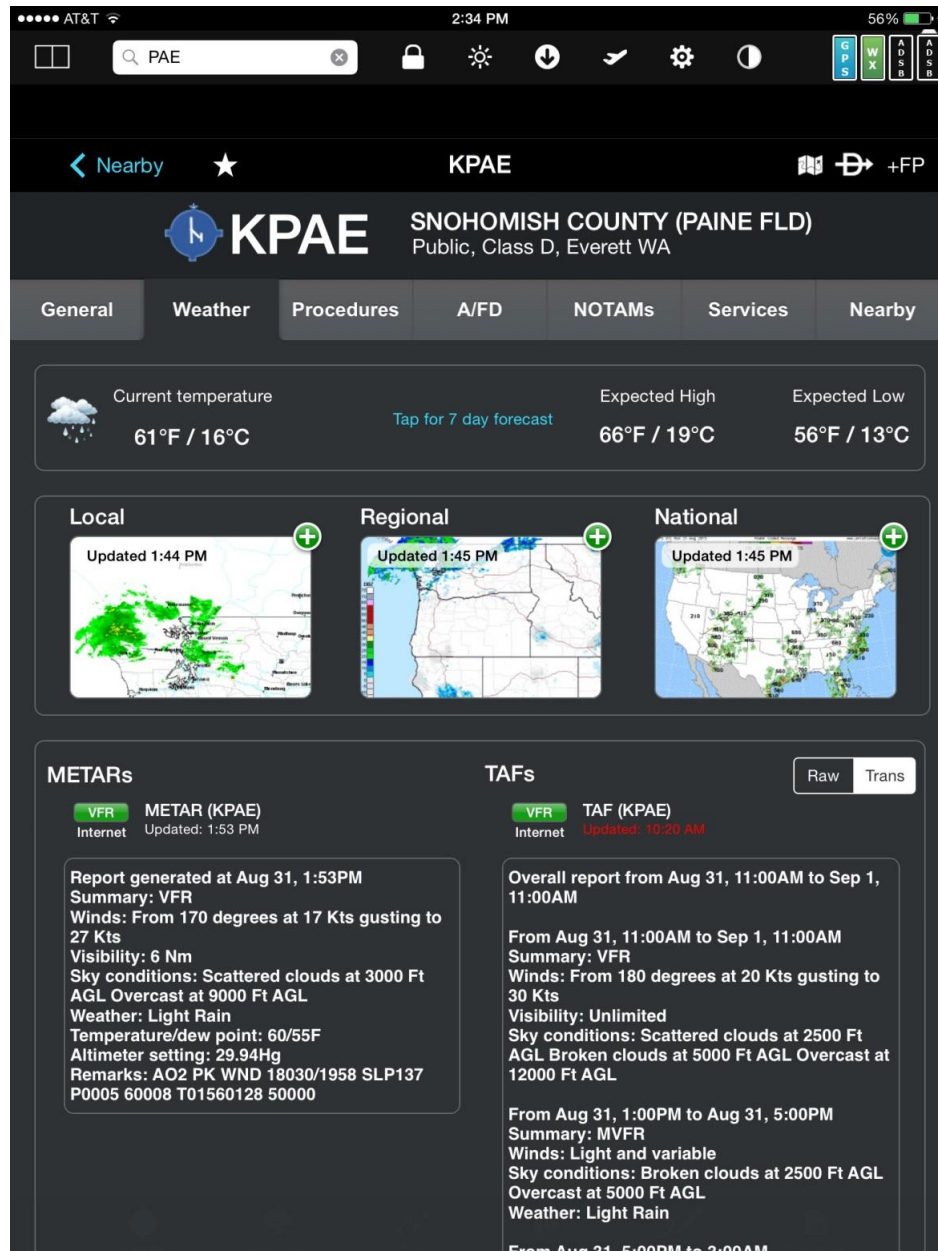


**Tip:** Tap the AIRMET or SIGMET text to see it much larger.



## For an Airport

When an airport is selected, switch from the default **General** sub tab to the **Weather** sub tab. You'll see animated local, regional, and national radar images around the airport if you're connected to the Internet. This is not available when offline or using ADS-B. You'll also see the METAR and TAF from the nearest airport (not necessarily that airport if it doesn't have these weather reports), a Winds Aloft table, and even a Leidos (Lockheed Martin) or DUATS briefing. The top area shows the current temperature and, with a tap, an easy-to-read 7 day forecast.



**Tip:** Tap the METAR or TAF to see it much larger. This is especially handy in-flight or for those of us who aren't 25 anymore.

## Nearby Weather

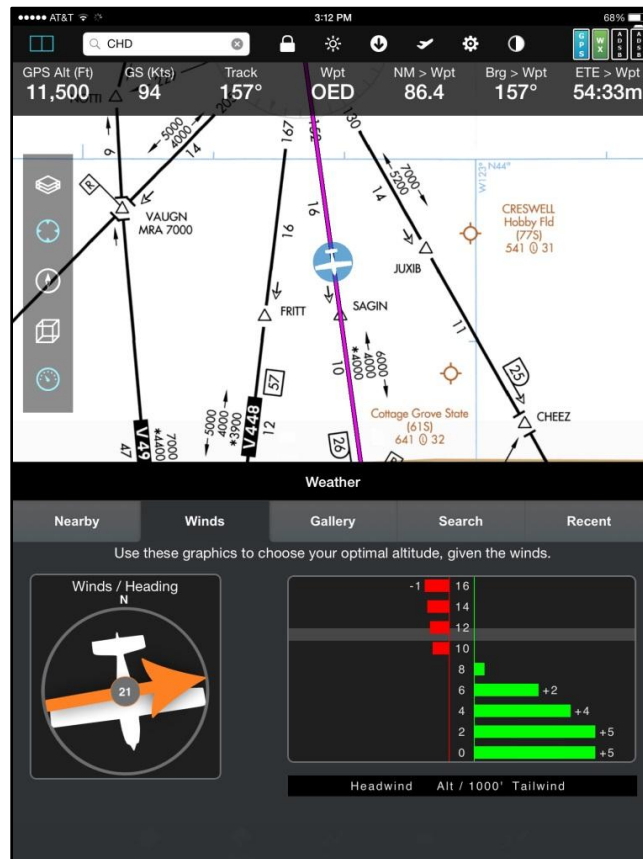
Tap the large **Weather** tab at the bottom of the screen to see essentially the same information as described above for your current GPS location.

## Graphical Wind Optimizer

Tap the **Weather** tab at the bottom of the screen then select the **Winds** sub tab. This is a very cool (and patent-pending!) feature. At a glance it answers the age-old in-flight question of whether to fly higher or lower. The Graphical Wind Optimizer shows what the winds are like relative to your current track (the aircraft image with the wind arrow through it) and what kind of headwind or tailwind to expect, given your current course, at different altitudes.

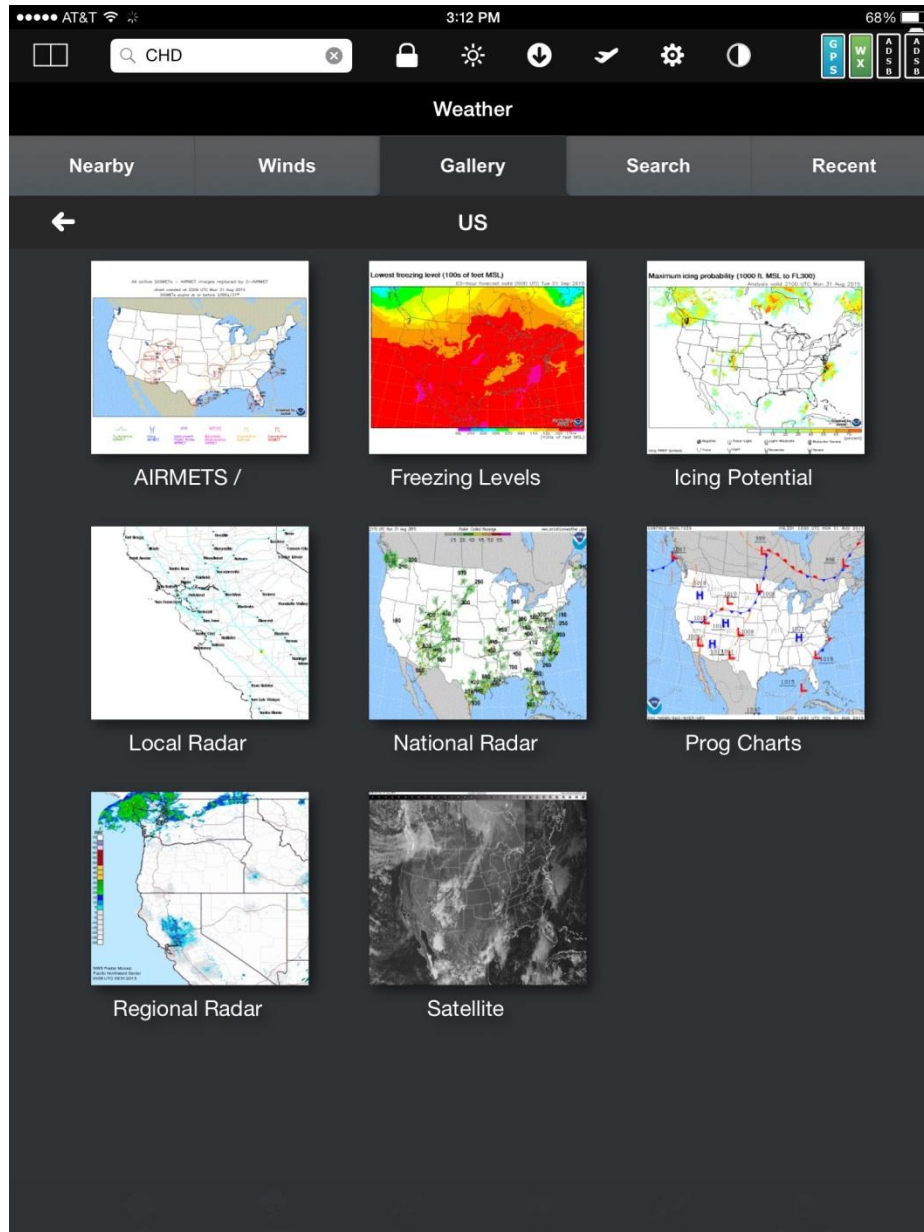
In the graph below, the various headwind (red) and tailwind (green) components in knots are shown for every altitude from 0 to 16,000 ft. Altitudes in the table have the 000's place removed for brevity. Thus, flying at 16 (16,000 ft.) would produce a 1 kt headwind while flying at 2,000 ft. will produce a 5 kts tailwind.

Similarly, the representation of an aircraft with an arrow means a 21 kts wind that is almost a perfect crosswind at the current altitude. The current altitude is shown both on the gauge below the map (11,500) and as the light gray bar on the graph.

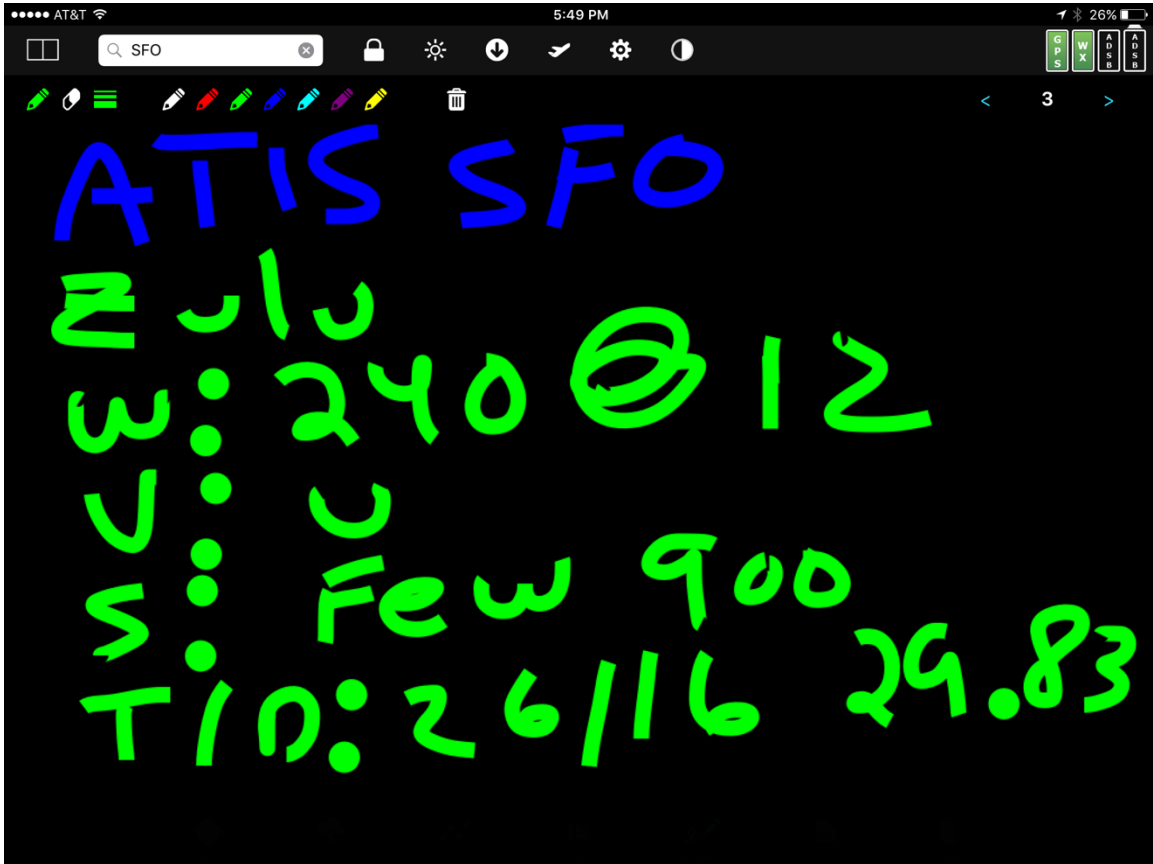


## Weather Gallery

FlyQ EFB gives quick and easy access to hundreds of US and Canadian weather graphics. Tap the main **Weather** tab then choose the **Gallery** tab.



## Scratchpad



Taking notes has never been so easy! Use the **Scratchpad** tab to quickly copy ATIS, clearances and any other notes you like. This works great with just a finger; no need to use a stylus.

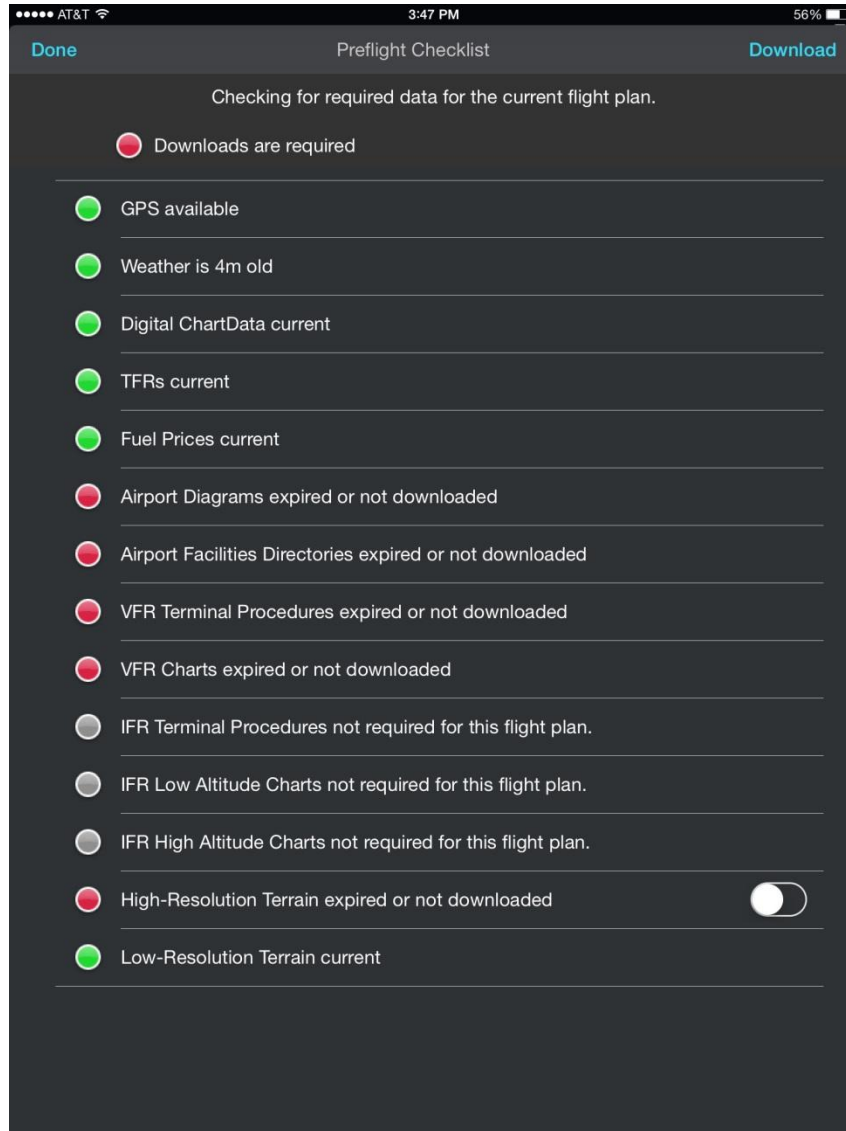
Eight scratch pages are available (buttons on the right of the window) and they aren't tied to any particular flight plan so you can use some for current flight notes, some for general notes, etc.

Select the **Pencil** icon (first icon) to draw, the second icon (**Eraser**) to selectively erase, the **Weight** icon to change the line width, and the **Trash Can** icon to clear the entire page. Draw using your choice of colors.

## Downloading Data

Downloading data is not the most exciting part of flying but FlyQ makes it painless.

### Preflight Checklist



FlyQ EFB checks your iPad or iPhone before flight to ensure that you're ready to fly. This feature is activated from the icon that looks like a plane taking off on the top bar of the app. The **Preflight Checklist** confirms that you have the VFR and (if applicable) IFR data for the states that your flight plan covers. If you don't have a flight plan loaded, the feature uses the GPS to confirm data for your current location. In addition to data, the Preflight Checklist also checks the status of your GPS, shows you the age of the weather, and more.

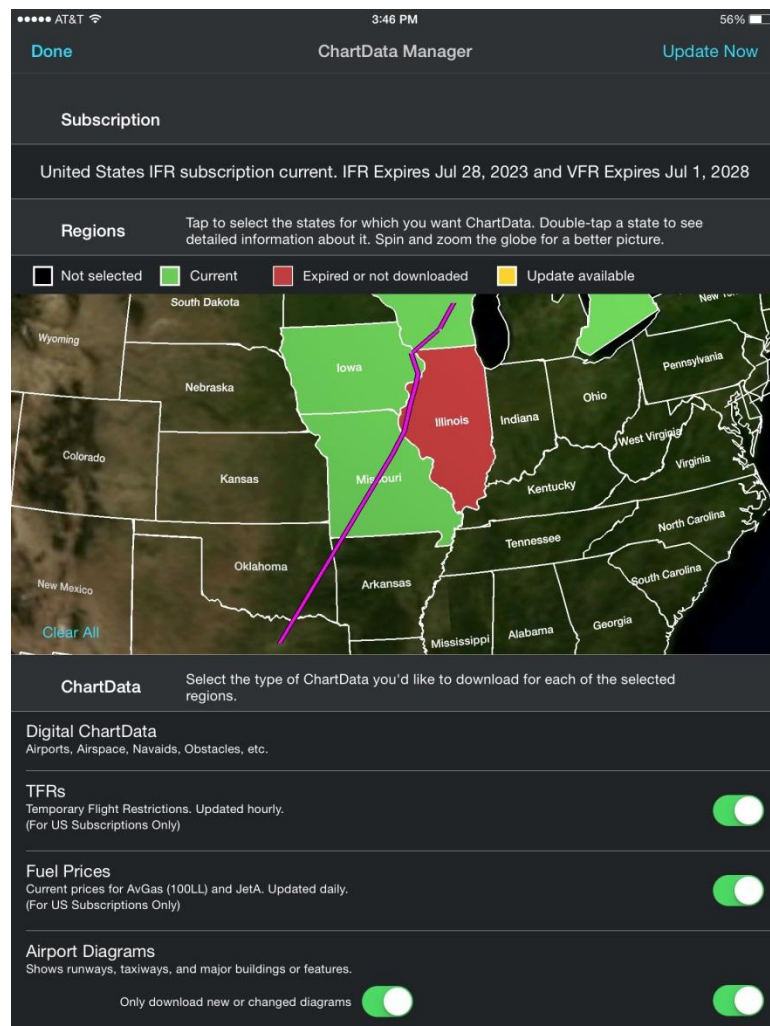
## Monthly ChartData

FlyQ makes downloading monthly data as fast and easy as possible, too. Simply spin and zoom a 3D globe to visually select the states you're interested in and FlyQ does the rest when you tap **Update Now**. FlyQ downloads incredibly fast because it downloads just the new information each month, not all data. As most aviation data remains the same every month, this feature alone can save you hours.

States with current data are green, those with expired data or where data has never been downloaded are red, and yellow indicates that an update is available. Tap a state to select or deselect it. Double-tap a state to see detailed information about the data for that state.

A unique and very helpful feature is the flight plan line superimposed on the ChartData Manager map. This clearly shows which states your plan will cross and makes it easy to ensure you don't forget to download data on or near your route.

**Tip:** The first download takes longer because FlyQ will download high-resolution terrain data. This is generally not downloaded again.



The ChartData section below the map lists all the possible ChartData product (e.g. *Airport Diagrams*, *VFR Charts (Sectionals)*, *IFR Terminal Procedures*, etc.). Tapping **Update Now** causes FlyQ EFB to download all the types of ChartData selected for all the states selected. ChartData already current and downloaded (green on the map) will not be downloaded again, only red or yellow states.

Deselecting a state for which ChartData is already downloaded does not erase that data from your iPad/iPhone; it just tells FlyQ EFB not to update it again in the future.

**Tip:** While there is no way to delete all the data for a given state, you can delete all the data of a given ChartData type. For example, it's not shown on the screenshot above but most of the larger ChartData products have a **Delete** button next to them so you can, for example, delete all the *VFR Charts* or all the *IFR Terminal Procedures*. If you then deselect some states and tap **Update Now**, the VFR Charts or IFR Terminal Procedures will be downloaded again for all the states except the ones you just deselected.

### Storage Considerations

FlyQ EFB can use as little as 1 GB of storage or up to 25 GB of storage depending on which states you select and what kind of data you need. Tap to select which states you need but do not select all states unless you really fly to all 50 states. Also, Alaska alone consumes about 20-25% of the total data space so only select it if necessary.

The **High-Resolution Terrain** is only used for the 3D synthetic vision; the **Low-Resolution Terrain** is used for TAWS, the AGL gauge, and Terrain X-Ray. If you don't plan to use the 3D feature of the app, you can save approximately 50% of the total data space by deselecting **High-Resolution Terrain** but we very strongly suggest keeping **Low-Resolution Terrain** on.

### Coverage Limitations

FlyQ EFB has some VFR and IFR maps for the Southern Canada, the Caribbean, most of Mexico, and the Gulf of Mexico. We have approach plates and airport diagrams for Mexico, most of the Caribbean, Belize, Honduras, Nicaragua, El Salvador, Guatemala, Costa Rica. The VFR coverage area for Mexico is only available to the northern areas of the country but the IFR coverage extends over most of Mexico.

The Seattle Avionics Airport Diagrams currently cover the lower 48 US states.

### Approach Plate Dates

The FAA prints two dates on the side of each plate. Although they look like expiration dates, they are not. They simply represent the print cycle of when that plate was last printed by the FAA. That is, even if a plate doesn't change for two years, every 28 days, it will have a new set of dates on the side. FlyQ ignores these dates and uses a database that the FAA publishes to download only the plates that really have changed or been added. Thus, even when all your plates are current, you may see 'old' dates on the side.

Unlike IFR enroute charts or Sectionals, there is no planned expiration date for a plate -- they just update it when necessary. Thus, it's not possible for the FAA to print an expiration date on a plate since they have no idea when it might expire.

Plates do have revision info on them in the lower left corner, however. This revision info remains constant even when the date on the side changes (unless the plate really was changed, of course) but it's hard to decode as it sometimes involves what's called a Julian date. Moreover, unless you know for sure what the "current" revision info is, it doesn't help you much as there is nothing to compare it to. We all just have to rely on the FAA accurately marking plates when changed. The good news is that we've been doing this for 10 years and we've never seen them make a mistake about this.

You can tell FlyQ EFB to download all plates, even the ones that have not changed, but we strongly recommend against it because it dramatically increases monthly update time.



FlyQ EFB supports a large and growing number of connections to external devices. In addition to more than 20 ADS-B systems (see *Supported ADS-B Systems* earlier in this document) FlyQ EFB connects to various in-panel systems, GPS systems, and flight simulators.

### Dynon SkyView and AFS AF-5xxx Series

With the addition of an inexpensive Wi-Fi adapter, your SkyView and AFS system can send GPS, AHRS, and ADS-B information to FlyQ EFB as well as bi-directionally exchange flight plans. Contact Dynon or AFS to purchase the Wi-Fi adapter.

#### Connecting FlyQ to SkyView or AFS

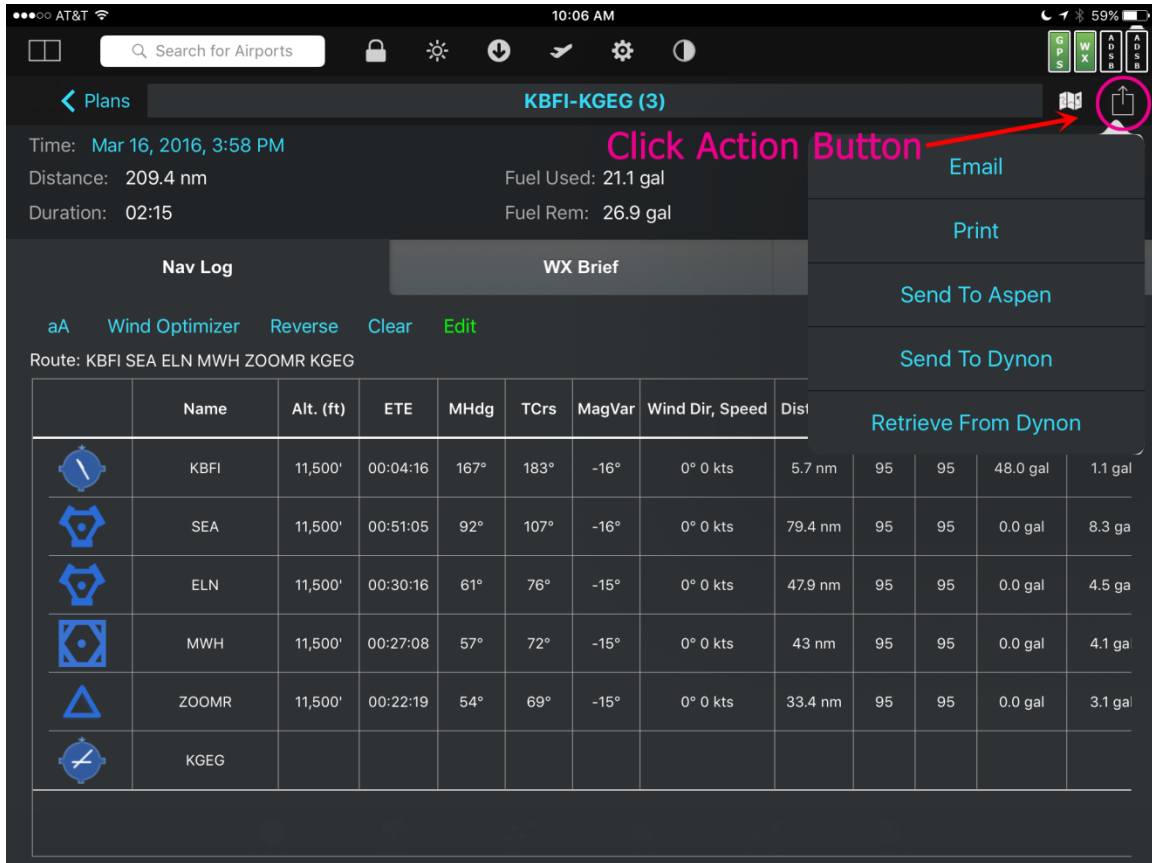
The in-panel system creates a Wi-Fi network when the Wi-Fi adapter is properly connected. Connect your iPad/iPhone to it just as any other normal Wi-Fi network with the **Settings** app on your iPad/iPhone. The name of the Wi-Fi network will include the device name.

Open FlyQ EFB once the iPad/iPhone is connected to the network. Within a few seconds, you'll see a message that your device is connected to FlyQ. At that time, the GPS and AHRS data from the Dynon or AFS device will be used in FlyQ EFB. You'll also see ADS-B traffic and weather on FlyQ EFB if your SkyView is connected to an ADS-B system (SkyView software release 15 or better is required for the ADS-B data). You can see additional information about the connection by tapping the **Status** indicators at the top right corner of the screen and selected the *ADS-B* tab.

Your iPad/iPhone cannot connect to the Internet via Wi-Fi when it's connected to the SkyView or AFS network. If your iPad/iPhone has a cellular connection, it can still connect to the Internet from that system. However, in that case, FlyQ EFB treats the SkyView / AFS connection like an ADS-B connection and will not access the Internet in order to ensure good performance (that is, cellular connections in-flight are tenuous at best so the system works better by not trying to use them).

**Note:** As of this writing, FlyQ EFB will say *Dynon* even when an AFS system is connected.

## Sending and Receiving Flight Plans



Go to the **Plans** tab and select the **NavLog** sub-tab. Tap the **Action** button at the upper right corner (looks like a box with an arrow coming out of it).

Tap **Send to Dynon** to push the current flight plan to Dynon SkyView or AFS.  
Tap **Retrieve from Dynon** to pull the flight plan loaded on SkyView or AFS.

**Note:** FlyQ EFB almost always has a flight plan open. However, if one is not open, you'll need to open or create one to see the **NavLog** sub-tab.

**Note:** The *Dynon* choices are only shown if FlyQ is connected to SkyView or AFS.

## Avidyne IFD440, 540, and 550

The new Avidyne IFD440, 540, and 550 systems include an integrated Wi-Fi adapter that works with FlyQ EFB. With IFD software version 10.2 or later, your Avidyne system can send GPS, AHRS, and ADS-B weather and traffic information to FlyQ EFB as well as bi-directionally exchange flight plans. GPS data is available with IFD version 10.1.

### Connecting FlyQ to the IFD440, 540, or 550

The in-panel system creates a Wi-Fi network. Connect your iPad/iPhone to it just as any other normal Wi-Fi network with the **Settings** app on your iPad/iPhone. The name of the Wi-Fi network will include the device name.

Open FlyQ EFB once the iPad/iPhone is connected to the network. Within a few seconds, you'll see a message that your device is connected to FlyQ. At that time, the GPS, AHRS, and ADS-B data (if applicable) from the Avidyne will be used in FlyQ EFB. You can see additional information about the connection by tapping the **Status** indicators at the top right corner of the screen and selected the *ADS-B* tab.

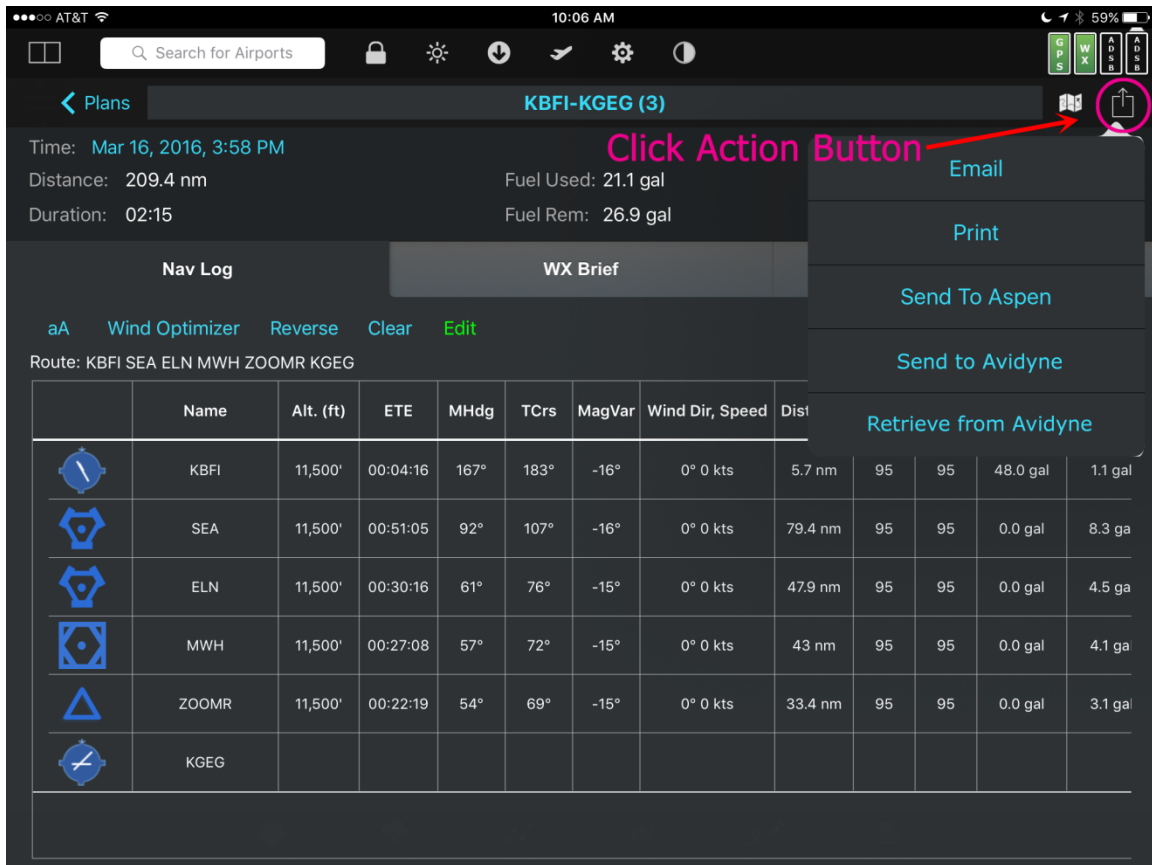
Your iPad/iPhone cannot connect to the Internet via Wi-Fi when it's connected to the Avidyne network. If your iPad/iPhone has a cellular connection, it can still connect to the Internet from that system. However, in that case, FlyQ EFB treats the Avidyne connection like an ADS-B connection and will not access the Internet in order to ensure good performance (that is, cellular connections in-flight are tenuous at best so the system works better by not trying to use them).

To get weather and traffic, you'll need an MLB100 / Skytrax with the latest firmware (version 4.1.0 as of this writing). However, the system must be configured so that both ADS-B traffic and weather information is coming through the same IFD RS-232 ports. If not, you may miss weather or traffic

Prior to Avidyne's 10.2.0 software upgrade, ADS-B traffic had to be on a separate data type and MLB100 display port (ARINC 429) from ADS-B weather (RS-232). With software version 10.2.0, for full ADS-B (not Skywatch) display on any Avidyne IFD, the ADS-B traffic and weather share the same RS-232 ports on both the IFD and MLB100.

Avidyne Tech Support would be the place to start you're not sure how the IFD should be configured for full ADSB.

## Sending and Receiving Flight Plans



Go to the **Plans** tab and select the **NavLog** sub-tab. Tap the **Action** button at the upper right corner (looks like a box with an arrow coming out of it).

Tap **Send to Avidyne** to push the current flight plan to the IFD440/540.

Tap **Retrieve from Avidyne** to pull the flight plan loaded on the IFD440/540.

**Note:** FlyQ EFB almost always has a flight plan open. However, if one is not open, you'll need to open or create one to see the **NavLog** sub-tab.

**Note:** The *Avidyne* choices are only shown if FlyQ is connected to an IFD440/540.

## Aspen Connected Panel

The Aspen Evolution system can receive flight plans sent from FlyQ EFB with the addition of the Aspen Connected Panel. With the Connected Panel, the FlyQ EFB flight plans transfer to your system's GPS such as the Garmin 430/530.

### Connecting to the Aspen Connected Panel

The Connected Panel creates a Wi-Fi network. Connect your iPad/iPhone to it just as any other normal Wi-Fi network with the **Settings** app on your iPad.

Your iPad/iPhone cannot connect to the Internet via Wi-Fi when it's connected to the Connected Panel network. If your iPad/iPhone has a cellular connection, it can still connect to the Internet from that system. However, in that case, FlyQ EFB treats the Connected Panel connection like an ADS-B connection and will not access the Internet in order to ensure good performance (that is, cellular connections in-flight are tenuous at best so the system works better by not trying to use them).

### Sending Flight Plans

Click Action Button

Name	Alt. (ft)	ETE	MHdg	TCrs	MagVar	Wind Dir, Speed	Dist	Retrieve From Dynon			
KBFI	11,500'	00:04:16	167°	183°	-16°	0° 0 kts	5.7 nm	95	95	48.0 gal	1.1 gal
SEA	11,500'	00:51:05	92°	107°	-16°	0° 0 kts	79.4 nm	95	95	0.0 gal	8.3 ga
ELN	11,500'	00:30:16	61°	76°	-15°	0° 0 kts	47.9 nm	95	95	0.0 gal	4.5 ga
MWH	11,500'	00:27:08	57°	72°	-15°	0° 0 kts	43 nm	95	95	0.0 gal	4.1 gal
ZOOMR	11,500'	00:22:19	54°	69°	-15°	0° 0 kts	33.4 nm	95	95	0.0 gal	3.1 gal
KGEG											

Go to the **Plans** tab and select the **NavLog** sub-tab. Tap the **Action** button at the upper right corner (looks like a box with an arrow coming out of it). Tap **Send to Aspen** to push the current flight plan to Connected Panel.

## X-Plane Flight Simulator

FlyQ EFB supports X-Plane version 10.2 or higher. To set it up:

1. Ensure you're using the latest version of X-Plane (10.2 or greater required).
2. Make sure your iPad/iPhone and the computer running X-Plane are on the same Wi-Fi network.
3. You'll need to tell X-Plane what the IP address of your iPad/iPhone is. To do that:
  - A. Tap the **Settings** app on your iPad/iPhone (usually on the home screen).
  - B. Tap **Wi-Fi**.
  - C. Look for the Wi-Fi network with a checkmark next to it and tap it to see more details. **Note:** If no network has a checkmark, you cannot connect X-Plane and FlyQ EFB.
  - D. Write down the value you see in the **IP Address** field.
4. Launch X-Plane on your computer.
5. Select **Settings** then click **Net connections** and **iPhone/iPad**.
6. Check the box for **Send AHRS and ADS-B data to Xavion or FlyQ**.  
**Important!** If you see a Xavion option without FlyQ, use the Xavion option instead of the FlyQ option as there was a labeling error in earlier versions of X-Plane.
7. Enter your iPad or iPhone's IP address in the text field next to **Send AHRS and ADS-B data to Xavion**. The field probably has a value like *192.168.0.1* by default. That value will not generally work and needs to be replaced by the actual IP address of your iPad or iPhone. Leave the *48002* value unchanged.
8. Click the **X** in the corner of the **Net Connections** window to return to X-Plane.
9. Open FlyQ EFB.
10. Within a few seconds, FlyQ EFB will inform you that it's connected to X-Plane.

## Microsoft Flight Simulator / Prepar3D

FlyQ EFB will automatically recognize Microsoft Flight Simulator or Prepar3D when you use the FSXFlight plugin. See <http://www.fsxflight.com/> for more info.

When connected, FlyQ EFB will use the GPS, AHRS, and traffic info (if any) sent from the simulator.

## Other Simulators

In general, any simulator that works with other iPad/iPhone apps should automatically work with FlyQ EFB. In some cases, you may need to use the settings marked for ForeFlight or WingX.

## GPS

FlyQ EFB automatically uses any external GPS connected to your iPad or iPhone. Apple must approve external Bluetooth GPS devices so not all work with the iPad/iPhone. The most commonly used approved devices are the Dual XGPS150/160, the Bad Elf, and the Garmin GLO. They are all about \$100 and all work well with FlyQ EFB. And they all work *much* better than the /iPhone's internal GPS. If you choose not to use an ADS-B receiver (almost all of which include a WAAS GPS), we very strongly suggest using an external GPS.

External GPS devices connect to the iPad/iPhone at the operating system level, not directly to FlyQ EFB. The operating system sends the location information to FlyQ EFB and any other app that requests it. Therefore, it is critical that **Location Services** is turned on in the iPad/iPhone's **Settings** and that **Location Services** is specifically allowed for FlyQ EFB.

- Open the **Settings** app on your iPad/iPhone
- Select **Privacy** on the left side panel
- Ensure that **Location Service** is *ON*
- Tap **Location Services** and look for *FlyQ EFB*
- Ensure that FlyQ EFB is set to *While Using*

FlyQ EFB will display the source of the GPS connection when you tap the **Status** icons at the upper left corner of the screen. However, since the operating system is supplying the GPS location to FlyQ EFB, the app will show *iPad (or iPhone) / Bluetooth* as the data source. This cannot be helped because the iPad does not specify what the source of location is.

**Note:** Some GPS devices have a utility app. Please do not open them while FlyQ EFB is running as they tend to “grab” the GPS feed and prevent FlyQ EFB from working properly. This is especially true with the Dual app.

## AHRS

Many ADS-B systems include an AHRS (source for yaw, pitch, and roll information) that is very useful when using FlyQ's synthetic vision. These include the Merlin, iLevil devices, Dual XPS190, Clarity, some Stratux devices, and SkyRadar DX. FlyQ EFB automatically uses the AHRS feed from these devices when they're connected and you do not need to do anything additional.

FlyQ EFB also supports two standalone AHRS units: the Levil miniG and the Dynon D2. To use these units:

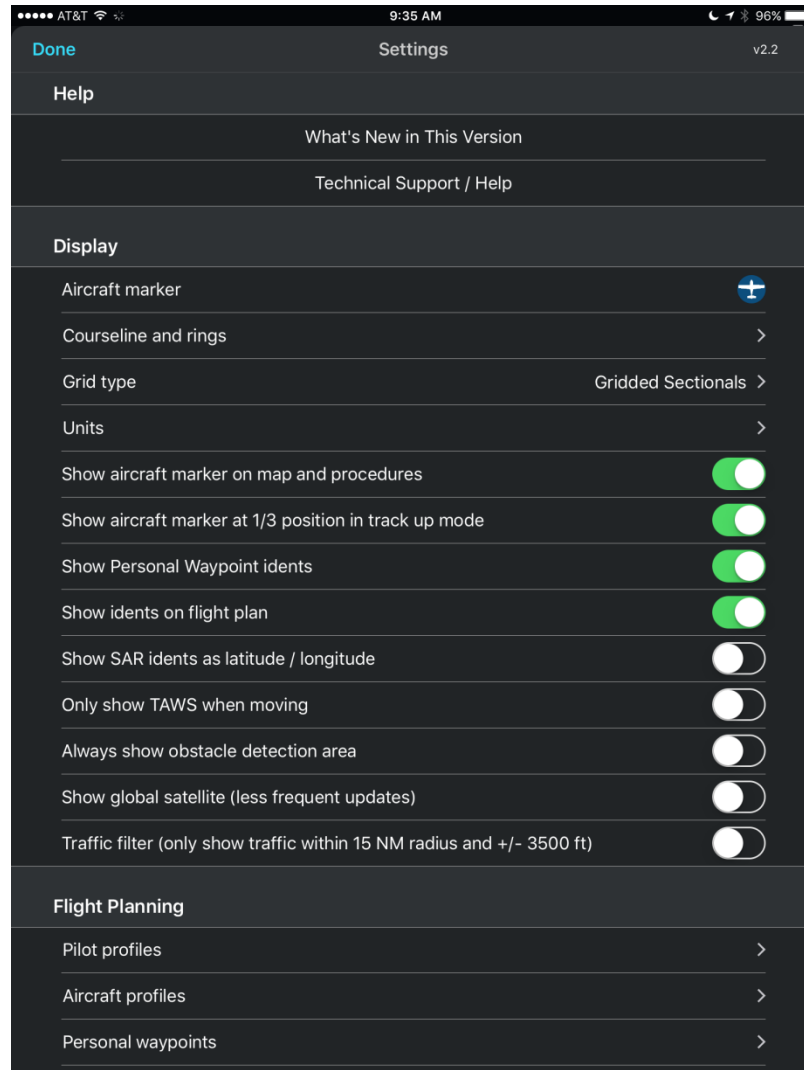
- Turn the device on and allow it to “warm up” for a minute or so.
- Connect your iPad/iPhone's Wi-Fi source to the network generated by the device.

- Open FlyQ EFB.
- In FlyQ EFB, go to **Settings** and look in the **Device** section.
- Switch **Levil AHRS / Dynon D2 AHRS** to *ON*



## Settings

There are many options and setting you can modify in the **Settings** page of FlyQ EFB. Tap the gear icon at the top of the main screen to get to **Settings**.



**Tip:** The top right of the page shows the version number of the app (2.2 in this case).

## Help

### What's New in This Version

Gives a description of the features and fixes added in the current release

### Technical Support / Help

Links to more than a dozen YouTube videos, support documents, and other learning tools.

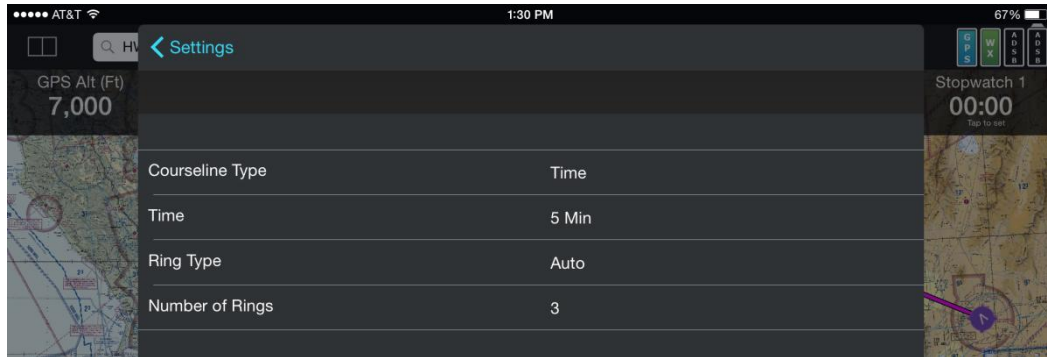
## Display

### Aircraft marker

FlyQ EFB has several different sizes, colors, and styles of aircraft markers. Tap to select the one you prefer.

### Courseline and Rings

The **Extended Courseline** and **Rings** layers can be configured based on distance from your aircraft or in terms of time based on your current speed. The **Courseline** or **Rings** layer must be turned on for this to have any effect on a map.



### Grid type

FlyQ EFB supports the standard *Gridded Sectionals* system used by CAP groups in the lower 48 states, the increasingly popular *Cell Grid* system, and the *GARS* system used primarily by law enforcement officials. The **Grid** layer must be turned on for this to have any effect on a map.

### Units

FlyQ EFB defaults to typical US pilot units of measurements in terms of speed, distance, altitude, and so on such as *Kts*, *NM*, and *Feet*. Tap to change to other units.

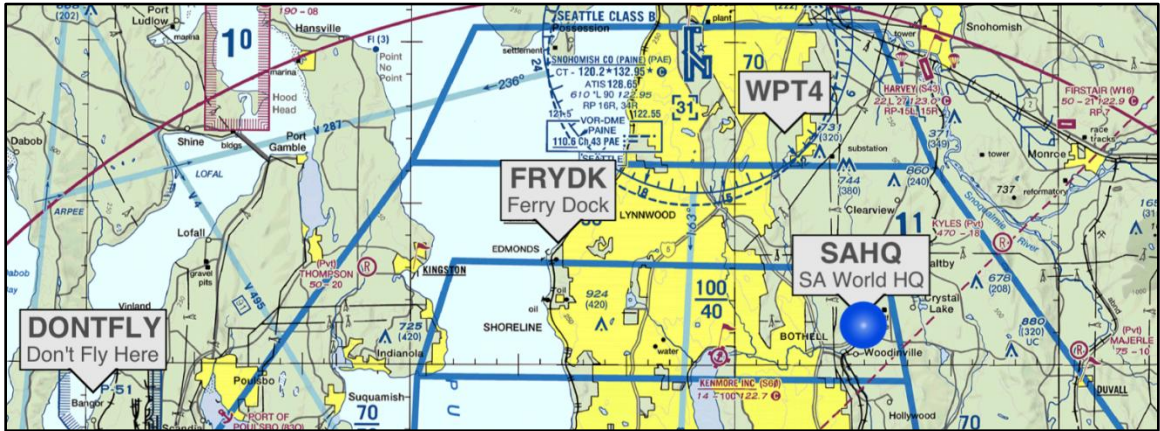
### Show aircraft marker on map and procedures

In some situations, it may be against regulations to show ownship position on maps and procedures. This switch disables such display.

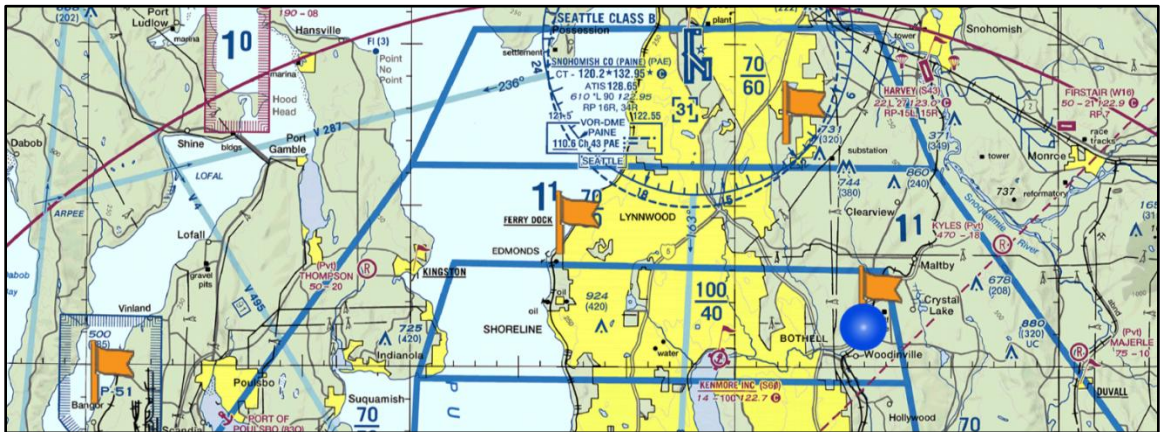
## Show Personal Waypoint ids

Personal Waypoints may be displayed with their **Ids** (and **Names**, if they have them) or simply as flag markers. The flag markers are ideal when there are many Personal Waypoints in very close proximity to each other.

### With Ident



### No Ident



## Show ids on flight plan

FlyQ EFB normally states the ident or name of each point along the flight plan line. In some cases, especially for Search and Rescue missions where these points may be very close together, it might be helpful to turn this feature off.

## Show SAR ids as latitude / longitude

When flying an SAR (Search and Rescue) pattern, it may be useful to display the lat/lon of each turn point rather than artificial ident names like SAR-1 and SAR-2.

## Only show TAWS when moving

The map's TAWS layer uses yellow and red highlights to color terrain based on elevation relative to your altitude. This can get in the way of flight planning at your desk. This

switch can be turned on so there is no need to turn the TAWS layer off every time you plan a flight.

### **Always show obstacle detection area**

The **Obstacle** layer displays a red “pie wedge” detection area in front of the aircraft marker when it detects an obstacle near your predicted position within two minutes. The “pie wedge” is not normally displayed otherwise. Enable this feature to show a green pie wedge when no threat is detected.

### **Show color infrared satellite**

FlyQ normally displays weather infrared satellite images with shades of grey. When this switch is selected, it uses distinct color bands instead.

### **Traffic filter**

The ADS-B **Traffic** map layer may show aircraft that is too far away to be any threat to you. You can turn on a filter that hides such traffic either by tapping a button on the map’s 15 NM traffic ring or by turning this switch on. Traffic that is more than 15 NM away or more than 3,500 vertical feet away is hidden when the filter is on.

**Note:** Even when the traffic filter is off, FlyQ EFB hides traffic more than 75 NM away to reduce screen clutter and improve system performance and memory utilization.

### **Enable ring on ADS-B traffic layer**

FlyQ normally shows a 15 NM ring around your position when the **Traffic** layer is on so you judge distance to targets; however, it’s redundant if you’re using the **Rings** layer.

## **Flight Planning**

The Flight Planning section provides links for adding, deleting, or modifying pilot and aircraft profiles as well as Personal Waypoints and Flight Tracks. The **Defaults** button controls certain default parameters of a flight plan such as VFR vs. IFR, Home Airport, etc. DUATS codes and the choice of using either Leidos (Lockheed) or DUATS is part of each pilot profile.

### **VSR ft above airport**

You can specify a target AGL when using the VSR gauge to determine the correct descent profile to reach a landing airport. The VSR gauge uses this altitude, not the ground elevation of the airport, to determine the descent slope.

## VSR nm from airport

Specify how far from the center of the airport you want to be at the target altitude (above). This allows for standard pattern entry.

## Preferences

### Allow the iPad (or iPhone) to sleep

Normally you won't want your iPad/iPhone to sleep while flying but it might sometimes be useful. When the iPad/iPhone is sleeping, ADS-B and GPS connections will usually be severed and it may take some time for them to reconnect. ADS-B data sent while the iPad/iPhone is sleeping is also generally lost so it may take many minutes for a complete weather picture to be restored.

### List helipads

Most pilots don't fly helicopters, yet there are thousands of heliports. FlyQ EFB normally suppresses showing heliports in lists like **Airports/Nearby** and when double-tapping the map for improved clarity for fixed-wing pilots. Turn this switch on to show heliports.

### List private airports

There are more than 10,000 private airports in the US that most pilots are not authorized to fly to. By default, FlyQ EFB removes these from **Search Box** lists for clarity. However, regardless of this setting, private airports may still be found from the **Search Box** by entering the exact ident of the airport. That is, entering *Roche Harbor* in the **Search Box** will not find any private airports, just a public seaplane base, if the switch is off but entering *WA09* will find the private Roche Harbor land airport in either case. Double-tapping the map will also find private airport regardless of this setting since they are generally shown in Sectionals.

### Disable map rotation other than North Up and Track Up

FlyQ EFB normally allows you to use two fingers to rotate the 2D map in any direction. Sometimes this makes it difficult to manipulate the map in turbulence so pilots may prevent arbitrary rotation by turning this switch on. When this switch is on, the 2D map is always shown as North Up unless you're moving and Track Up is selected. This switch has no effect on a 3D map.

### Print airport diagrams and procedures full page

The original FAA airport diagrams and approach procedures are approximately half the size of a standard A4 piece of paper, making them fit easily on a kneeboard. FlyQ EFB normally prints and emails these documents at the same half-page size. However, sometimes it's nice to see the procedures expanded to fit the entire page for better

readability. Such documents are printed as full-page documents when this switch is on. Emailed airport diagrams and procedures are always emailed at their original size regardless of this setting.

### **Auto display airport diagrams on landing**

FlyQ EFB normally shows a geo-referenced airport diagram when it believes you've just landed at an airport. For this to happen, your ground speed must drop below 50 Kts for several seconds and the airport must have an FAA-provided airport diagram. The FAA provides diagrams for the 700 or so largest airports in the US (all class B, C, and D airports). Turn this switch off to disable the feature.

### **Disable FlyQ's use of the Internet while moving**

FlyQ EFB behaves differently when it thinks it's connected to the Internet versus offline. This can cause problems if you have a very weak Internet connection such as when flying low with a cellular-enabled iPad or an iPhone. In those cases, FlyQ EFB could be tricked into thinking it can use an Internet connection but the weak signal causes very long delays or connection problems. When this switch is on (which is the default), FlyQ EFB will not attempt to use the Internet when you're moving even if the iPad or iPhone thinks it has an Internet connection. The iPad/iPhone's connection to the Internet is not affected in any way by this switch, just FlyQ's use of it.

### **Preferred fuel type**

Several places in FlyQ display fuel prices. To increase readability, the app generally shows just the prices associated with one type of fuel.

### **Autohide tab bars**

Controls when the tab bar at the bottom of the screen disappears. Options are *2 seconds*, *6 seconds*, and *Never*. The default is *6 seconds*.

### **Autohide 2D controls**

Controls when the Map bar on a 2D map disappears. Options are *2 seconds*, *6 seconds*, and *Never*. The default is *Never*.

### **Autohide Procedure controls**

Controls when the control bar on a Procedure disappears. Options are *2 seconds*, *6 seconds*, and *Never*. The default is *6 seconds*.

### **Autohide 3D controls**

Controls when the Map bar on a 3D map disappears. Options are *2 seconds*, *6 seconds*, and *Never*. The default is *6 seconds*.

## Map modes

Tapping the 3D cube button on any map bar switches the display to the next map mode (Map (2D), 3D, then AR). You may disable switching to AR (Augmented Reality) or 3D if you prefer.

## Save flight tracks to the cloud

Recorded tracks are stored on the iPad or iPhone that recorded it. They are also stored in our secure cloud for access by FlyQ Online (PC and Mac). The cloud system also generates the graphical representations of your flight for emailing, printing, posting to Facebook or Twitter, etc. You may disable cloud storage with this switch but we do not recommend it as it reduces functionality.

## Automatically record flights

By default, FlyQ automatically begins recording flights when your speed exceeds 50 kts for a few seconds and stops when it goes below 20 kts. You can disable the automatic recording but still record flights by using the manual **Start** and **Stop** buttons in the **Flight Recording** area of the **Status Indicators**.

## Alerts

### Explain the problem with ADS-B traffic

ADS-B traffic is highly problematic for aircraft flying without an ADS-B Out system and the vast majority of portable ADS-B systems lack ADS-B out. When this switch is on, FlyQ EFB shows a warning message about this once a day and suggests that you read the [ADS-B Primer](#) for more information. This document, in the *ADS-B* section, also includes some of the reasons why ADS-B traffic should not be relied upon in most situations. If you're already read the *ADS-B Primer* and understand the issues, you can turn this warning off.

### Show download alert when ChartData Updates are available

Every 28 days, Seattle Avionics releases new ChartData™. FlyQ EFB shows an alert when new ChartData is available unless this switch is on.

### Show Preflight Checklist alert on flight plan load and creation

FlyQ EFB helps ensure that you have the data you need for a safe flight by reminding you to use the Preflight Checklist when you create a new flight plan or load an existing one. You can disable this feature here.

## FlyQ Login

This section lets you enter the email and password associated with your account, confirm your login, retrieve a lost password, or change your email or password.

**Tip:** The **Change Email or Password** feature lets you change the email we have associated with your account to a different email, typically because you began using a different email address. If you simply want to login as a different user, do not tap **Change Email or Password** but tap **Logout** and log back in as the different user.

## Devices

FlyQ EFB automatically connects to GPS devices that follow Apple's protocol. This means the Dual XGPS 150 and 160, the Garmin GLO, and the Bad Elf. These devices use Bluetooth and must be paired to the iPad/iPhone once before they can be used. The iPad/iPhone gets position updates from these devices and makes them available to any app that requests a position (like FlyQ EFB) provided that the user has allowed the app to access what's called **Location Services**. There is no switch, per se, in FlyQ EFB for these GPS devices as they're handled by the iPad/iPhone's operating system. If you're having a problem with GPS connectivity, please refer to the *Troubleshooting* section of this document.

ADS-B receivers generally use Wi-Fi to communicate with the iPad or iPhone. FlyQ EFB automatically engages ADS-B processing when it detects a connection to a Wi-Fi network broadcast from a supported ADS-B receiver. The Dual XGPS 170 and 190 are also automatically handled by FlyQ EFB via Bluetooth rather than Wi-Fi.

You need to manually enable the **Levil AHRS / Dynon D2 AHRS** switch, as well as connect to the appropriate Wi-Fi network, when using these devices. You do not need to do this if you're using a Levil ADS-B receiver with integrated AHRS.

**Ignore tail number** lets you remove a specific aircraft, by tail number, from an ADS-B traffic display. This is typically used to filter-out your own aircraft but it will not generally have any effect unless your aircraft broadcasts its tail number via an ADS-B Out transmitter.



## Waypoint Entry

In addition to standard named aviation points (airports, nav aids, fixes, etc.), FlyQ EFB accepts a wide variety of different ways to express a point in space. Virtually everywhere in the app that accepts standard named points also accepts these points.

### Latitude/Longitude

There is no standard way to enter latitude/longitude points so FlyQ EFB recognizes all the common formats such as:

- W121.25N47.5 or N47.5W121.25 or 121.25W47.5N
- W121.25xN47.5 or N47.5xW121.25
- W121'15"N47'30' or N47'30"W121'15'
- 4730/12115
- 4730N/12115W

**Note:** You cannot use spaces to separate latitude and longitude because FlyQ EFB interprets spaces as multiple idents.

### Relative Bearings

You can express a point as relative to a nav aid, airport, or fix by using the airport, nav aid, or fix ident, a slash, a radial (or bearing for a fix or airport), and a distance in NM.

For example:

*SEA/87/35*

This is the point 35 NM along the 87 radial from the SEA VOR. If a fix or airport is used instead of a nav aid, the first number is a magnetic bearing rather than a radial.

In cases, such as above, where the ident is both a nav aid and an airport, the nav aid is used. To specify an airport in such an ambiguous case, use the ICAO rather than FAA ident for the airport (e.g. *KSEA* in this case).

### Intersection of Two Radials

Sometimes ATC tells you to fly to the intersection of radials from two different nav aids. This can be expressed by entering the first ident and the desired radial then a slash with the second ident and the desired radial. For example:

*SEA104/TCM74*

This is where the 104 radial from SEA meets the 74 radial from TCM. It also happens to be the RADDY fix.

## CAP Grid References

FlyQ EFB accepts grid references in Gridded Sectional, Cell, or GARS format regardless of which grid system is displayed. Unless a corner suffix is added (*NW*, *NE*, *SE*, or *SW*), the lat/lon of the center of the grid cell will be used.

Examples:

*SEA140*. The center of the SEA 140 grid cell.

*SEA140A*. The center of the SEA 140A grid cell (which is the upper left quadrant of the SEA 140 cell)

*SEA140ANE*. The top-right corner of the SEA 140A grid cell.

*47122DAB*. The center of the *47122DAB* grid cell -- roughly the center of the SeaTac (SEA) airport in the Cell grid system.

*47122DABSW*. The southwest corner of the grid cell above. This is identical to the position specified as *47122DA* as *47122DA* means the center of the *47122DA* grid.

*115KO13*. The center of the *115KO13* grid cell – roughly the center of the SeaTac (SEA) airport in the GARS grid system.

*115KO1NE*. The northeast corner of the *115KO1* grid cell – near the RNT airport.

## Entering Waypoints to Create a Flight Plan

You can create a flight plan using the **Search** box at the top of the app that includes points in any of these formats. For example:

*PAE SEA/87/35 SFO*

*PAE W121.25N47xN47.5 SFO*

*PAE SEA104/TCN74 SFO*

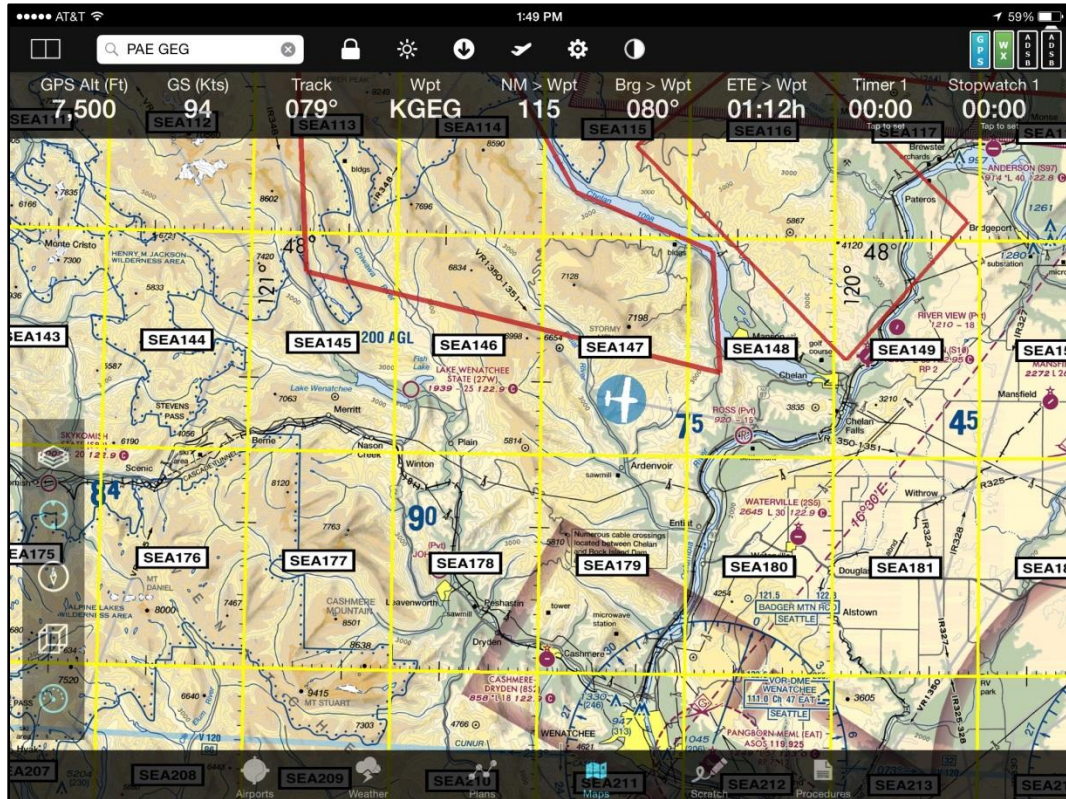
**Note:** If you want to use a point in this format multiple times, it might be easier to create a **Personal Waypoint** and use the ident of the Personal Waypoint in the plan instead. See the **Personal Waypoints** section for more information.

## Search and Rescue (CAP)

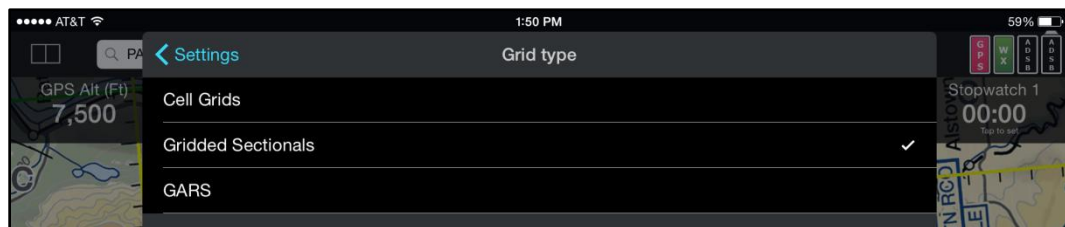
If you fly with the Civil Air Patrol (CAP), the Coast Guard Office of Search and Rescue (CG-SAR), or other search and rescue organization, you'll appreciate the many grid systems and automatic pattern planning features of FlyQ EFB.

For additional information about the CAP grid system, please see: <http://www.cap-es.net/capgrids/cap%20grid%20systems.htm>

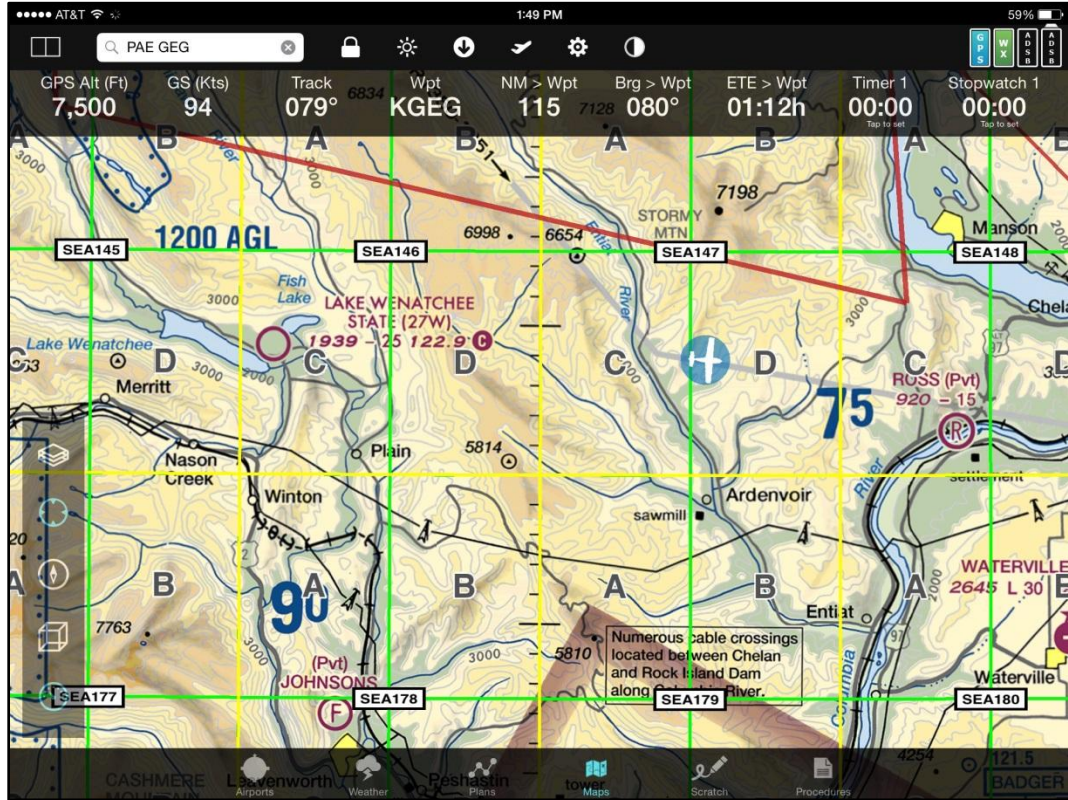
## Grids



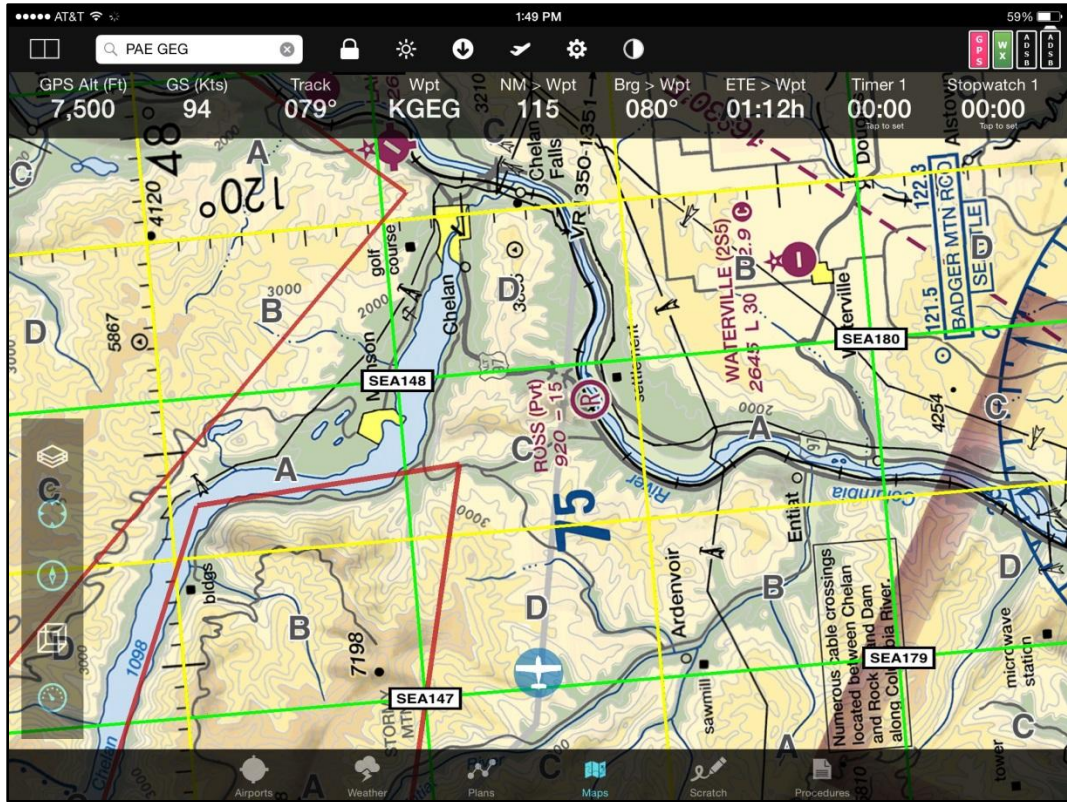
FlyQ EFB has three grid styles that you can overlay on any map by selecting the **Grid** option on the **Layers** popup. They are the standard CAP grid (*Gridded Sectionals*), the newer *Cell Grid*, and *GARS* for global use. You can select which style you prefer in **Settings**.



You see more and more detail (such as quadrant letters) as you zoom in. The line colors change to indicate zoom level.



The labels remain right-side up even when the map is rotated.



## Patterns

FlyQ EFB includes automatic route creation for nine different CAP and Photographic search patterns. The most common are the *Parallel Track* and *Creeping line* but FlyQ EFB has many more. The *Grid Search* is a special case of the *Parallel Track* for searching strictly inside a grid cell.

In all cases, you tap the **Plans** tab at the bottom of the screen and go to the **New Plan** area. Select *Search and Rescue* as the **Routing** method then choose the specific **Pattern**. You'll see a **Preview** area towards the bottom of the screen that reflects the search parameters as you enter them. Tap the **Preview** at any time to see it full-screen.

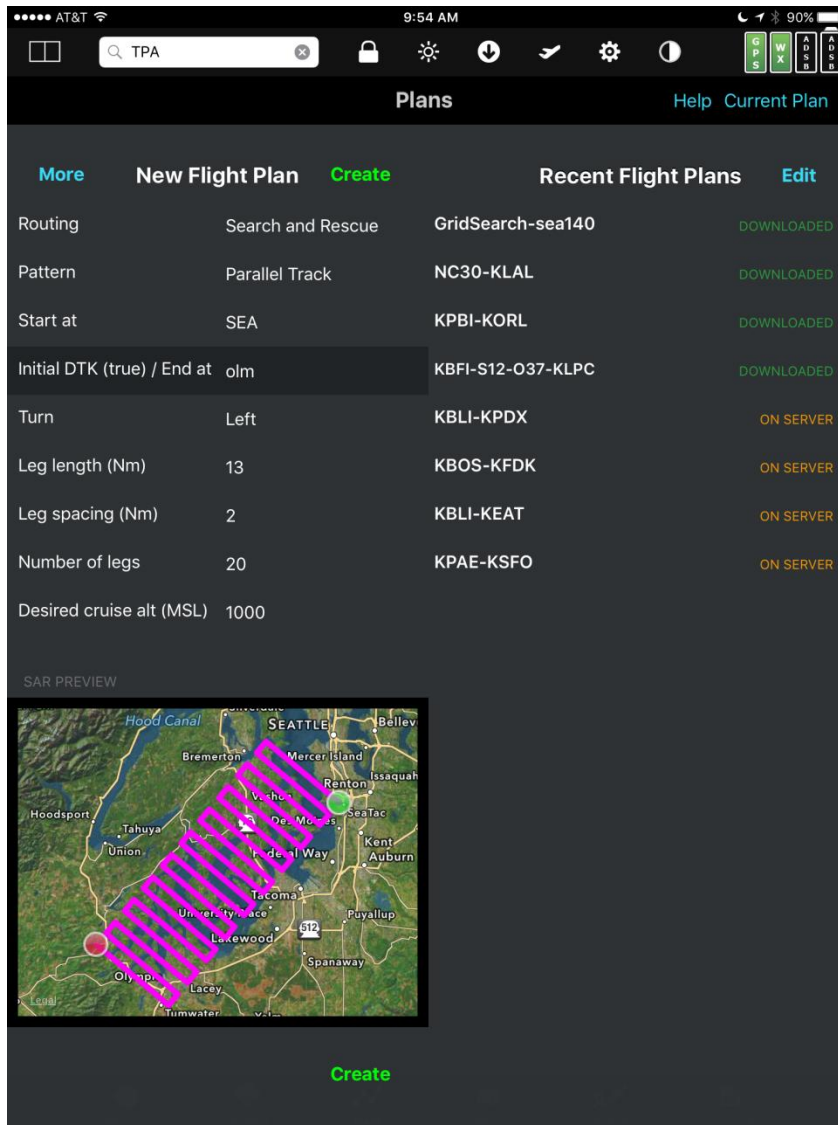
In the **Preview** area, a green dot represents the start of the route while a red represents the end.

Tap **Create** (either at the top or bottom of the **New Plan** area) to create a flight plan with the specified route; the plan shown in the **Preview** is not actually created until **Create** is tapped.

## Parallel Track

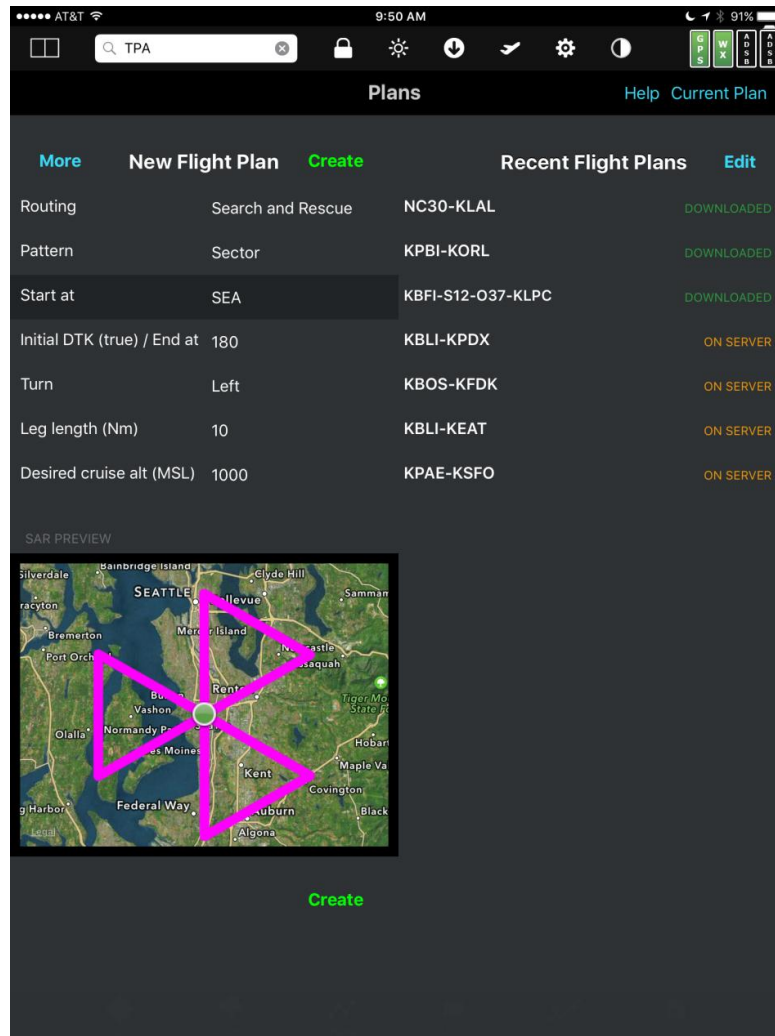
**Note:** *Creeping Line* and *Parallel Track* are almost identical. The difference is that the first leg of a *Creeping Line* pattern is half the length of all other legs so the pattern effectively sweeps left and right from the starting point. A *Parallel Track*, by contrast, has all legs of equal length so search begins at the starting point on one end of the corridor rather than the center.

**Note:** The *Grid Search* pattern is preferred and offers more flexibility if the parallel search is wholly inside a grid cell.



Parameter	Function/Values
<b>Start at</b>	A standard aviation named point (airport, navaid, etc.), lat/lon, grid reference, navaid with relative distance and bearing, or navaid/navaid intersection. See the <i>Waypoint Entry</i> appendix for details about how to enter these points.
<b>Initial DTK (true) / End at</b>	Enter either a true course (0-360 degrees) or a named aviation point.  If a named aviation point is used, FlyQ EFB automatically calculates the proper DTK and also the correct number of legs to reach that point (up to a maximum of 100 points).
<b>Turn</b>	Either <i>Right</i> or <i>Left</i> turns
<b>Leg length (Nm)</b>	The distance of each “long” leg.
<b>Leg spacing (Nm)</b>	The distance of each turn or “short” leg. This is the width between each long leg.
<b>Number of legs</b>	The number of “long” legs. Ignored if an aviation point is entered in the <b>Initial DTK (true) / End at</b> field rather than a numeric heading.
<b>Desired cruise alt (MSL)</b>	

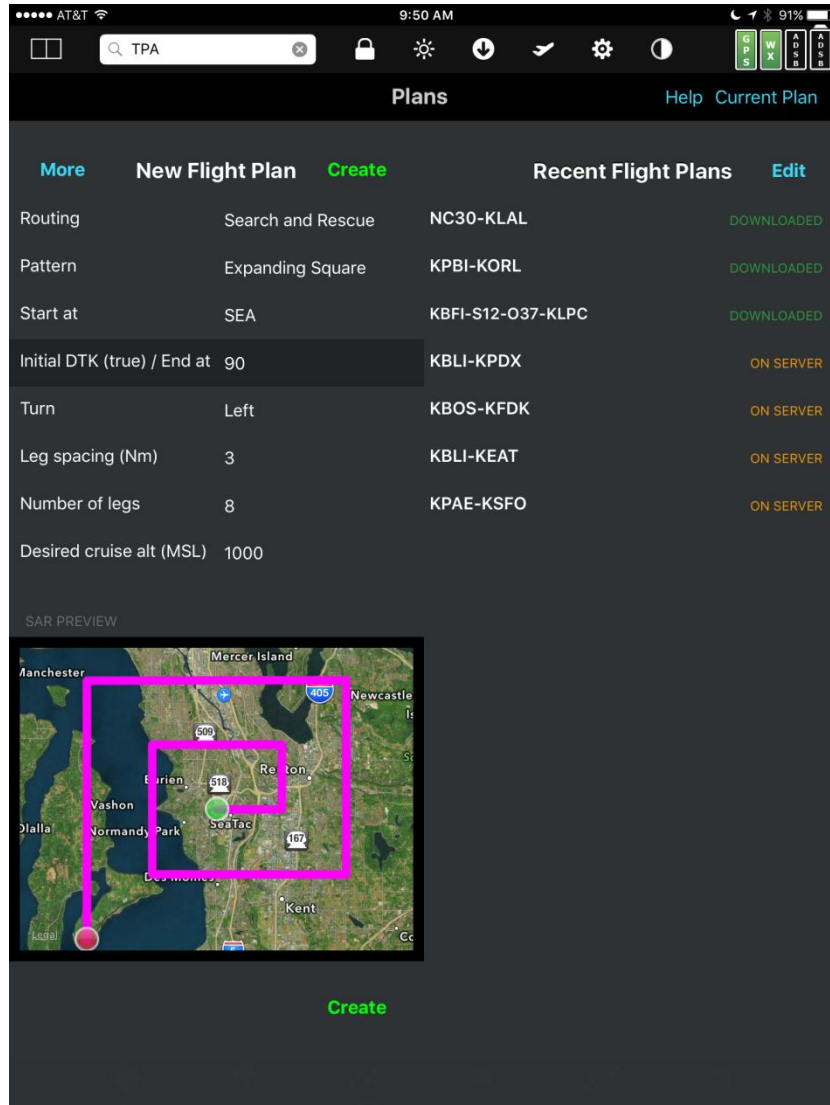
## Sector



Parameter	Function/Values
<b>Start at</b>	A standard aviation named point (airport, navaid, etc.), lat/lon, grid reference, navaid with relative distance and bearing, or navaid/navaid intersection. See the <i>Waypoint Entry</i> appendix for details about how to enter these points.
<b>Initial DTK (true) / End at</b>	Enter either a true course (0-360 degrees) or a named aviation point.  If a named aviation point is used, FlyQ EFB automatically calculates the proper DTK.
<b>Turn</b>	Either <i>Right</i> or <i>Left</i> turns
<b>Leg length (Nm)</b>	The distance of each “long” leg.
<b>Desired cruise alt (MSL)</b>	



## Expanding Square

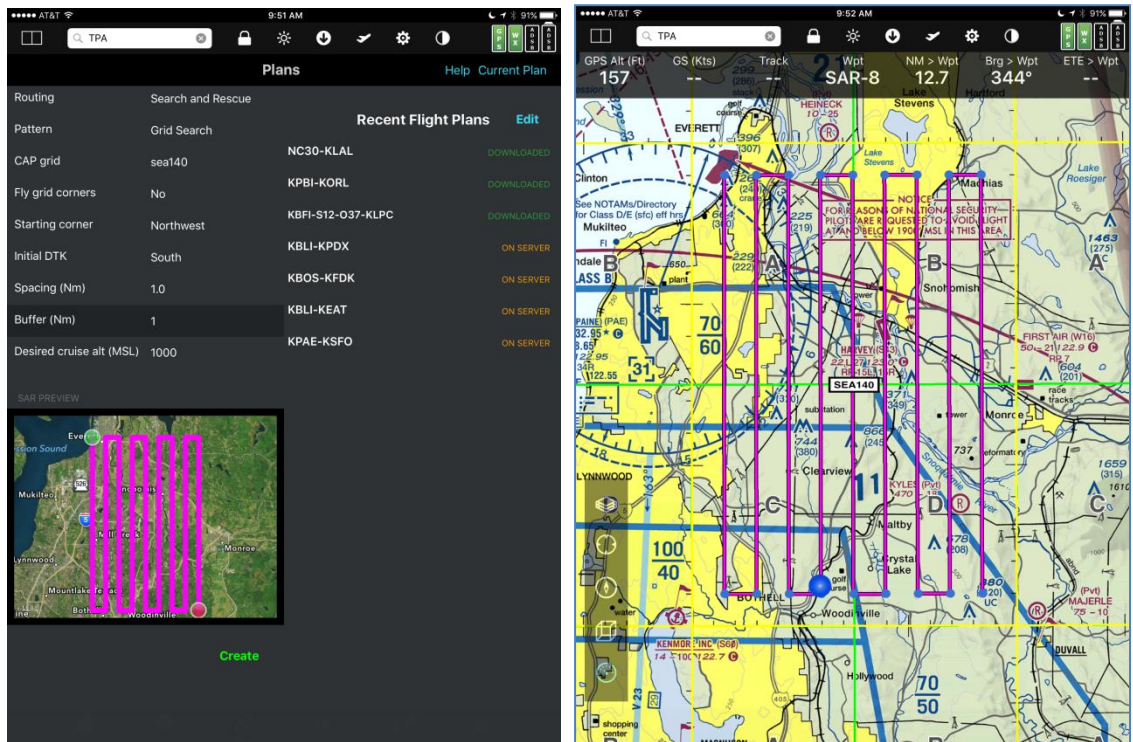


Parameter	Function/Values
<b>Start at</b>	A standard aviation named point (airport, navaid, etc.), lat/lon, grid reference, navaid with relative distance and bearing, or navaid/navaid intersection. See the <i>Waypoint Entry</i> appendix for details about how to enter these points.
<b>Initial DTK (true) / End at</b>	Enter either a true course (0-360 degrees) or a named aviation point.  If a named aviation point is used, FlyQ EFB automatically calculates the proper DTK and also the correct number of legs to reach that point (up to a maximum of 100

	points).
<b>Turn</b>	Either <i>Right</i> or <i>Left</i> turns
<b>Leg spacing (Nm)</b>	The distance of each turn or “short” leg. This is the width between each long leg.
<b>Number of legs</b>	The number of “long” legs. Ignored if an aviation point is entered in the <b>Initial DTK (true) / End</b> at field rather than a numeric heading.
<b>Desired cruise alt (MSL)</b>	

## Grid Search

**Note:** The *Grid Search* pattern is a specialized version of a parallel search that has been optimized for searches within one grid cell.

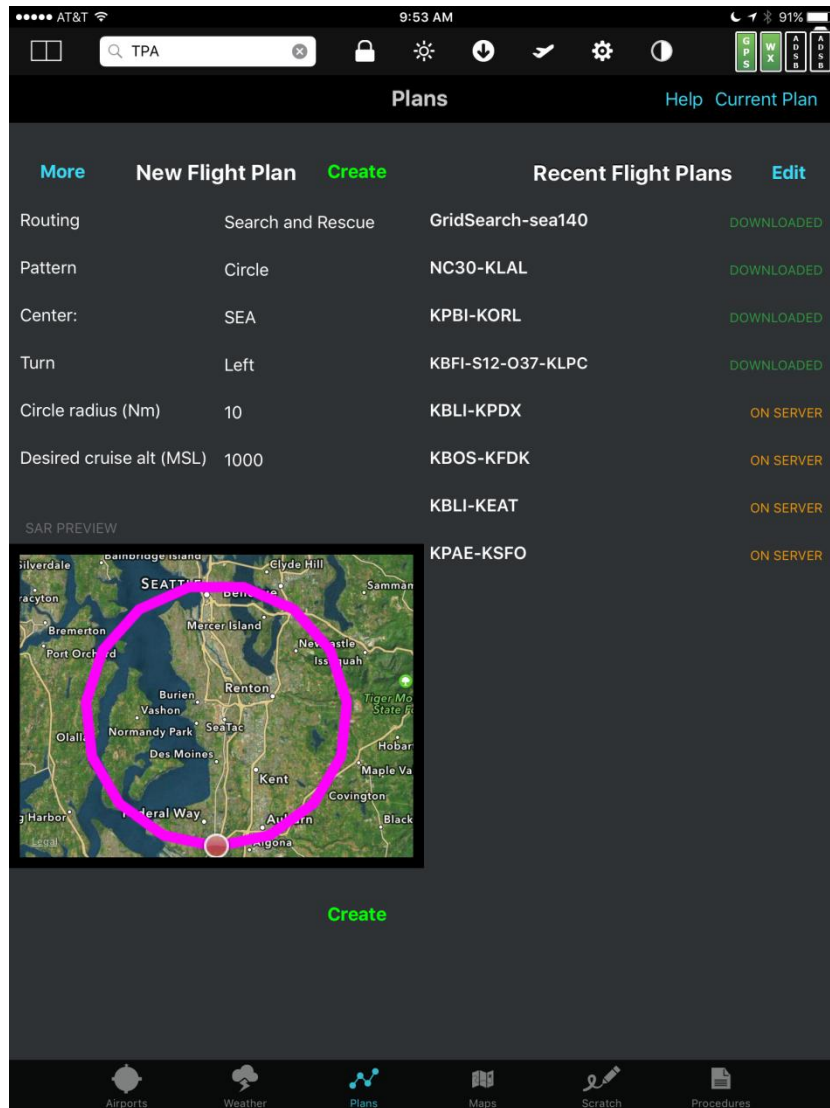


Parameter	Function/Values
<b>CAP grid</b>	<p>Unlike other search patterns, this search is optimized for grid cells so only accepts grid references. The grid may be a CAP (Gridded Sectional), Cell, or GARS grid. You may use as many levels as you like (e.g. <i>SEA140</i>, <i>SEA140C</i>, etc.).</p> <p>In this one case, grid suffixes (<i>NW</i>, <i>NE</i>, <i>SE</i>, and <i>SW</i>) are ignored because the pattern has a <b>Starting corner</b> parameter that does the same thing.</p>
<b>Fly grid corners</b>	<p>When selected, FlyQ EFB generates a series of four points that represent the four corners of the grid. These points are added before the rest of the pattern and make it easy to begin with a quick overflight before starting the pattern.</p>
<b>Starting corner</b>	<p>Selects which grid corner is the start of the route. <i>Northwest</i>, <i>Northeast</i>, <i>Southeast</i>, or <i>Southwest</i>.</p>

<b>Initial DTK</b>	Choice of <i>North, South, East, or West</i> . Note that the choice of <b>Starting corner</b> limits which Initial DTK selections are valid. <b>Preview</b> displays <i>Invalid</i> if you select an <b>Initial DTK</b> that is incompatible with the <b>Starting corner</b> (in order to stay within the grid).
<b>Leg length (Nm)</b>	The distance of each “long” leg.
<b>Spacing (Nm)</b>	The distance of each turn or “short” leg. This is the width between each long leg.  This value implicitly specifies the number of legs as the number of legs is the maximum number of legs that will fit within the grid cell with the specified <b>Spacing</b> .
<b>Buffer (Nm)</b>	For safety or other reasons you may specify a buffer (or border, if you prefer) within each grid cell. When non-zero, the pattern is constrained to fit inside the grid cell after subtracting the size of the border from each of the four sides.
<b>Desired cruise alt (MSL)</b>	

## Circle

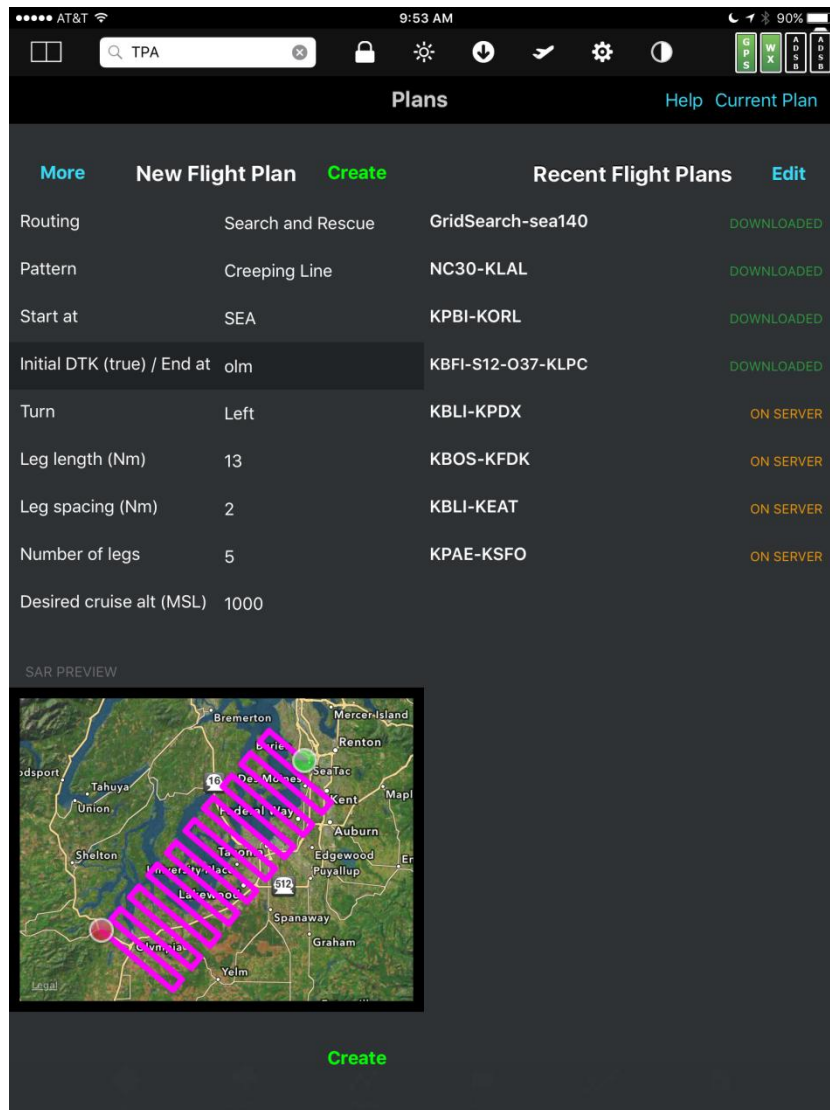
**Note:** There are two circular patterns, *Circle* and *Circle (Photographic)*. For normal CAP flights, *Circle* should generally be used. *Circle (Photographic)* is designed for missions that require a camera to be mounted at a 45 degree angle so the radius of the circle is locked to the desired AGL.



Parameter	Function/Values
Center	A standard aviation named point (airport, navaid, etc.), lat/lon, grid reference, navaid with relative distance and bearing, or navaid/navaid intersection. See the <i>Waypoint Entry</i> appendix for details about how to enter these points.
Turn	Either <i>Right</i> or <i>Left</i> turns
Circle radius (Nm)	
Desired cruise alt (MSL)	

## Creeping Line

**Note:** *Creeping Line* and *Parallel Track* are almost identical. The difference is that the first leg of a *Creeping Line* pattern is half the length of all other legs so the pattern effectively sweeps left and right from the starting point. A *Parallel Track*, by contrast, has all legs of equal length so search begins at the starting point on one end of the corridor rather than the center.

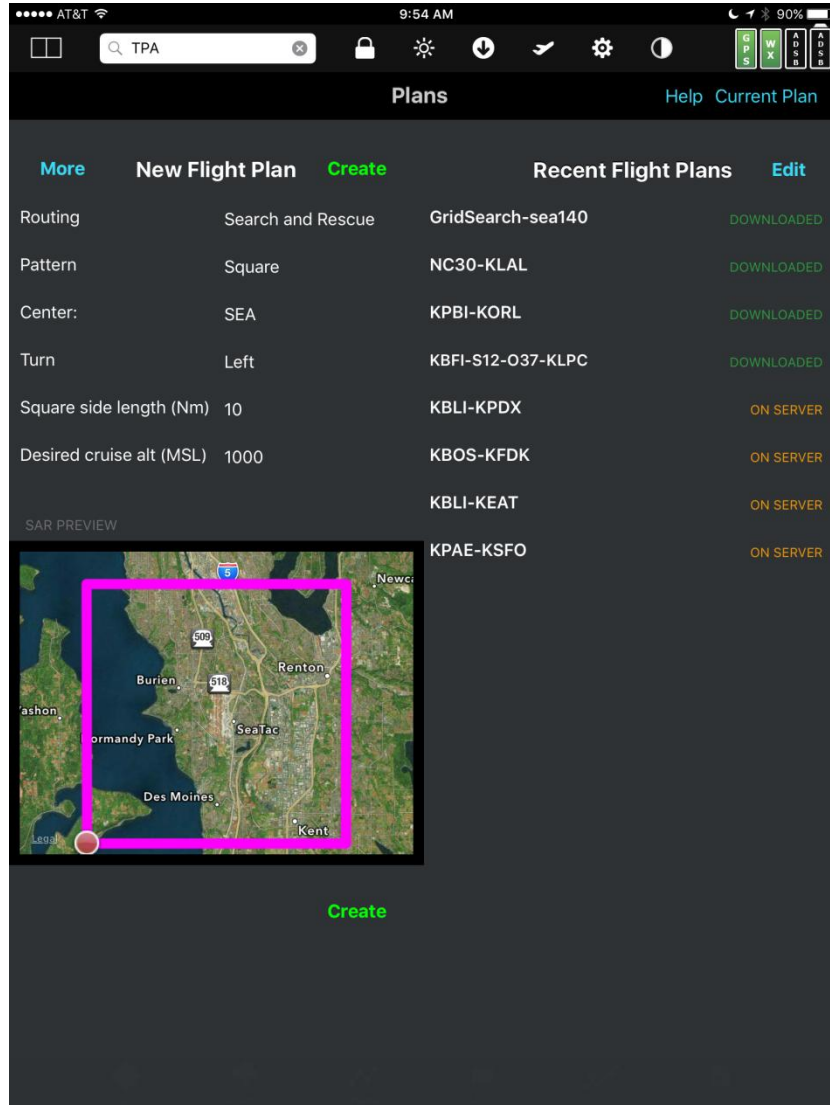


Parameter	Function/Values
<b>Start at</b>	A standard aviation named point (airport, navaid, etc.), lat/lon, grid reference, navaid with relative distance and bearing, or navaid/navaid intersection. See the <i>Waypoint Entry</i> appendix for details about how to enter these points.
<b>Initial DTK (true) / End at</b>	Enter either a true course (0-360 degrees) or a named aviation point.

	If a named aviation point is used, FlyQ EFB automatically calculates the proper DTK and also the correct number of legs to reach that point (up to a maximum of 100 points).
<b>Turn</b>	Either <i>Right</i> or <i>Left</i> turns
<b>Leg length (Nm)</b>	The distance of each “long” leg.
<b>Leg spacing (Nm)</b>	The distance of each turn or “short” leg. This is the width between each long leg.
<b>Number of legs</b>	The number of “long” legs. Ignored if an aviation point is entered in the <b>Initial DTK (true) / End</b> at field rather than a numeric heading.
<b>Desired cruise alt (MSL)</b>	

## Square

**Note:** There are two square patterns, *Square* and *Square (Photographic)*. For normal CAP flights, *Square* should generally be used. *Square (Photographic)* is designed for missions that require a camera to be mounted at a 45 degree angle so the square side length is locked to the desired AGL.

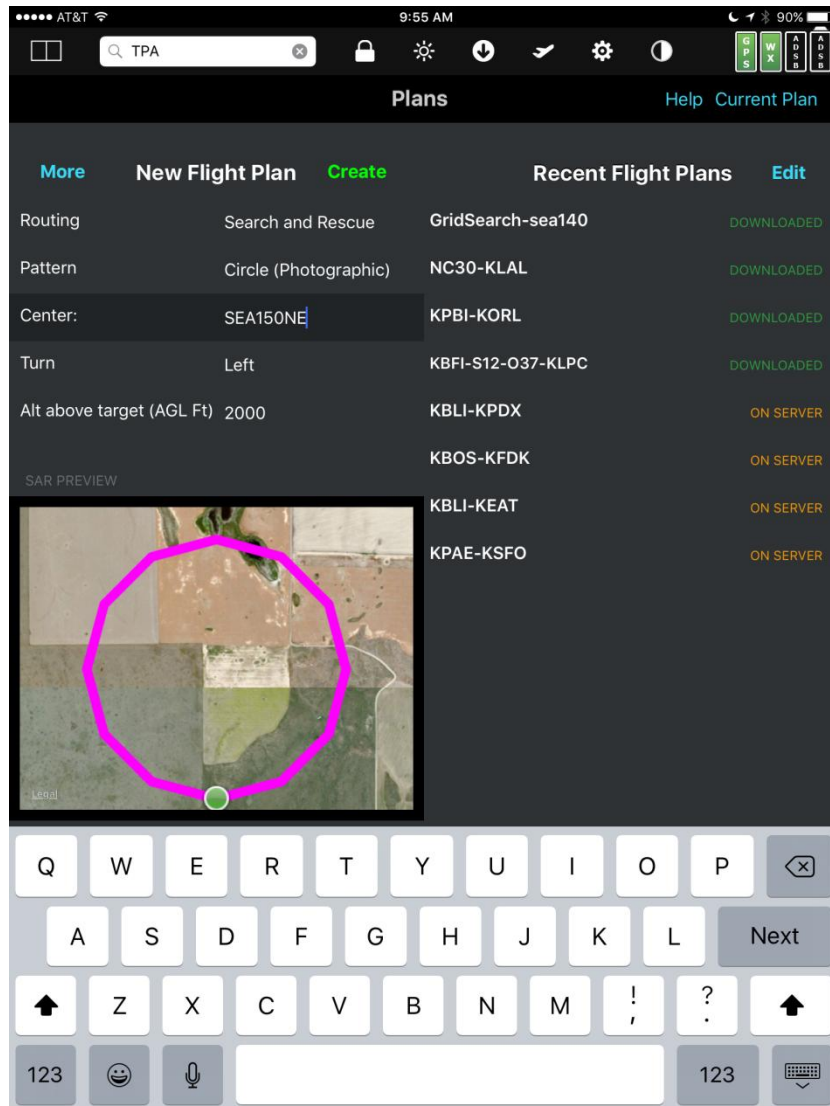


Parameter	Function/Values
Center	A standard aviation named point (airport, navaid, etc.), lat/lon, grid reference, navaid with relative distance and bearing, or navaid/navaid intersection. See the <i>Waypoint Entry</i> appendix for details about how to enter these points.
Turn	Either <i>Right</i> or <i>Left</i> turns
Square side length (Nm)	The distance of each leg.
Desired cruise alt (MSL)	



## Circle (Photographic)

**Note:** There are two circular patterns, *Circle* and *Circle (Photographic)*. For normal CAP flights, *Circle* should generally be used. *Circle (Photographic)* is designed for missions that require a camera to be mounted at a 45 degree angle so the radius of the circle is locked to the desired AGL.



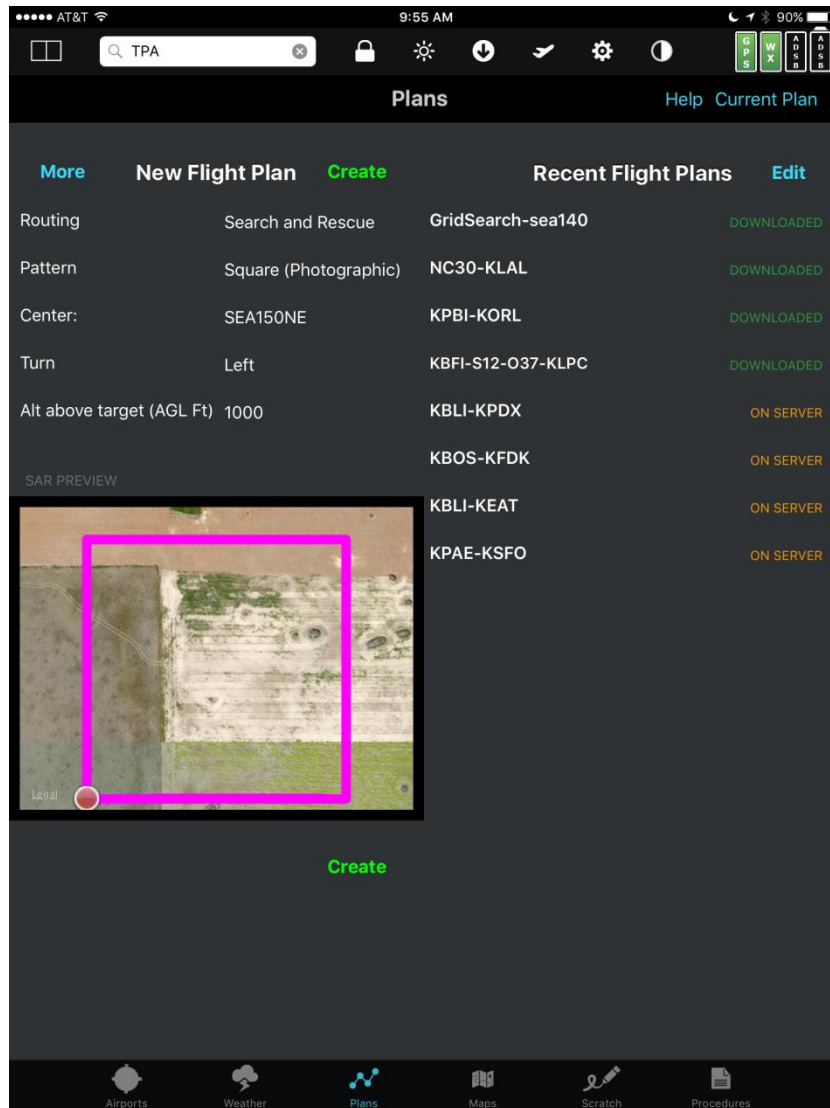
Parameter	Function/Values
<b>Center</b>	A standard aviation named point (airport, navaid, etc.), lat/lon, grid reference, navaid with relative distance and bearing, or navaid/navaid intersection. See the <i>Waypoint Entry</i> appendix for details about how to enter these points.
<b>Turn</b>	Either <i>Right</i> or <i>Left</i> turns
<b>Alt above target (AGL Ft)</b>	The altitude above the surface elevation at the <b>Center</b> point. This value determines

both the flying altitude (in MSL) and the radius of the circle. For example, **Alt above target** of 2000 means the radius of the search is also 2000 ft. This allows a camera to be mounted at a standard 45 degree angle and remain at a constant angle to the target.

**Important!** No attempt is made to calculate a safe altitude for all points around the circle as the MSL is calculated strictly as the elevation of the target plus the desired AGL. Pilots should be extremely cautious to remain at a safe AGL at all points during the flight, especially in places of varied elevation or obstacles. An initial safety pass over the area is strongly suggested.

## Square (Photographic)

**Note:** There are two square patterns, *Square* and *Square (Photographic)*. For normal CAP flights, *Square* should generally be used. *Square (Photographic)* is designed for missions that require a camera to be mounted at a 45 degree angle so the square side length is locked to the desired AGL.



Parameter	Function/Values
<b>Center</b>	A standard aviation named point (airport, navaid, etc.), lat/lon, grid reference, navaid with relative distance and bearing, or navaid/navaid intersection. See the <i>Waypoint Entry</i> appendix for details about how to enter these points.
<b>Turn</b>	Either <i>Right</i> or <i>Left</i> turns
<b>Alt above target (AGL Ft)</b>	The altitude above the surface elevation at the <b>Center</b> point. This value determines

both the flying altitude (in MSL) and the length of each side of the square. For example, **Alt above target** of *2000* means the leg length is also *2000* ft.

**Important!** No attempt is made to calculate a safe altitude for all points around the square as the MSL is calculated strictly as the elevation of the target plus the desired AGL. Pilots should be extremely cautious to remain at a safe AGL at all points during the flight, especially in places of varied elevation or obstacles. An initial safety pass over the area is strongly suggested.

## Tips and Tricks

### Adding Takeoff and Landing Legs to a SAR Pattern

The current version of FlyQ EFB does not allow you to append or otherwise add a SAR pattern to an existing flight plan. However, it's quite easy to create a flight plan that begins at any airport, flies to the beginning of the pattern, flies the pattern, and then returns home:

- Create the SAR (Search and Rescue) pattern as above.
- In the **Search** box at the top of the app, enter the ident or name of any takeoff point such as your home airport.
- Tap the **+FP** button in the search results.
- Tap the first row in the pop-up that shows the SAR plan. This adds your takeoff point before the first point in the SAR plan.
- Go back up to the **Search** box and enter your landing ident.
- Tap the **+FP** button in the search results.
- Tap **Add to end** in the pop-up that shows the SAR plan. This adds your landing point to the end of the plan.

### Flying the Pattern Slower Than a Normal Flight

FlyQ EFB uses your default aircraft profile to calculate performance unless otherwise told. Typically a SAR pattern is flown slower than a normal flight. To fly the SAR pattern slower:

- Create a new aircraft profile with different TAS and fuel values by going to **Settings**, tapping **Aircraft profiles**, and tapping **New**.
- When creating the SAR pattern, tap the **More** button at the upper left of the **New Flight Plan** area. That shows several additional data entry fields, including a choice of **Aircraft**. Select the slower profile you just created.
- Continue creating the SAR pattern in the usual way.

### Personal Waypoints

A Personal Waypoint is a specific latitude/longitude that you can name for later reuse. It can be displayed on the map and used in flight plans. Personal Waypoints are automatically synchronized between all your iPads and iPhones running FlyQ EFB.

You can create and name Personal Waypoints in several different ways:

- On the map, double-tap anywhere and hit the **+WPT** button next to the latitude/longitude entry.
- In the **Search Box**, type a latitude/longitude, navaid or fix with a radial and distance, or intersection of two nav aids then hit the **+WPT** button. See *Entering Latitude/Longitude Points* elsewhere for data entry format.
- In **Settings**, select **Personal Waypoints** to create, edit, or delete Personal Waypoints.
- Tap the **Position** gauge on the **Gauge Bar** on the map to add a new Personal Waypoint at the current location.

A Personal Waypoint has a short **Ident** with no spaces and an optional **Name** that may include spaces. The **Ident**, like a navaid ident, is used when entering a flight plan in the **Search Box** using a Personal Waypoint. The **Name** may not be used for planning a flight and is generally used for clarification when displayed on a map.

**Tip:** To see a new Personal Waypoint on the map, be sure to turn the **Personal Wpts** map layer on. The **Personal Wpts** layer is not automatically turned on when a Personal Waypoint is created.

The Ident of a Personal Waypoint can be used to create flight plans via the **Search Box** at the top of the app.

Personal Waypoints may be displayed with their **Idents** (and **Names**, if they have them) or simply as flag markers. The flag markers are ideal when there are many Personal Waypoints in very close proximity to each other. Control the display format by changing **Always show obstacle detection area** in **Settings**.

Go to **Settings, Personal Waypoints** to create, edit, and delete Personal Waypoints.

### Suggested Preflight Setup

Before you fly, we suggest the following as a way to make sure that other apps aren't using memory which could affect FlyQ:

#### 1. Restart FlyQ EFB

- Press the **Home** button on the device (the one physical button on the front) to get to the home screen.
- Double-press the **Home** button to bring up the list of running apps at the bottom of the screen. You should see FlyQ EFB.
- Find the "card" that shows FlyQ EFB and swipe it up, as if you were flicking something away. This closes FlyQ EFB.
- Press **Home** again to hide the list of running apps.
- Start FlyQ EFB again by tapping its icon.

#### 2. Reboot your iPad or iPhone

- Press and hold the **Power** switch (side or top of the device) and the **Home** button (on the face of the iPad/iPhone) for a few seconds. If you do this right, the device will shut down immediately with no further prompts. **Note:** For the iPhone X, press and hold the **Power** button at the **Volume Down** button at the same time.
- After it goes off, press the **Power** switch again to restart the device.

Then, if you're using an external ADS-B or Bluetooth GPS (like the Dual 150/160, Bad Elf, or Garmin GLO):

4. Turn **Airplane Mode** *ON* to disable all wireless features.

5. Turn just **Bluetooth** *ON* for a GPS or turn just **Wi-Fi** *ON* for most ADS-B units (except the Dual XGPS 170 or 190 which use Bluetooth).

6. For a Wi-Fi based device, connect to the Wi-Fi network with a name like your device. For a Bluetooth device, ensure that the iPad/iPhone is paired with the device.

### FlyQ EFB cannot find my current location

When you first ran the app, the operating system asked if you wanted to allow FlyQ EFB to use **Location Services**. If you said **No**, the app would not be able to access the GPS. You can check and change this if necessary:

- On the iPad or iPhone, tap the **Settings** icon
- Tap **Privacy**
- Tap **Location Services**
- Ensure that **Location Services** is *ON*

- Find **FlyQ EFB** in the list and make sure the switch is *ON*
- You may need to kill/restart FlyQ EFB if this changed but try firing up FlyQ EFB first.

### Wi-Fi, Bluetooth, or GPS Problems

1. Confirm your iPad/iPhone has Wi-Fi (or Bluetooth as required) on.
2. Confirm the ADS-B or GPS device is on.
3. If it's a Dual XGPS unit, make sure data format switch on the device is set to *Apple* (XGPS 150/160) or the Dual XGPS 170/190 is set to *ADS-B* not *GPS* mode.
4. If the ADS-B receiver has any antennas, make sure they are tightly connected.
5. Reboot your iPad or iPhone
  - Press and hold the **Power** switch (side or top of the device) and the **Home** button (on the face of the iPad/iPhone) for a few seconds. If you do this right, the device will shut down immediately with no further prompts.  
**Note:** For the iPhone X, press and hold the **Power** button at the **Volume Down** button at the same time.
  - After it goes off, press the **Power** switch again to restart the device.
6. Reset your iPad or iPhone's network settings
  - a. Go to the **Settings** app on your iPad/iPhone
  - b. Select **General**
  - c. Select **Reset**
  - d. Select **Reset Network Settings** but be aware that the iPad/iPhone will forget any Wi-Fi passwords so make sure you know them!

If these do not work, please email [FlyQEFBsupport@seattleavionics.com](mailto:FlyQEFBsupport@seattleavionics.com) or contact your device manufacturer.

### How do I find the chart or map legends?

FlyQ's **Documents** tab includes both a general *Sectional and TAC Legend* and margin notes for all Sectionals. The general legend is loaded by default. To see Margin Notes for a Sectional, click the + button and choose **Add Document**. They are all listed in the FAA VFR Charts category.

### My approach plates are expired!

If you're checking for valid dates of the plate by looking at the side of the plate, you're being misled. The FAA prints two dates on the side of each plate. Although they look like expiration dates, they are not. They simply represent the print cycle of when that plate was last printed by the FAA. That is, even if a plate doesn't change for two years, every 28 days, it will have a new set of dates on the side. FlyQ ignores these dates and uses a database that the FAA publishes to download only the plates that really have changed or been added. Thus, even when all your plates are current, you may see 'old' dates on the side. You have to keep in mind that, unlike IFR enroute charts or



Sectionals, there is no planned expiration date for a plate -- they just update it when necessary. Thus, it's not possible for the FAA to print an expiration date on a plate since they have no idea when it might expire.

Plates do have revision info on them in the lower left corner, however. This revision info remains constant even when the date on the side changes (unless the plate really was changed, of course) but it's hard to decode as it sometimes involves what's called a Julian date. Moreover, unless you know for sure what the "current" revision info is, it doesn't help you much as there is nothing to compare it to. We all just have to rely on the FAA accurately marking plates when changed. The good news is that we've been doing this for 10 years and we've never seen them make a mistake about this.

Finally, in the **ChartData Manager**, you can tell FlyQ EFB to download all plates, even the ones that have not changed but we strongly recommend against it because it dramatically increases monthly update time.

### **Personal Waypoints do not appear on the map**

Tap the **Layers** button on the map and be sure the **Personal Wpts** map layer on. The **Personal Wpts** layer is not automatically turned on when a Personal Waypoint is created.

### **Traffic does not appear on the map although an ADS-B receiver is connected**

Tap the **Layers** button on the map and be sure the **Traffic** map layer on. The **Traffic** layer is not automatically turned on when an ADS-B receiver is connected.

### **The map is very dark**

Make sure that **Night Mode** is off. Night mode is controlled with the button on the top of the app that looks like a half black, half white circle.

Tap the **Layers** button on the map and ensure that **Satellite** is off.

### **The map is red or yellow**

Tap the **Layers** button on the map and ensure that **TAWS** is off if you're not flying.

**Tip:** You can disable TAWS when not flying, regardless of whether or not the map layer is on, via the **Only show TAWS when moving** switch in **Settings**.

### **Something else is wrong**

1. Restart FlyQ EFB

- Press the **Home** button on the device (the one physical button on the front) to get to the home screen.

- Double-press the **Home** button to bring up the list of running apps at the bottom of the screen. You should see FlyQ EFB.
- Find the "card" that shows FlyQ EFB and swipe it up, as if you were flicking something away. This closes FlyQ EFB.
- Press **Home** again to hide the list of running apps.
- Start FlyQ EFB again by tapping its icon.

## 2. Reboot your iPad or iPhone

- Press and hold the **Power** switch (side or top of the device) and the **Home** button (on the face of the iPad/iPhone) for a few seconds. If you do this right, the device will shut down immediately with no further prompts. **Note:** For the iPhone X, press and hold the **Power** button at the **Volume Down** button at the same time.
- After it goes off, press the **Power** switch again to restart the device.

## 3. Remove and re-install FlyQ EFB

**Do this only as a last resort because it will delete any data that you've already downloaded.**

- Press the **Home** button on the device (the one physical button on the front) to get to the home screen.
- On the Home screen, find the FlyQ EFB app icon.
- Press and hold the FlyQ EFB app icon until it wiggles.
- Press the **X** now appearing on the icon to remove the app.
- Confirm you wish to delete by tapping the **Delete** button.
- Press the **Home** button to stop the wiggling
- Go to the App Store on the iPad or iPhone and download/install the app again by searching for *FlyQ EFB*.