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/FlyQEFB

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

General Info
http://www.seattleavionics.com/FlyQEFB.aspx

FlyQ Overview video
https://youtu.be/GOt4tGJu78g

Pilot’s Guide (this document)

Note: Also available in the Documents tab of the app.

List of supported ADS-B systems
http://seattleavionics.com/SupportedADSB.aspx
Contents
Preface .............................................................................................................................. 2
What’s New? ...................................................................................................................... 8
  Version 4.5.2 (5/29/2020) .......................................................................................... 8
  Version 4.5.1 (4/9/2020) ......................................................................................... 8
  Version 4.5 (3/20/2020) ............................................................................................ 9
  Version 4.0.1 (9/16/2019) ........................................................................................ 9
  Version 4.0 (7/19/2019) ............................................................................................ 11
  Version 3.2.1 (9/20/2018) ....................................................................................... 11
  Version 3.2 (7/26/18) .............................................................................................. 13
  Version 3.1 (5/31/18) .............................................................................................. 13
  Version 3.0 (2/9/18) .............................................................................................. 14
  Version 2.5 .............................................................................................................. 14
  Version 2.4.4 ......................................................................................................... 15
  Version 2.4.3 ......................................................................................................... 15
  Version 2.4 .............................................................................................................. 16
  Version 2.3.2 ......................................................................................................... 17
  Version 2.3.1 ......................................................................................................... 17
  Version 2.3 .............................................................................................................. 17
  Version 2.2 .............................................................................................................. 17
Overview ......................................................................................................................... 19
iPad Versus iPhone .......................................................................................................... 19
The Big Picture .............................................................................................................. 20
  Top Buttons .......................................................................................................... 20
  Tabbar .................................................................................................................. 20
  Main Area ............................................................................................................ 20
Top Buttons ................................................................................................................... 21
Single Screen and Split Screen ..................................................................................... 22
  Single Screen ....................................................................................................... 22
  Split Screen ....................................................................................................... 22
Map Types ................................................................................................................... 23
  2D ...................................................................................................................... 23
  3D Synthetic Vision ............................................................................................ 23
  Augmented Reality (AR) ...................................................................................... 23
The 2D Map ................................................................. 24
The Map Bar ........................................................... 25
Gauge Bar .............................................................. 29
The 3D (Synthetic Vision) Map ...................................... 31
Map Bar .............................................................. 32
The Augmented Reality Map ........................................ 34
  What is Augmented Reality? ..................................... 34
  Using AR ............................................................. 35
  Accuracy and Calibration ........................................ 35
  Map Bar .............................................................. 38
Status Indicators ........................................................ 40
  GPS ................................................................. 41
  Weather ............................................................ 42
  ADS-B ............................................................... 43
  Flight Recorder .................................................... 44
  Built-in Simulator .................................................. 47
Getting Info ............................................................. 48
  Airports on Your Flight Plan ..................................... 50
  Search Box .......................................................... 50
  Double-Tap the Map for Airports, Navaids, Fixes and TFRs ................................. 53
  Distance and Bearing between Any Two Points ......................... 55
  Distance and Time Rings ......................................... 56
  Extended Courseline .............................................. 57
  Terrain and Obstacle Warnings .................................. 59
Approach Procedures .................................................. 61
  Using Procedures .................................................. 62
Documents .............................................................. 67
  Viewing a Document ............................................. 68
  Adding Documents ............................................... 69
  Organizing Documents .......................................... 74
  Creating and Managing Private Groups and Documents ......................... 77
Flight Plans ............................................................ 78
  Creating a flight plan ............................................. 78
Loading a Previously Created Plan .................................................................................. 89
The NavLog ..................................................................................................................... 90
Weather Briefing ............................................................................................................ 93
File a Flight Plan ........................................................................................................... 94
ADS-B ............................................................................................................................. 95
ADS-B Traffic Limitations .............................................................................................. 96
Traffic in FlyQ EFB .......................................................................................................... 97
Supported ADS-B Devices .............................................................................................. 101
Connecting an ADS-B System ....................................................................................... 101
Weather ........................................................................................................................... 103
ADS-B or Internet ............................................................................................................ 103
On the Map ..................................................................................................................... 103
For an Airport .................................................................................................................. 113
Nearby Weather .............................................................................................................. 114
Graphical Wind Optimizer .............................................................................................. 114
Weather Gallery .............................................................................................................. 115
Visual Logbook ............................................................................................................... 116
Lists ................................................................................................................................. 116
Flight Details ................................................................................................................... 119
Search (Filtering) ............................................................................................................ 125
Profile .............................................................................................................................. 126
Reporting .......................................................................................................................... 127
Visualization Heat Map .................................................................................................. 129
Playback ........................................................................................................................... 130
The Floq Network ............................................................................................................ 132
Privacy ............................................................................................................................. 132
Friends .............................................................................................................................. 133
Likes and Comments ....................................................................................................... 135
Sharing with Other Social Networks ............................................................................. 136
CFI and Student Pilot Endorsements .............................................................................. 137
Following a Student Pilot ............................................................................................... 138
Granting an Endorsement Remotely .............................................................................. 138
Granting an Endorsement from a Student’s iPad/iPhone ............................................... 138
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endorsements Screen</td>
<td>139</td>
</tr>
<tr>
<td>Profile and Reports</td>
<td>140</td>
</tr>
<tr>
<td>Scratchpad</td>
<td>141</td>
</tr>
<tr>
<td>Downloading Data</td>
<td>142</td>
</tr>
<tr>
<td>Preflight Checklist</td>
<td>142</td>
</tr>
<tr>
<td>Monthly ChartData</td>
<td>143</td>
</tr>
<tr>
<td>Slingshot Wireless ChartData Transfer</td>
<td>146</td>
</tr>
<tr>
<td>External Devices and Applications</td>
<td>147</td>
</tr>
<tr>
<td>Dynon SkyView and AFS AF-5xxx Series</td>
<td>147</td>
</tr>
<tr>
<td>Avidyne IFD440, 540, and 550</td>
<td>149</td>
</tr>
<tr>
<td>BendixKing xVue and AeroVue Touch</td>
<td>151</td>
</tr>
<tr>
<td>Aspen Connected Panel</td>
<td>152</td>
</tr>
<tr>
<td>X-Plane Flight Simulator</td>
<td>153</td>
</tr>
<tr>
<td>Microsoft Flight Simulator / Prepar3D</td>
<td>153</td>
</tr>
<tr>
<td>Other Simulators</td>
<td>153</td>
</tr>
<tr>
<td>GPS</td>
<td>154</td>
</tr>
<tr>
<td>AHRS</td>
<td>154</td>
</tr>
<tr>
<td>Settings</td>
<td>156</td>
</tr>
<tr>
<td>Help</td>
<td>156</td>
</tr>
<tr>
<td>Display</td>
<td>157</td>
</tr>
<tr>
<td>ADS-B / Devices</td>
<td>159</td>
</tr>
<tr>
<td>Flight Planning</td>
<td>162</td>
</tr>
<tr>
<td>Defaults (within the Flight Planning category)</td>
<td>163</td>
</tr>
<tr>
<td>Preferences</td>
<td>163</td>
</tr>
<tr>
<td>Alerts</td>
<td>166</td>
</tr>
<tr>
<td>FlyQ Login</td>
<td>166</td>
</tr>
<tr>
<td>Waypoint Entry</td>
<td>167</td>
</tr>
<tr>
<td>Latitude/Longitude</td>
<td>167</td>
</tr>
<tr>
<td>Relative Bearings</td>
<td>167</td>
</tr>
<tr>
<td>Intersection of Two Radials</td>
<td>167</td>
</tr>
<tr>
<td>CAP Grid References</td>
<td>168</td>
</tr>
<tr>
<td>Entering Waypoints to Create a Flight Plan</td>
<td>168</td>
</tr>
<tr>
<td>Search and Rescue (CAP)</td>
<td>169</td>
</tr>
</tbody>
</table>

What's New?

Version 4.5.2 (5/29/2020)
New Features and Improvements

- ADDED: Radar colors can be optionally displayed using colors ideal for those with color blindness

- CHANGED: The Tabbar at the bottom of the screen now much easier to read (iPad only)

Fixes / Changes

- FIXED: Radar and Timeline do not automatically advance as time passes when in pre-flight mode (works fine with ADS-B)
- FIXED: ADS-B crash when processing some Alaskan weather
- FIXED: ADS-B crashes in rare cases with SkyRadar and Dynon ADS-B receivers
- FIXED: Timeline does not always stay off after being manually turned off
- FIXED: METAR/TAF decoder does not handle some Visibility conditions
- FIXED: SA Airport Diagrams not always displayed properly on the Map
- FIXED: Multiple minor display issues on some iPhones
- FIXED: The Map button on the Plans tab does not always function
- FIXED: Obstacle layer does not restore after switching from 2D to 3D and back
- FIXED: New DAU type procedures (RNAV DP) do not always appear
- FIXED: Plans/Wind Optimizer improperly adjusts TAS
- FIXED: Rubber-banding a flight plan may not set the correct cardinal altitude
- FIXED: Ownship is not always suppressed as an ADS-B target even when the tail number is entered
- FIXED: Multiple minor display issues when using Dark Mode
- FIXED: Surface Winds arrow colors not consistent with the Legend in all places
- FIXED: Rare crash when tapping +FP
- FIXED: Searching for some airports by name fails
- FIXED: The Weather Status indicator sometimes shows the wrong color
- FIXED: Some Piper ICAO designations incorrect
- FIXED: Flights tab sometimes fails to show some flights
- FIXED: Airspace COMM frequencies missing in some cases
- FIXED: Gauge Bar items can overlap in some cases
- CHANGED: Slight revision to the Weather Legend to clarify that Cloud Tops may be cumulous cloud tops
- FIXED: Fixed various crashing bugs and made performance improvements

Version 4.5.1 (4/9/2020)

Fixes / Changes

- FIXED: Crash on Alaskan ADS-B radar
• FIXED: Crash when selecting certain SIDs or STARs
• FIXED: Crash when selecting a Flight without a track
• FIXED: Crash if Camera is not enabled in AR view
• FIXED: PIREP date display not formatted correctly
• FIXED: Icing layer does not refresh correctly on some Timeline movements
• CHANGED: Legend improved to clarify AGL vs MSL and simplify Cloud Bases range
• FIXED: HITS boxes not always displayed properly in 3D view
• FIXED: Traffic ring does not move unless ADS-B traffic is present

Version 4.5 (3/20/2020)
New Features and Improvements

• ADDED: Multiple new weather layers from the Internet including Lightning, Cloud Tops, Cloud Bottoms, Icing, Turbulence, Surface Analysis, Surface Winds, and PIREPs
• ADDED: Support for new ADS-B weather products: Lightning, Icing, Turbulence, Cloud Tops, and PIREPs
• ADDED: Timeline to see how weather has changed in the past or is expected to change in the future
• ADDED: Altitude Slider to see how weather changes at different altitudes
• ADDED: Flyway Charts for VFR flying

Fixes / Changes

• FIXED: Multiple iOS 13 related issues
• FIXED: METAR translation issue with certain weather phenomena
• FIXED: Misc. other fixes and improvements

Version 4.0.1 (9/16/2019)

Fixes / Changes

• FIXED: About 50 crashing and potentially crashing bugs
• FIXED: Avidyne: Multiple issues: Sending flight plans from FlyQ -> to the IFD, IFD -> FlyQ, and general connectivity problems.
• FIXED: Plans: While offline, edits to flight plans do not save
• FIXED: Documents: List is empty if app started while not connected to the Internet
• FIXED: Flights: Various problems with + to add a new Flight entry
• FIXED: Flights: Manually entered or imported log book entries appear to have the wrong date in Flight Details
• FIXED: Slingshot: Inop
• FIXED: 3D: "Tape" display for both Alt and GS does not show correct data in some cases
• FIXED: iPad Pro 12.9 inch: Various layout and crash issues
• FIXED: iPhone: Various layout issues
• FIXED: iPhone: Issues selecting and entering Search and Rescue patterns
• FIXED: iPhone: Adding a Layover makes it impossible to select items on the bar below the Plan summary area
• FIXED: Plans: In Plans/Edit, the + button does not add new line fillers between all existing points
• FIXED: Plans: Changing the default Pilot is not reflected when creating a new flight plan
• FIXED: Plans: Reversing a flight plan in some cases causes a blank flight plan
• FIXED: Plans: Crash when editing the name of an entry in the NavLog if the name is a lat/lon point
• FIXED: Plans: Fixes and navaids not properly added to the flight plan when idents are not unique (i.e. same ident used in US and Mexico)
• FIXED: Map: Switching from Split to Single screen Landscape may confuse the Map gauge bar in certain cases
• FIXED: Map: Map layers do not all properly initialize if turned on when app starts
• FIXED: Map: Map orientation may change from North Up if you jump the map to a new position such as an airport
• FIXED: Map: 2D Map Layers will not be saved properly if the app closes while in 3D mode
• FIXED: Documents: Various problems with adding Documents not in the Library (photos, URLs, etc.)
• FIXED: ADS-B: Connecting to a Bluetooth ADS-B receiver does not automatically turn on the Traffic layer
• FIXED: ADS-B: Rare case of ADS-B target appearing on the ground when actually in flight
• FIXED: Wx: METAR translator does not handle the case of temp w/o dew point and "in the vicinity" correctly
• ADDED: Flights: Recorder now remembers the type (SEL, MEL, SES, etc.) of the default aircraft when adding new flight records
• ADDED: Flights: Remarks shows full screen details on tap to accommodate long text entries
• FIXED: Flights: Multiple problems with Like popup
• FIXED: Flights: Various scroll position/sorting problems in the Flights list after an edit or sync
• FIXED: Flights: Swiping left on a line item in Data incorrectly shows Delete
• FIXED: Flights: Comments and Likes do not always appear
• FIXED: Flights: Changing flight date not obvious (is white when should be blue in Edit mode)
• FIXED: Flights: Changing flight date does not work all the time
• FIXED: Flights: Changed flight date not represented corrected on the flight details page nor sorted correctly in the list
• FIXED: Flights: Sizing and cropping a Profile image does not always work correctly
• FIXED: Flights: Changes to a Profile image do not always save
• FIXED: Airports: Surface wind arrows are not consistently shown using the user’s selected units (i.e. MPH vs Kts)
• FIXED: Airports: The “star” (Favorites) icon in Airports is always blue (on) even when not a favorite
• ADDED: Settings: New switch to enable/disable showing the "Send to Aspen" option in the NavLog
• FIXED: Sim: Turning the Sim off causes a minor UI problem when playing a Flight

Version 4.0 (7/19/2019)

New Features and Improvements

• ADDED: Visual Logbook
• ADDED: Introducing Floq, the private, pilot-only social network
• ADDED: Endorsements between CFI’s and student pilots

Fixes / Changes

• ADDED: Notifications on some user events and general events
• ADDED: Users can select the width of the Track line
• ADDED: Added aircraft info for Topaz KR-30, Vashon Ranger, and Beech BT36
• CHANGED: Made user email/password read-only in Settings and requires a Logout to change
• FIXED: Runs out of memory during ChartData Updates
• FIXED: Various problems with ChartData updates
• FIXED: Maps may be blurry even if downloaded if they are expired
• FIXED: Crash with uAvionics ADS-B receivers after firmware update
• FIXED: A rare crash with the Stratus 3
• FIXED: iPhone: Multiple problems if the tab order is changed
• FIXED: Arithmetic overflow error when creating some flight plans
• FIXED: Display not optimal for iPad Pro
• FIXED: Using +WPT while rubber-banding a flight plan causes various problems
• FIXED: Several problems with flight recorder playback
• FIXED: Flight recorder often breaks one flight into many pieces and other problems
• FIXED: Helicopter filter inconsistent
• FIXED: Crash on entering personal waypoints in some cases
• FIXED: Flight Recorder starts even when auto-record is off
• FIXED: Sports TFR text out of date
• FIXED: FlyQ Online rubber-band feature does not always work
• FIXED: FlyQ Online A/FD documents do not always appear

Version 3.2.1 (9/20/2018)

New Features and Improvements
• ADDED: Optionally displays tail numbers of ADS-B targets
• ADDED: New ADS-B “Buddy list” highlights your friends’ planes
• ADDED: Detailed display of ADS-B target info when you single-tap one or more ADS-B targets on the map
• ADDED: Automatically turns on the map’s Traffic layer when connected to an ADS-B system

Fixes / Changes

• FIXED: Does not display Colorado charts properly and downloading Colorado could affect all maps at certain zoom levels
• FIXED: In rare cases, the main ChartData navigational database (airports, etc.) gets corrupted and unusable with missing airports, navaids, etc.
• FIXED: Does not display all ADS-B radar correctly in rare cases
• FIXED: Sometimes the app does not restore previously selected map layers at app startup
• FIXED: Substantial reliability and performance improvements when using the ChartData Manager
• FIXED: ChartData Manager downloaded percent numbers are sometimes wrong
• FIXED: In the ChartData Manager, the IFR High switch is reset to off during every app update
• FIXED: Memory leak causes crashes when downloading data for many states
• FIXED: Send/Receive reversed for Avidyne IFD
• FIXED: Documents fail to sync when added or at startup in some situations
• FIXED: Personal Waypoints and AIRMET/SIGMET layers do not show properly at startup
• FIXED: iPhone only: Done button on a Document goes to the wrong screen
• FIXED: Slingshot now provides the Certified Plates file for certified avionics
• FIXED: Document drag/drop into folders does not work
• FIXED: Reversing flight plans does not reload the plan on the map in all cases
• FIXED: Recorder sometimes starts new tracks rather than create one contiguous track
• FIXED: Multiple problems decoding certain latitude/longitude strings
• FIXED: Gauges not always updated on flight plan change
• FIXED: Tap into the Search field on the iPhone version does not behave as expected to position the cursor
• FIXED: Recorder does not play tracks properly when the Tracks layer is off
• FIXED: Multiple problems with the integrated Simulator
• FIXED: ADS-B Battery indicator always flashes with Lynx and Echo ADS-B systems
• CHANGED: Move all the ADS-B Setting options to one category (“ADS-B / Other Devices”)
• CHANGED: Use internal or external GPS when not getting track or speed from Avidyne
• CHANGED: Double-tap on closed airports now shows info about the airport
- CHANGED: Background color on ADS-B Connect/Disconnect too hard to see
- CHANGED: Slingshot now OFF by default to save battery life
- KNOWN ISSUE: Slow memory leak in the ChartData Manager may cause a crash after a very large number of states are downloaded

**Version 3.2 (7/26/18)**

**New Features and Improvements**

- ADDED: Slingshot wireless ChartData delivery system for certified and experimental MFDs
- ADDED: Support for the Appaero Stratus 3 ADS-B receiver
- FIXED: Problem sending flight plans to Avidyne
- FIXED: Various minor fixes

**Version 3.1 (5/31/18)**

**New Features and Improvements**

- ADDED: Automatic fuel stop planning based on cost
- ADDED: Automatically finds and uses recently approved ATC routes (IFR plans only)
- ADDED: Full support for iOS 11 and iPhone X
- ADDED: Layout time planning for fuel stops
- ADDED: Set the default flight plan routing method and whether or not to add fuel

**Fixes**

- FIXED: Avidyne ADS-B and flight plan transfers broken (that is, now fixed)
- FIXED: Memory leak when plates/diagrams are embedded on maps
- FIXED: Various problems with line width and opacity using scribble on plates/diagrams
- FIXED: Problem showing multiple airport diagrams on the map
- FIXED: Various minor UI and layout issues with iOS 11
- FIXED: Incorrect rotation for airport diagrams on the map in some cases
- FIXED: Minor capitalization inconsistencies
- FIXED: Incorrect regional radar shown for some airports in Florida
- FIXED: Sometimes Documents do not load or are slow to load
- FIXED: Memory leak with Track feature
- FIXED: Crash in some cases when showing weather for the selected airport
- FIXED: Other crashes and minor problems
Version 3.0 (2/9/18)

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 Avidyne 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
  o Receive GPS and AHRS from the in-panel system
  o Send flight plans from FlyQ EFB to SkyView/AFS
  o 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

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](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 and the iPhone version works in Portrait mode only (taller than wide). Certain features work slightly differently on the two types of devices but the differences are usually very minor. We also use shorter labels for features on the iPhone in some places so they fit the smaller screen. This guide generally uses screenshots from the iPad version of the app except where the iPhone version looks materially different.

The same app runs on both the iPad and iPhone and adapts each device; 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.

Not all tab bar items (**Airports**, **Weather**, **Flights**, **Map**, **Plans**, etc.) fit on the smaller iPhone screen. Rather, some are accessed by tapping the **More** tab. To compensate, on the iPhone (only) you can re-arrange the tabs from the **More** tab by tapping the **Edit** button. Drag icons not currently on the tab bar (that is, shown in the white area of the screen) down to the tab bar at the bottom of the screen then tap **Done**. You can also change the order of tabs on the tab bar by sliding them left or right.
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 show the major functional areas of the app: Airports, Weather, Flights, Maps, Plans, 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:

![iPad Interface]

- **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 and control the transparency of the Radar, Procedures, and other weather layers on the map. **Note**: Not shown on the iPhone due to screen size limits. Also available from the Settings screen.
- **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.
- **Notifications**: Alerts you when someone wants to follow your flights or comments/likes your flights, when new ChartData or new app versions are available, and more.
- **Status Indictors**: 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.

On an iPhone:

![iPhone Interface]
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 (“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. Tap 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 windscreen.

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 map 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 a 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 Wpts 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 Procedures (IFR Approach Procedures and Airport Diagrams), 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. The Logbook layer works in conjunction with the Flights tab to show where you and/or your friends have flown.
Notes:

FlyQ includes numerous weather layers. Tap the Legend item in the Tools section of the Layers popup for a detailed key to colors and symbols.

The Winds Aloft and Surface Winds arrows point in the direction that the wind is moving not in the direction from which it comes. For Winds Aloft, the number is the expected wind speed, in Kts, at the altitude selected on the Altitude Slider (right side of the screen). For Surface Winds, the number is derived from either a METAR or TAF, depending on the selection of the Timeline.

Note: As you fly, the Altitude Slider automatically changes to match your current altitude (MSL).

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 as well as other weather layers. These settings are also available in **Settings**. **Note:** For space reasons, this button is not shown on the iPhone but can be accessed from Settings.

![Screenshot of Brightness settings](image)

**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 features 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.

<table>
<thead>
<tr>
<th>Gauge</th>
<th>Function</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPS Altitude / Pressure</td>
<td>Displays the geometric altitude as reported by a GPS or pressure altitude if sent from the position source</td>
<td>GPS altitude is not corrected for atmospheric pressure.</td>
</tr>
<tr>
<td>Pressure Altitude</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ground Speed</td>
<td>Ground speed in Knots, MPH, or K/min</td>
<td>Change Units in Settings</td>
</tr>
<tr>
<td>Track</td>
<td>Magnetic ground track</td>
<td></td>
</tr>
<tr>
<td>Position</td>
<td>Latitude/longitude</td>
<td>Tap to create a Personal Waypoint at that location</td>
</tr>
<tr>
<td>AGL</td>
<td>Altitude above Ground Level</td>
<td>The low-resolution terrain database must be loaded</td>
</tr>
<tr>
<td>VSR</td>
<td>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.</td>
<td>By default, the system aims for 1000 feet AGL and 3 NM away from the airport. Use Settings to change these values.</td>
</tr>
<tr>
<td>Bearing to Wpt</td>
<td>Magnetic course to the next point on the flight plan</td>
<td></td>
</tr>
<tr>
<td>ETE to Wpt</td>
<td>Estimated Time Enroute from the current position to the next waypoint</td>
<td></td>
</tr>
<tr>
<td>Distance to Wpt</td>
<td>Distance to the next waypoint in the flight plan in NM, SM, or KM</td>
<td>Change Units in Settings</td>
</tr>
<tr>
<td>Dist. to Landing</td>
<td>Distance to the final landing (not next fuel stop)</td>
<td></td>
</tr>
<tr>
<td>Time to Landing</td>
<td>Time to the final landing</td>
<td></td>
</tr>
<tr>
<td>Waypoint</td>
<td>Name/ident of the next waypoint in the flight plan</td>
<td></td>
</tr>
<tr>
<td>Closest Waypoint</td>
<td>The waypoint closest to your current location</td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>---------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Timer 1</td>
<td>Count down time</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tap to set the duration and start/stop the timer</td>
<td></td>
</tr>
<tr>
<td>Timer 2</td>
<td>As above</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Timer 1 and Timer 2 are independent of each other</td>
<td></td>
</tr>
<tr>
<td>Stopwatch 1</td>
<td>Count-up timer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tap to Start/Stop</td>
<td></td>
</tr>
<tr>
<td>Stopwatch 2</td>
<td>As above</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stopwatch 1 and Stopwatch 2 are independent of each other</td>
<td></td>
</tr>
<tr>
<td>Clock</td>
<td>Zulu (UTC) clock</td>
<td></td>
</tr>
<tr>
<td>Blank</td>
<td>No gauge</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Useful for simplifying visual layouts in some cases</td>
<td></td>
</tr>
<tr>
<td>GPS Info</td>
<td>Shows horizontal and vertical accuracy of the GPS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>This value is estimated and should not be taken as extremely reliable</td>
<td></td>
</tr>
</tbody>
</table>
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 tap **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.

![Map Bar Icons](image)

**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

**Note:** Augmented Reality is not available for some older devices such as the iPad 2, iPad 3, and the original iPad mini.

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? Tap the **Shutter** (black dot icon) in the lower center of the
screen to snap a photo. You'll get two photos per tap; 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 tap **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

Tape

2D “Radar”

2D / 3D / AR

Gauge Bar

Layers

Show Airports

Private Airports

Helipads

Seaplane Bases

Runways < 2500 feet

5 nm ———— 100 nm

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, Stratus, FreeFlight, L-3 Lynx, SkyRadar, etc.) 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 Stratus² 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.
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 4 minutes and cached on the iPad/iPhone for use during flight. Green means that weather (at least METAR/TAF, Winds Aloft, and Nexrad) has been updated within 60 minutes, Yellow is within 4 hours, 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 Stratus 3, Merlin, Stratux, uAvionics devices, the Dual XGPS 170 and 190, L-3 Lynx, SkyRadar DX, SkyRadar L, SkyRadar D2, all iLevil ADS-B receivers, FreeFlight RANGR, BendixKing, and many more receivers.

The Stratus 1S and 2S are not supported by FlyQ because they were designed exclusively for ForeFlight.
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. These flights are available for review in the Flights tab. From there, you can playback your flights from within FlyQ itself or from systems like Cloud Ahoy or Google Earth, analyze your flights with graphs, 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. You can even share, add comments, and Like flights that your friends make with the integrated Floq pilot-only, private network.

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 a control to manually turn the recording on or off.

Start and Stop 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 for use in the visual logbook. Recordings are stored on your device and in our cloud system. You can adjust your privacy level by going to the Flights tab and tapping Profile. See The Floq Network section for more details.

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.

FlyQ 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). These can be edited from within the **Flights** tab by selecting the flight then tapping the **Edit** button.
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. The simulator works with both 2D and 3D maps.

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 Flights tab and tap the blue Play triangle for the desired flight. 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 taps 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: Tapping an airport here automatically shows the extended runway centerlines and right-pattern indicators on the map.

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, Navaids, 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, navaids, 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 navaids 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.

**Note:** The two bearings shown on the top display are magnetic and based on the magnetic variation of the starting point in each direction. Thus, the two bearings will not be exactly reciprocal unless the magnetic variations of both ends of the tap are the same (which only happens if the two tap-points are geographically very close to each other).
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 ¼ 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 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.
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.

![Document View](image)

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).

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.

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 AirPrint 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 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.
Flight Plans

Creating a flight plan

FlyQ EFB makes it very easy to create an ideal, wind-optimized flight plan any way you prefer. It can even automatically plan fuel stops in a way that takes fuel prices and how far out of your way each potential fuel stop is into account.

Plans can be created whether you’re connected to the Internet or not but some advanced features, such as recently cleared ATC routes, 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.

Create Using the Search Box

Enter a series of idents into the top Search Box and FlyQ will automatically plan a flight. For example, enter BFI PDX and FlyQ plans a flight from KBFI (Boeing Field, near Seattle) to KPDX (Portland, Oregon).

Note that you don’t have to add the K prefix to the airport idents but you can if you like.

In addition to airports, you can enter idents for navaids, fixes, Victor or Jet airways, latitude/longitude locations, intersections of two radials, or points relative to navaid or fix. See Entering Latitude/Longitude Points and Relative Locations below for more information on these.

The way it plans the flight depends on whether your default plan type is IFR or VFR. See the Defaults section below for more information on how to specify default settings.
IFR Flights

Using the example above of BFI PDX, FlyQ will look for recently cleared ATC routes between BFI and PDX and present you with a choice of which to use if any are found. You’ll see the distance for each route as well as an estimate of flight time and fuel required. FlyQ also shows when the route was last approved, how often it has been approved in the past few days, and the minimum and maximum approved altitudes.

Tap a route to see it highlighted in magenta (such as BUWZO KRATR2 above).

Tap Use Route to use a route exactly as stated using the average of Min and Max.

Tap Use Wind/Fuel Optimized Route to use the route but optimize for best winds and ignore the Min and Max altitudes yet always stay within the service ceiling of the plane. Fuel stops will be added if necessary.

Tap Customize to open the New Plan section (described below), adding the route and altitude from the ATC route but allowing you to customize all planning parameters.

Tap create a new route to ignore all the suggestions and plan the flight using your default routing method and default preference for adding fuel stops or not.

If no recently cleared routes are found between the two points, FlyQ creates a route based on what ATC is most likely to assign.

FlyQ cannot search for ATC routes if you enter more than two idents, such as BFI ARPEE PDX. Rather, it will plan a route between all of the points using your default routing method.

You can also disable searching for ATC routes in Settings/Defaults.
VFR Flights

FlyQ will route using your default routing method and default preference for adding fuel stops or not. See **Defaults** below for more information.

**Specifying a Routing Method**

Regardless of your default routing method or whether you prefer IFR or VFR, you can force a particular routing method by adding a one letter suffix to your plan:

<table>
<thead>
<tr>
<th>Routing Suffix</th>
<th>Routing Method</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>V</strong></td>
<td>Route via Victor airways</td>
</tr>
<tr>
<td><strong>J</strong></td>
<td>Route via Jet airways</td>
</tr>
<tr>
<td><strong>G</strong></td>
<td>Route using Terrain Avoidance (was previously called GPS Direct)</td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>No routing, just the points in the Search box</td>
</tr>
<tr>
<td><strong>W</strong></td>
<td>No routing but wind-optimize and add fuel stops, if required, based on lowest prices</td>
</tr>
<tr>
<td><strong>I</strong></td>
<td>Route as an IFR flight and look for ATC routes. Mostly useful if your default plan type is VFR but you want to plan an IFR flight.</td>
</tr>
</tbody>
</table>

If you add a routing suffix other than **I**, FlyQ will use your routing method and not search for recently cleared ATC routes even for IFR flights. For example, **PAE SFO V** will produce a Victor route from PAE (Paine Field, near Seattle) to SFO without regard to your default routing method.

**Defaults**

Tap **Settings** (the gear icon at the top of the screen) then **Defaults** to view or change many of the default parameters used to create a flight. These include routing method (default: **Victors**), whether or not to add fuel stops (default: **Yes**), how long to allow for layover time at fuel stops (default: **1 hr**), and many more.
Create Using 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.
Entering Latitude/Longitude Points and Relative Locations

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 search 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.
Create Using 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. To rename a plan, open it first then tap the name in blue.

![Flight planning interface]

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.

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

**From:** Enter the airport ident, either with or without the 'K'. 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.

**Waypoint(s):** Normally FlyQ calculates a flight plan based entirely on your takeoff and landing airports. Use this field to specify any intermediary waypoints, nav aids, 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).

**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 (1800wxbrief.com).

**Desired cruise alt:** You can specify the flight altitude if Optimize for best wind is off. If it’s On, FlyQ selects the best altitude so you’ll see Automatic here.

**Add fuel stops:** If the flight requires it, based on distance and winds expected during flight, FlyQ will use its fuel price database to find the fuel stop(s) that minimize your total flight cost. It takes both the price per gallon (or pound for Jet A) and the diversion distance into account when planning stops. That is, it won’t plan a stop 50 miles out of your way just because the price per gallon is 10 cents lower than elsewhere.

**Recently Approved Routes (IFR):** VFR flights will never show the list of recently approved IFR ATC routes but you can choose whether to use them or not for IFR flights. **Note:** You can also disable ever searching for ATC routes in Settings/Defaults.

**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.

**Optimize for best winds:** Normally FlyQ will use the winds-aloft forecast for your flight time to plan the best cruise altitude for the flight. Select Off to disable this feature and allow you to enter your own preferred altitude.
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.

**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.

**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 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.

![Wind Optimizer Table]

**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 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 755 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 **Navaids** or **Fixes**. If the **Type** is not already **Stop**, FlyQ EFB automatically changes it to a **Stop**. For a **Stop**, you can also specify the **Layover Time**.

The altitude of each waypoint (that is, the altitude you will be at just before the next **waypoint**) can be edited as well.

**Tip:** You can quickly change the altitude of multiple waypoints with the **Change Altitude For** switch. With it, select if the altitude edit applies just to this waypoint, to all waypoints in the plan, or for this waypoint and all subsequent ones. FlyQ will adjust the given altitude slightly as required for IFR vs VFR altitudes and for correct cardinal altitudes based on magnetic direction of flight.
**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 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.

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 Leidos Flight Services (1800WxBrief.com) when all the fields are as you like. Leidos 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.

You can add your Leidos Username to your pilot profile so your flight plans are available from 1800WxBrief.com. 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, iLevil 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 iLevil 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

ADS-B traffic is a map layer in FlyQ EFB, like any other map layer such as Radar, METARs, Obstacles, etc. By default, Traffic turns on when an ADS-B receiver is connected. You can disable this in Settings.

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 +/- 2000 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 Tail number to ignore field in Settings. This has no effect unless your aircraft has ADS-B Out or a Mode S transponder because only those data streams transmit 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.
Tail numbers. By default, FlyQ displays the tail numbers (Flight ID, technically) of aircraft that transmit this information because they are equipped with ADS-B Out or a Mode S transponder (not a Mode C transponder). You will generally see the tail number for GA planes (like N8515Q) and the call sign for commercial airliners (like UAL1234). You can turn tail number display off in Settings. You can even create your own Buddy list of tail numbers or Flight IDs (such as your friends’ planes) that FlyQ will highlight in light blue for quick identification (e.g. N463SR and N335X below).

Tap any traffic target to see more information. If multiple targets are near the tap, FlyQ displays the following pop-up so you can select a specific target. In that case, FlyQ also displays relative altitude for each target in the list (top) and, when a specific target is selected, that target is highlighted on the map. Each target in the list has a color bar on the left side of the list entry (green for DAL1820 shown below). That same color is used in the top altitude display and when highlighting the target on the map.
### Supported ADS-B Devices

<table>
<thead>
<tr>
<th>Product</th>
<th>Single/Dual Channel</th>
<th>AHRS</th>
<th>Portable or Installed</th>
<th>Meets 2020 Mandate</th>
<th>Battery</th>
<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Merlin</td>
<td>Dual</td>
<td>Yes</td>
<td>Portable</td>
<td>No</td>
<td>Yes</td>
<td>Wi-Fi</td>
</tr>
<tr>
<td>Stratux</td>
<td>Single/Dual</td>
<td>Yes/No</td>
<td>Portable</td>
<td>No</td>
<td>Yes/No</td>
<td>Wi-Fi</td>
</tr>
<tr>
<td>Stratus 3</td>
<td>Dual</td>
<td>Yes</td>
<td>Portable</td>
<td>No</td>
<td>Yes</td>
<td>Wi-Fi</td>
</tr>
<tr>
<td>Stratus 3i</td>
<td>Dual</td>
<td>Yes</td>
<td>Installed</td>
<td>Yes</td>
<td>Yes</td>
<td>Wi-Fi</td>
</tr>
<tr>
<td>Stratus 1 and 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Not supported</td>
</tr>
<tr>
<td>Garmin systems</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Supported by adding a Merlin or Stratux receiver</td>
</tr>
<tr>
<td>Dynon DRX</td>
<td>Dual</td>
<td>No</td>
<td>Portable</td>
<td>No</td>
<td>Yes</td>
<td>Wi-Fi</td>
</tr>
<tr>
<td>Dual XGPS 170</td>
<td>Single</td>
<td>No</td>
<td>Portable</td>
<td>No</td>
<td>Yes</td>
<td>Bluetooth</td>
</tr>
<tr>
<td>Dual XGPS 190</td>
<td>Dual</td>
<td>Yes</td>
<td>Portable</td>
<td>No</td>
<td>Yes</td>
<td>Bluetooth</td>
</tr>
<tr>
<td>iLevil AW or SW</td>
<td>Single</td>
<td>Yes</td>
<td>Portable</td>
<td>No</td>
<td>Yes</td>
<td>Wi-Fi</td>
</tr>
<tr>
<td>iLevil 2/3 AW or SW</td>
<td>Dual</td>
<td>Yes</td>
<td>Portable</td>
<td>No</td>
<td>Yes</td>
<td>Wi-Fi</td>
</tr>
<tr>
<td>SkyRadar DX</td>
<td>Dual</td>
<td>Yes</td>
<td>Portable</td>
<td>No</td>
<td>No</td>
<td>Wi-Fi</td>
</tr>
<tr>
<td>SkyRadar (other)</td>
<td>Single</td>
<td>No</td>
<td>Portable</td>
<td>No</td>
<td>No</td>
<td>Wi-Fi</td>
</tr>
<tr>
<td>Clarity SV</td>
<td>Dual</td>
<td>Yes</td>
<td>Portable</td>
<td>No</td>
<td>Yes</td>
<td>Wi-Fi</td>
</tr>
<tr>
<td>BendixKing KGX</td>
<td>Single</td>
<td>No</td>
<td>Installed</td>
<td>Yes</td>
<td>N/A</td>
<td>Wi-Fi</td>
</tr>
<tr>
<td>L-3 Lynx</td>
<td>Single/Dual</td>
<td>No</td>
<td>Installed</td>
<td>Yes</td>
<td>N/A</td>
<td>Wi-Fi</td>
</tr>
<tr>
<td>FreeFlight RANGR</td>
<td>Single/Dual</td>
<td>No</td>
<td>Installed</td>
<td>Depends</td>
<td>N/A</td>
<td>Wi-Fi</td>
</tr>
<tr>
<td>NavWorx ADS600</td>
<td>Single</td>
<td>No</td>
<td>Installed</td>
<td>Depends</td>
<td>N/A</td>
<td>Wi-Fi</td>
</tr>
<tr>
<td>SkyGuard TWX</td>
<td>Dual</td>
<td>No</td>
<td>Portable</td>
<td>Depends</td>
<td>No</td>
<td>Wi-Fi</td>
</tr>
<tr>
<td>FlightBox</td>
<td>Single/Dual</td>
<td>Opt.</td>
<td>Portable</td>
<td>No</td>
<td>Yes</td>
<td>Wi-Fi</td>
</tr>
<tr>
<td>Pathfinder</td>
<td>Single</td>
<td>No</td>
<td>Portable</td>
<td>No</td>
<td>Yes</td>
<td>Wi-Fi</td>
</tr>
</tbody>
</table>

**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 \textit{ADS-B}
• Let it warm up for about a minute.
• Go to the \textit{Settings} app on the iPad or iPhone.
• Turn \textit{Airplane mode} \textit{ON}. This disables all wireless services that might interfere with FlyQ EFB.
• Turn only \textit{Bluetooth} \textit{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.

\textbf{Tip:} Tap the \textit{Layers} button on the map and be sure the \textit{Traffic} map layer on. The \textit{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. On the map, FlyQ lets you select as many weather layers as you like and even use a Timeline and Altitude Slider to see how weather has changed or is expected to change in the future or at different altitudes.

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.

Note: Remember that most ADS-B receivers are dual-channel. 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
Layers

FlyQ EFB has 16 weather layers and can display any combination of them over any 2D map. Tap the Layers button (stack of papers icon on the left side of the screen) then select as many or as few weather layers as you like (except that only one radar layer may be selected at a time). Most layers work when connected to the Internet or an ADS-B receiver. Some layers are affected by the Timeline and/or Altitude Slider.

<table>
<thead>
<tr>
<th>Layer</th>
<th>Internet</th>
<th>ADS-B</th>
<th>Timeline</th>
<th>Altitude Slider</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radar</td>
<td>Yes</td>
<td>Yes</td>
<td>-2 » +1 hours (Internet only)</td>
<td>No</td>
<td>Historical + 1 hour predictive. CONUS only.</td>
</tr>
<tr>
<td>Radar (Anim)</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Loops from 4.5 hours ago to current in 15 minute increments. North America.</td>
</tr>
<tr>
<td>Radar (Hi-Res)</td>
<td>Yes</td>
<td>No</td>
<td>-2 hours » current</td>
<td>No</td>
<td>No predictive. North America.</td>
</tr>
<tr>
<td>Satellite (Vis)</td>
<td>Yes</td>
<td>No</td>
<td>-2 hours » current</td>
<td>No</td>
<td>Daylight hours only</td>
</tr>
<tr>
<td>Satellite (IR)</td>
<td></td>
<td></td>
<td>-2 hours » current</td>
<td>No</td>
<td>Day and Night</td>
</tr>
<tr>
<td>METAR/TAF</td>
<td>Yes</td>
<td>Yes</td>
<td>-2 » +22 hours</td>
<td>No</td>
<td>METAR when current, TAF when future</td>
</tr>
<tr>
<td>Winds Aloft</td>
<td>Yes</td>
<td>Yes</td>
<td>-2 » +22 hours</td>
<td>Yes</td>
<td>1000 ft increments (interpolated)</td>
</tr>
<tr>
<td>Sfc. Winds</td>
<td>Yes</td>
<td>Yes</td>
<td>-2 » +22 hours</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Cloud Tops</td>
<td>Yes</td>
<td>Yes</td>
<td>-2 » +22 hours</td>
<td>Yes</td>
<td>MSL. Cloud tops are based on cumulus layers when from the Internet</td>
</tr>
<tr>
<td>Cloud Bases</td>
<td>Yes</td>
<td>No</td>
<td>-2 » +22 hours</td>
<td>No</td>
<td>AGL. Based on cumulus layers.</td>
</tr>
<tr>
<td>SIG/AIRMET</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Turbulence</td>
<td>Yes</td>
<td>Yes</td>
<td>-2 » +15 hours</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Icing</td>
<td>Yes</td>
<td>Yes</td>
<td>-2 » current for Internet, Current for ADS-B</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Lightning</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>PIREPs</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Sfc. Analysis</td>
<td>Yes</td>
<td>No</td>
<td>-2 » +22 hours</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>
Legend

View this weather legend by tapping the Layers icon (stack of paper icon) and selecting Legend in the Tools category.

<table>
<thead>
<tr>
<th>Radar (dBZ)</th>
<th>5</th>
<th>25</th>
<th>50</th>
<th>75</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radar (High-res) (dBZ)</td>
<td>0.5</td>
<td>25</td>
<td>50</td>
<td>75</td>
</tr>
<tr>
<td>Satellite (Visible)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>METAR/TAF</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VFR</td>
<td>MVFR</td>
<td>IFR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Winds Aloft (Kts)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-20</td>
<td>↑</td>
<td>21-60</td>
<td>↑</td>
<td>61+</td>
</tr>
<tr>
<td>Lightning</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Light</td>
<td>Medium</td>
<td>Severe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surface Winds (Kts)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-10</td>
<td>↑</td>
<td>11-20</td>
<td>↑</td>
<td>21+</td>
</tr>
<tr>
<td>Cloud Tops (Ft MSL or FL)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No data</td>
<td>0</td>
<td>3000</td>
<td>6000</td>
<td>9000</td>
</tr>
<tr>
<td>Cumulus Cloud Bases (Ft AGL or FL)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 - 2499</td>
<td>2500 - 4499</td>
<td>4500 - 5999</td>
<td>6000 - FL1275</td>
<td></td>
</tr>
<tr>
<td>Turbulence</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No data</td>
<td>V. Lt</td>
<td>Light</td>
<td>Moderate</td>
<td>Severe</td>
</tr>
<tr>
<td>Icing (Internet)</td>
<td>Potential</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5%</td>
<td>50%</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Icing (ADS-B)</td>
<td>Severity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No data</td>
<td>Trace</td>
<td>Light</td>
<td>Mod.</td>
<td>Sev.</td>
</tr>
<tr>
<td>SIG/AIRMET</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Covective</td>
<td>Icing</td>
<td>IFR</td>
<td>Mountain Obscuration</td>
<td>Turbulence</td>
</tr>
<tr>
<td>PIREPs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>Turbulence</td>
<td></td>
<td>Icing</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>Light</td>
<td>Moderate</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Urgent</td>
<td></td>
<td>Severe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sfc. Analysis</td>
<td>Fronts</td>
<td>Weather</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>Cold</td>
<td>Stationary</td>
<td>Rain</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>Warm</td>
<td></td>
<td>Snow</td>
<td></td>
</tr>
<tr>
<td>Hurricane</td>
<td></td>
<td></td>
<td>Mix</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Ice</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>TS</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
- “No data” is only relevant to ADS-B weather, not from the Internet. It means that the system is receiving data about that area from the ADS-B receiver but the data has been explicitly marked at the source as No Data. This often happens over oceans or mountain passes with insufficient weather coverage. It is entirely different than the case of the ADS-B receiver not seeing any data at all from a given area (i.e. what looks like a hole in the data).
• If an ADS-B receiver is not used, FlyQ uses the last-downloaded weather from the Internet.
• “SLD” is Super Large Droplets of icing. These are extremely dangerous and should always be avoided. This data is only from an ADS-B feed, not from the Internet.
• PIREPS are colored red even if they are not Severe if they are marked as Urgent.
• A General (or Urgent General) PIREP icon is displayed when the PIREP is neither Turbulence nor Icing or it contains more than one report (i.e. both Icing and Turbulence, CAVU, etc.).
• The Icing display is very different for Internet Icing than for ADS-B icing. Internet icing is based on the probability of any type of icing while ADS-B icing is based on severity. You can adjust the ADS-B icing display to hide icing below a selected probability using the Brightness and Opacity control described below.

Brightness and Opacity

You can control the opacity of the radar layer with a slider. If the slider is set all the way to the right (line solid blue), the radar layer completely obscures the underlying map. If set all the way to the left (no blue line), it’s almost completely transparent.

Some of the other weather layers (Icing, Turbulence, Cloud Tops, and Cloud Bases) can also be controlled with the Other weather layers opacity slider.

ADS-B icing is controlled with the switch at the bottom of the box. With that, FlyQ can hide icing that has a probability less than the selected option. For example, if you want to hide icing that isn’t at least 30% likely, set the switch to 30%. To see all icing, no matter how likely, set the switch to 0%. Note: This control only applies to ADS-B icing not icing provided when connected to the Internet.

iPhone note: The Brightness and Opacity control is not accessible from an icon at the top of the screen due to more limited space. Instead, use the Settings icon (gear icon) then choose the Brightness and Opacity selection.
FlyQ’s Timeline lets you look at weather in the recent past and, in some cases, expected weather up to a day into the future. A thin blue line indicates the selected time (about 9:30 AM in the example above).

If a flight plan is loaded, FlyQ uses a magenta line to show the flight period. For pre-flight planning, this period is the time between expected takeoff and expected landing. When a flight is in progress, the period is from the current time until expected landing based on your current ground speed.

Not all weather layers respond to changes in the Timeline. See the Layers table above for details.

The Timeline automatically turns on if any of the selected weather layers make use of it and turns off when no selected layers use it. You can also manually turn it on or off with the Timeline button the Tools portion of the Layers popup.

Change the selected time by sliding the time selector (the blue line) or simply tapping on the desired time. If a flight plan is loaded, a “ghost” aircraft marker appears at your expected location at the selected time (if the selected time is during the planned flight period). In this way, it’s easy to see what weather is expected near your aircraft at any point during the flight. In the example above, the aircraft’s current position is near the GARVY intersection and the “ghost” image is further south because the timeslider is set somewhat into the future (about 9:30 AM).

Use two fingers to zoom the Timeline in or out. For example, to see more detail between about 6pm and 10pm, place one finger around 6pm and one finger around 10pm then “expand” your fingers. To show a wider time period, pinch your fingers
inward. When zoomed, slide (pan) the Timeline left or right by pressing two fingers on the Timeline at the same time then slide them right or left.

<table>
<thead>
<tr>
<th>Default zoom (24 hours)</th>
<th>Zoomed-in</th>
</tr>
</thead>
</table>

Set the selector to the current time by double-tapping the anywhere on the timeline. If the Timeline is zoomed in, a double-tap also resets the scale to show the full 24 hour range.

During flight, the Timeline normally moves automatically to the current time.

**Altitude Slider**

FlyQ’s Altitude Slider lets you look at weather observed or expected at different altitudes (MSL). By default, the Altitude Slider shows a range from 0 ft to 24,000 MSL (0 – FL240). The upper point can be changed to 16,000 MSL or 48,000 MSL from the Altitude slider ceiling option in Settings.

Not all weather layers respond to changes in the Altitude Slider. See the Layers table above for details.

The Altitude Slider automatically turns on if any of the selected weather layers make use of it and turns off when no selected layers use it. You can also manually turn it on or off with the Altitude Slider button the Tools portion of the Layers popup.

Above the altitude range selector is a small button that shows the currently selected altitude (WX Alt 7K in the example to the side). This button is always visible, even when the range selector is hidden. Tap this button to show or hide the range selector.

Change the selected altitude by sliding the selector (the blue highlight) or simply tapping the desired altitude.

During flight, the Altitude Slider normally moves automatically to your current altitude.

**Preflight vs. In-flight**

During flight, FlyQ is very careful to not overwhelm you with information or fill the screen with unnecessary controls. Therefore, the Timeline and Altitude Slider behave
differently whether you’re doing pre-flight planning on the ground (that is, not moving) or during flight. Specifically:

**Preflight:** The Timeline and Altitude Slider stay on when any layer that uses them is on and turns off when no selected layers use them. They can also be manually toggled on and off with the Timeline and Altitude Slider buttons in the Tools area of the Layers popup. The Altitude Slider is also toggled on and off by tapping the button above the range selector that begins with “Wx Alt.”

**In-flight:** Same as above except that the Timeline and Altitude Slider automatically hide if you don’t use them for 20 seconds. When the “hide” action is triggered, FlyQ also sets the Timeline to the current time and the Altitude Slider to the current GPS altitude. Once reset, FlyQ dynamically updates the Timeline and Altitude Slider to the current time and altitude as you continue flying. In this way, it’s easy to temporarily use the Timeline or Altitude Slider for a “what-if” analysis or to see how weather is expected to change later in the flight without accidentally forgetting to set them back to the actual time or altitude.
**METARs and TAFs**

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.

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.

**Note:** Both the METAR/TAF and TFRs layers use a single-tap to show more information. For safety reasons, when a TFR overlaps a METAR/TAF circle, FlyQ shows TFR information. In that case, temporarily deselect the TFR layer to see the METAR/TAF information.
Winds Aloft

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 the altitude selected on the Altitude Slider. If you’re in-flight, that is generally your current GPS altitude. Winds Aloft are reported in MSL.

**Note**: Selecting 0 on the Altitude Slider does not show surface winds (there is a specific weather layer for that). Rather, since Winds Aloft values are interpolated between the two closest FAA/Nav Canada reporting altitudes, selecting 0 shows the winds aloft from 3,000 ft, the first reporting altitude.

Tap the large Weather tab at the bottom of the screen then the Winds sub-tab to see winds at other altitudes and their headwind or tailwind impact.

![Winds Aloft Screen](image)

The image above has two sections. The top shows the wind relative to the aircraft’s direction. In this example, it’s a 9 knot tailwind. The bottom section uses green (tailwind) and red (headwind) to show how much tailwind or headwind to expect if you were to fly at various altitudes. The current altitude is shown as the thin grey line (about 7500 ft). Therefore, you’d get an increasingly large tailwind if you fly above 6,000 ft but a headwind if you fly lower.
AIRMETs and SIGMETs

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.

The Altitude Slider and Timeline do not affect the AIRMET/SIGMENT display. Rather, FlyQ shows all the current AIRMETs and SIGMETs from the NWS (Internet) or ADS-B data feed.

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 tapped to restore showing all AIRMETs and SIGMETs.

Tip: Tap the AIRMET or SIGMET text to see it much larger.
For an Airport

Switch from the default General sub tab to the Weather sub tab to see weather specific to an airport. 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 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.
Visual Logbook

FlyQ includes a very unique visual logbook. It includes all the usual data-entry fields and reporting you’d see in a standard logbook but adds mapping and graphing features (the visual part of visual logbook) that go far beyond standard logbooks.

The visual logbook and all the related functions are located in the Flights tab at the bottom of the app. **iPhone note:** You can re-arrange the tabs if you tap More (not shown) and Edit.

Lists

There are two tabs towards the top of the Flights area: Flight Following and My Flights (Logbook). My Flights (Logbook) shows all your flights. Flight Following also shows all
your flights but adds flights taken by the friends you want to follow. This is optional, of course (see The Floq Network for more info.)

You can view the lists in either a Visual (default) or Compact form. The default Visual view shows a Sectional with your flight track, summary info about each flight, and has buttons for social Likes and Comments. The Compact view removes the Sectional image, most summary info, and the social buttons.

Toggle between Visual (above) and Compact (below) modes with the button that looks like a list at the top of the Flights area.
Each flight entry includes a lot of information and has buttons for additional actions:

- Use the Play (triangle) and Map buttons at the top right to play or show the track in the main map area.
- Tap the pilot icon (JM above) to see more info about the pilot and his or her flights.
- Tap an airport ident (KFMY and 69FD above) to jump to info about the airport.
- Use the Action button (box with an arrow pointing up) to export the flight, delete the flight, add a photo, print, etc.
- Tap anywhere else, such as the track image or title, to see more details about the flight.

Flight statistics, based on the flights in the list, are shown just above the list itself. The stats include the number of flights, total duration, and total distance. This area also shows the number of flights and hours flown at night, in instrument conditions, and as PIC.

<table>
<thead>
<tr>
<th>Flight Following</th>
<th>My Flights (Logbook)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flights: 923</td>
<td>Night: 2 / 32.4 hrs</td>
</tr>
<tr>
<td>Duration: 897.6 hrs</td>
<td>Inst: 2 / 21.0 hrs</td>
</tr>
<tr>
<td>Distance: 233,920.5 nm</td>
<td>PIC: 618 / 895.4 hrs</td>
</tr>
</tbody>
</table>

These totals are aggregated from the flights listed. Therefore, the numbers change as you flip between Flight Following and My Flights or apply any of the Filter or Time Period criteria discussed below. In this way, these totals could be thought of as an always-present, dynamic, quick summary report. More detailed reports and graphs are available from the Reports button at the top of the Flights list and within the Profile section. The reports and graphs are discussed below.
Flight Details

From the List view, tap any flight to see details or use the + button to manually add a new flight.

The Map tab shows your track over a satellite map where the green dot is takeoff and the red dot is landing. This view is only available when connected to the Internet. It also only appears for recorded flights. That is FlyQ does not have the data to generate this view for flights imported from logbook apps or from manual data entry.

The top of the Details screen has much of the same information and actions as are available from the List view. That is, it shows the name of the pilot, date of the flight, description of the flight (optional), name of the flight, takeoff and landing airports,
distance, and duration. It also has the same three buttons at the upper right corner: Action (box with an arrow), Play, and Map.

If this is your flight, tap the Edit button at the upper right corner to edit the details then tap Save to store them.

Social buttons include Like (thumbs-up) and Comment (talk bubble). You can add comments to your own flight or flights that other pilots take but you can’t Like your own flight.

Each flight also has a Private switch. In general, your Privacy Level determines who, if anyone, can see your flights. This switch allows you to keep specific flights private even if you generally choose to share your flights with friends. If a flight is marked as Private, it won’t appear in anyone else’s data feed, just yours.
Data Entry

The flight data recorder feeds the logbook so you don’t have to hand-enter all the aspects of your flight. In fact, if you’re upgrading from a version of FlyQ earlier than 4.0, your logbook already contains all the flights you’ve taken since FlyQ EFB 3.0 was released. You can edit and delete any flights added by the recorder or even shut the data recorder off (in Settings).

Tap + from the List view to manually enter a flight. Import existing logbook data from other systems using FlyQ Online at https://FlyQ.seattleavionics.com

The Data tab shows the standard logbook data fields about the flight. The fields are read-only. An Edit button is available at the upper right corner of the screen, if this is your flight, so you can make changes. Tap the Save button to commit changes or go back to the Flights list to discard them.
Photos

The Photos tab shows any photo you've associated with the flight and the Sectional image of the flight track. Use the Star button above each photo to select which image is shown in the List view. Tap any photo to see it full-screen and use the Action button above the photo to share it or delete it.

Note: Use the main Action button at the top of the screen to add more photos.
Analysis

Select the **Analysis** tab to show compelling graphs about how your altitude and/or speed changed over the course of the flight. In the future, you'll also see very detailed graphs showing engine temperature, performance, and other metrics.

Each image can be printed, emailed, sent via text message, deleted, or posted to social media by tapping the **Action** button. Tap an image to see it full-screen.
FlyQ can also play the flight, in either 2D or 3D mode, while looking at the graph by tapping the blue play button next to each flight. Playback speed can vary between real-time (1x) and 10x and you can instantly jump to any location with the flight using the built-in GPS simulator.
**Comments**  
The **Comments** tab shows the comments, of any, that you or other pilots have added. You can delete any comment you make to someone else’s flight and any comment you or someone else posts to one of your flights.

**Search (Filtering)**  
The **Search** field at the top of the **Flights** list makes it easy to search for flights by name, tail number, takeoff or landing airport, time and/or other criteria such as the name of the pilot, aircraft type, or takeoff and landing pair. In addition to the list of matching flights, FlyQ also gives a quick summary of those flights -- total number of flights, total distance and duration, etc. at the top.

Enter a search criteria to find specific flights (e.g. `C172` or `N8121Q` or `SFO` or `KSFO` or `Johnson`, etc.) Use a space to separate multiple criteria. The system is smart in that different values for the same type of criteria (airports, tail numbers, names, aircraft types, etc.) are logically ORed while different types of criteria are ANDed. The criteria order does not matter.

<table>
<thead>
<tr>
<th>Search Criteria</th>
<th>Result Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>KPAE</td>
<td>Find any flight to or from KPAE or any flight that mentions KPAE in the name.</td>
</tr>
<tr>
<td>C172 KPAE AWO</td>
<td>Flights made in a C172 that were to or from either KPAE or AWO.</td>
</tr>
<tr>
<td>C172 PAE AWO</td>
<td>Exactly the same as above. In other words, the airport idents can be either FAA idents or ICAO idents.</td>
</tr>
<tr>
<td>C172 C182 KPAE-AWO</td>
<td>Flights using a C172 or C182 that are from KPAE to KAWO.</td>
</tr>
</tbody>
</table>

**Note:** The line between KPAE-AWO means from KPAE to AWO not from AWO to KPAE. Without the line, such as `C172 C182 KPAE AWO`, the app lists flights that either takeoff or land at either KPAE or AWO.
Johnson HIO PDX BFI C152
Flights that someone named Johnson made that include takeoffs or landings at HIO, PDX, or BFI while flying a C152. Note that Johnson could be the name of the pilot or be in the name of the flight. For example, this filter would find a match if Paul Smith took a flight with Bob Johnson and named the flight “Scenic flight with Bob Johnson.”

Use the date selector to the right of the search box to narrow the results to a specific time period (e.g. All, Yesterday, This Week, Last Month, Last 90 Days, etc.) or enter a custom date range.

Profile
At the top of the Flights tab is a blue link called Profile. Tap it to review and modify your personal settings such as your privacy level (more on this in the Floq Network section), profile photo, and more. It also has tabs to show your recent flights, photos associated with your flights, and endorsements.

Note: Other pilots, depending on your privacy level, may see some of this information. With the default Semi-Private setting, other pilots can see your name, home airport, and the last time you flew but no flight details, no photos, and no endorsements.
Reporting

In addition to the filtering above, you can run about 20 reports and graphs by tapping the blue Reports link on the main Flights tab and within the Profile area. These reports replicate a printed logbook, summarize your flying over time, report by airport, by tail number, by aircraft type, etc. The Graphs visually display information in colorful and understandable ways. The Text reports give more detail.

Filter the results of the reports using the same time and keyword system described in the Search (Filtering) section above. For example, limit the report or graph to particular tail numbers, aircraft types, airports, or during a specific time period.
<table>
<thead>
<tr>
<th>Month</th>
<th>Flights</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>May, 2019</td>
<td>4</td>
<td>0.0</td>
</tr>
<tr>
<td>April, 2019</td>
<td>4</td>
<td>1.5</td>
</tr>
<tr>
<td>March, 2019</td>
<td>7</td>
<td>21.0</td>
</tr>
<tr>
<td>February, 2019</td>
<td>6</td>
<td>0.1</td>
</tr>
<tr>
<td>December, 2018</td>
<td>1</td>
<td>0.1</td>
</tr>
<tr>
<td>November, 2018</td>
<td>1</td>
<td>0.0</td>
</tr>
<tr>
<td>October, 2018</td>
<td>5</td>
<td>0.6</td>
</tr>
<tr>
<td>September, 2018</td>
<td>20</td>
<td>323.4</td>
</tr>
<tr>
<td>August, 2018</td>
<td>12</td>
<td>4.0</td>
</tr>
<tr>
<td>July, 2018</td>
<td>14</td>
<td>2.6</td>
</tr>
<tr>
<td>June, 2018</td>
<td>6</td>
<td>5.6</td>
</tr>
<tr>
<td>May, 2018</td>
<td>45</td>
<td>59.2</td>
</tr>
<tr>
<td>April, 2018</td>
<td>11</td>
<td>5.9</td>
</tr>
<tr>
<td>March, 2018</td>
<td>48</td>
<td>9.1</td>
</tr>
<tr>
<td>February, 2018</td>
<td>4</td>
<td>0.3</td>
</tr>
<tr>
<td>January, 2018</td>
<td>10</td>
<td>1.5</td>
</tr>
</tbody>
</table>
Visualization Heat Map

A text list of where you’ve flown is nice but seeing it on a map is much better!

Tap the Placemark icon (looks like a teardrop) at the top of Flights and you'll see a heat map display of all the flights in the list. This unique feature analyzes all the airports in the list from which you’ve taken off or landed at and uses our standard Green, Yellow, Orange, and Red color coding system to give a sense of which are the most common. As elsewhere in FlyQ, green is good (most popular) and red is bad (least common). There is only one green airport, your single most-visited airport.

Remove the markers by tapping the Layers button on the map (stack of papers icon) and turn the Logbook layer off.

When the map is zoomed in (as above), you see colored markers for each airport with idsents and the number of flights to or from the airport. Note that a flight to and from the same airport is only counted once.

Tap a specific airport marker to list all the flights to or from that airport so you can find the details of such flights. This is convenient when used with the Floq Network feature (below) so you can see which friends have flown to specific airports and ask questions about the airport, amenities, or the flight itself.
When the map is zoomed out (below), FlyQ collapses the individual airports into colored regions (again, green most common, red least common). In the example below, we see more flights (yellow) just north and south of the Seattle area than in other parts of Washington and Oregon (red and orange). The blue dot is our current location.

**Playback**

FlyQ includes an integrated flight simulator. It can play a flight plan or a recorded track (flight) in either 2D or 3D. To play a flight, either yours or a friend’s, press the **Play** button (blue triangle) next to any flight. See the **Built-in Simulator** section above for details about changing the playback speed and jumping to specific spots in the flight. **Note:** The **Play** button has been replaced with the **Pause** button in the screenshot below because the flight is playing.
The Floq Network

Every pilot we know has friends who fly. And every pilot loves to talk about flights, planes, and our flying experiences. This is where the unique social feature of FlyQ EFB comes in. We call it Floq. Of course, you can choose not to use any of these features and keep all of your data private so no one but you sees any of it but we think you’ll find Floq both useful and fun.

Privacy

Important! Your personal information such as address, email, phone number, filed flight plans, and other account info are never disclosed to anyone except you no matter which Privacy level (below) you select.

Select a Social Privacy Level from with the app via the My Profile link at the top of the Flights tab or from our web site using the My Account link at the top of every web page (then choose the Other Account Info category). The three levels are:

- **Private**: No information is shared with anyone but you.
- **Semi-Private** (the default): Your name, home airport, and number of flights is available to everyone so other pilots can ask to "follow" you. No one sees your flight tracks, logbook data, or other flight details unless you specifically allow them to follow you.
- **Public**: Your flight tracks, home airport, number of flights, and other flight details are available to everyone.

You can also choose to make any specific flight private even if you normally share your flights by using the Semi-Private or Public levels.
Friends

For a social network to be useful, you need to be linked to other pilots. We refer to this as "following." The flights made by pilots you follow show up on your iPad or iPhone. Your flights appear on the devices of those who follow you. By default, pilots have to request that you allow them to see your flights (Semi-Private mode).

The Flights tab has two tabs at the top: Flight Following and My Flights (logbook). When Flight Following is selected, you see your flights and the flights of all the pilots you follow. When My Flights (logbook) is selected, you see just your flights.

Tip: You can easily tell which tab is selected because the selected one is the same color (black) as the stats below it so they blend together. In the case below, that’s Flight Following.

Tap the blue Friends link at the top of the Flights tab to find new people to follow or manage the pilots to which you’re linked.

The Friends page has several tabs and a search box. The first two tabs, I Follow and Following Me show which pilots you follow and which follow you, respectively. Tap Remove to remove any pilot you’re following or anyone following you.

In the example below, Keith Russo is noted as Pending because he has not yet accepted my request to follow him. Therefore, he has a Cancel button instead of Remove. Cancel revokes my request to follow him.
Use the search box at the top to enter a name, email address, or home airport ident of a pilot you'd like to follow. The results appear in the Search Results tab.

Use the Suggestions tab to see other pilots that the system thinks may interest you because they fly out of your home airport or home state.

**Note:** If you set your Social Privacy Level to Private, you never appear in Search or Suggestions but you can still follow other people.

**Note:** The Suggestions and Search tabs show the home airport, last flight, and number of flights to help you decide whether you want to follow them or not. The I Follow and Following Me tabs show just the home airport to make the system faster.

![Screen capture of the search and follow interface](image)

Tap a pilot’s name or profile icon to learn more about him.
Tap **Follow** or **Request Follow** to follow any pilot. When you do, they’ll be notified with an email and a message on their Notifications (bell) icon at the top of the app (as shown above by the red “1” badge). **Request Follow** means that the pilot wants to select which pilots see his or her flights. Once the person has accepted your request, you'll start to see their flights. If you simply see **Follow**, it means that the person has chosen to allow anyone to follow him so you’re immediately linked when you tap **Follow**.

Once you’re following other pilots, the **I Follow** tab lists them. Use the **Remove** button to stop following their flights. If you see **Pending**, it means you've asked to follow them but they have not accepted the request yet.

The **Following Me** tab shows which pilots you've allowed to follow your flights. Similar to the above, tap **Remove** to remove any follower.

**Likes and Comments**

For each flight, you’ll see buttons to **Like** and add a **Comment**.

Tap the **Like** button (thumbs up icon) to show your approval to another pilot's flight or, if this is your flight, see who liked your flight. You cannot Like your own flight so tapping the **Like** button for such a flight shows who Liked it.

Tap the **Comment** button (speech bubble icon) to add a comment to your flight or someone else's flight.
Sharing with Other Social Networks

It’s easy to share flight data and images with other social networks using the Action button next to each flight. That gives you several options, including Share GPX and Share Image.

Share GPX can be used to email the digital track to someone or sent to another app, such as Cloud Ahoy, for additional analysis. GPX is a data format designed for location track exchange between computer systems; it’s not a data file a human would want to read.

Share Image generates a visual track of your flight, like the one shown in the Flights list, with some added stats. It can be printed or sent to someone via text message, email, or any social media app you have installed on your iPad or iPhone such as Facebook, Twitter, or Instagram.

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.
CFI and Student Pilot Endorsements

Seattle Avionics takes flight instruction very seriously and adds features useful to CFI’s and their students. We also offer very special pricing for CFI’s and Private Pilot students: CFI’s can get our full VFR + IFR package (normally $139 a year) for just $19. Private Pilot students can get the VFR-only package for the same $19. CFI’s can renew at $19 so long as they remain active CFIs. Student pilots can only purchase the $19 package once.

The merging of a logbook and a social network is especially useful for CFI’s and their students. It makes it easy for a CFI to follow the flying of all of his or her students and, with the addition of the new Endorsement feature, also makes it easy for a CFI to endorse students. Endorsements can be granted remotely because of the Floq Network feature. For this feature to work, both the CFI and the student must use FlyQ.
Endorsements, like flights, are listed in the **Flight Following** tab. Therefore, pilots who follow someone receiving an endorsement will see the endorsement. As with flights, those pilots can show their approval with a Like and add congratulatory comments.

**Following a Student Pilot**

A CFI can follow all the flights each student takes merely by using the Friends feature and entering the email address of each student in the Search box. The student must accept the request.

**Granting an Endorsement Remotely**

When a CFI deems that a student has earned an endorsement, the CFI simply taps the **Action** button associated with any flight the student has made and selects **Send Endorsement**. Do this by selecting the **Flights** tab in FlyQ EFB, selecting **Flight Following**, and use the **Search** area to type the name of the student if such a flight is not already visible. The student will get a message on his device’s Notification (bell) icon.

**Granting an Endorsement from a Student's iPad/iPhone**

A CFI can also take a student’s iPad or iPhone and grant an endorsement using that device. To do this, the CFI uses the **Flights** tab and taps the **Action** button next to any flight that the student has made. Select **Receive Endorsement**. Note that this method also works if the CFI is not using FlyQ EFB.
Endorsements Screen

The Endorsements screen is essentially the same whether sending or receiving an endorsement. In all cases, the CFI completes the information at top and signs the document with his or her finger. From the FAA’s perspective, such electronic endorsements are exactly like paper ones.

Select the specific type of endorsement using the blue links towards the bottom of the screen. The first section is a list of endorsement categories (Private Pilot, Commercial, Instrument, etc.) and the second section is the specific endorsement.

The system automatically fills in the name of the student, but, depending on the specific endorsement, there may have some other fields that need to be completed. You will be warned if any of these fields are left incomplete.

Tap Preview to review the endorsement. Tap Create if it looks correct or go back to correct it.
Profile and Reports

Pilots who have received endorsements see them in their My Flights section as well as in the Endorsements tab of their Profile screen. They can also generate an Endorsements Received report.

CFI’s who have granted endorsements can see them by generating an Endorsements Sent report.
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, if 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; the FAA just updates 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 this because it dramatically increases monthly update time.
Slingshot Wireless ChartData Transfer

FlyQ EFB has a unique and patent-pending ability to transfer ChartData downloaded for FlyQ to certified and experimental panel systems. In this way, you avoid downloading data separately to a PC, transferring to a USB stick or data card for your in-panel system. Rather, with Slingshot, simply download the usual ChartData for FlyQ EFB, bring FlyQ EFB into your aircraft, and then click a few buttons on your avionics to wirelessly transfer the data you have already downloaded. This can save hours of tedious update and data copying.

Learn more about Slingshot from https://seattleavionics.wordpress.com/2018/07/19/announcing-slingshot-wireless-chartdata-system/

To enable Slingshot, go to Settings and look in the Preferences section. Turn Allow Slingshot access ON. It’s off by default as this does use a little more battery power.

Then follow the instructions for downloading data on your certified or experimental in-panel system. As of this writing, Slingshot is supported by the Bendix-King xVue Touch and AeroVue Touch systems. Several other devices are being adapted for Slingshot compatibility now. Seattle Avionics currently provides ChartData for many different systems including those from Bendix-King, Dynon, Aspen, AFS, GRT, Xavion, Naviator, AvPlan, and many more.
External Devices and Applications

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.

<table>
<thead>
<tr>
<th>Product</th>
<th>GPS</th>
<th>AHRS</th>
<th>ADS-B</th>
<th>Flight Plan Transfer</th>
<th>ChartData</th>
<th>Slingshot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dynon SkyView</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>AFS 5xxx series</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Avidyne IFD</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>BendixKing xVue Touch</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>BendixKing AeroVue Touch</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Aspen Connected Panel</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

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.
BendixKing xVue and AeroVue Touch

The new BendixKing xVue Touch and AeroVue Touch devices include an integrated Wi-Fi adapter that works with FlyQ EFB. These devices support wireless transfer of georeferenced IFR approach plates, airport diagrams, scanned Sectionals, and scanned IFR Low and High Altitude charts using our Slingshot wireless system.

As of this writing, they do not support sending FlyQ EFB their GPS, AHRS, or ADS-B weather / traffic information or flight plan transfer.

Connecting FlyQ to the xVue or AeroVue Touch

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. There is no notification that FlyQ is connected to these devices as they do not send positional or ADS-B data to FlyQ.

Slingshot is disabled by default. It must be enabled for wireless ChartData transfer to work. Enable it from Settings / Allow Slingshot access.

Your iPad/iPhone cannot connect to the Internet via Wi-Fi when it’s connected to the BendixKing network. If your iPad/iPhone has a cellular connection, it can still connect to the Internet from that system.
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

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 tap 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/](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.

Track line width

FlyQ uses a green line to show your track during a flight and when a flight is played. Use this option to choose between Small, Medium, and Large widths.

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 own-ship position on maps and procedures. This switch disables such display.
Show aircraft marker at 1/3 position in track up mode

When enabled, this feature moves the aircraft marker from the center of the map to a position roughly 1/3 up from the bottom of the map to show more of what is in front of you.

Show Personal Waypoint idents

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.

With Ident

No Ident

Show idents 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 idents 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.

**Brightness and Opacity**

The section controls the screen brightness and opacity of the Radar, Procedures, and other weather map layers. It also controls when ADS-B icing is shown.

**ADS-B / Devices**

FlyQ EFB connects to dozens of different ADS-B systems including the Merlin, Stratux, Stratus 3, Dual XGPS 170 and 190, iLevil devices, L-3 Lynx, FreeFlight Systems, and many more. It also connects with many popular in-panel systems including the Dynon SkyView, Avidyne IFD, AFS 5000 series, and the Aspen Connected Panel. See the *External Devices and Applications* section above for details.

It automatically connects to GPS devices that follow Apple’s protocol such as 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 positions 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.
**Turn on Traffic layer when ADS-B connected**

When enabled, FlyQ automatically turns on the traffic layer when connected to an ADS-B receiver or an in-panel system. Turn this off if you don’t want FlyQ to do this. Turning this off is particularly useful when connecting to a Dynon or Avidyne system that is not connected to a compatible ADS-B system.

**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.

**Show tail numbers for ADS-B traffic**

When enabled, FlyQ displays the Flight ID (generally the tail number for GA aircraft or call sign for commercial aircraft) of any traffic for which such information is broadcast. This information is only broadcast for aircraft with either ADS-B Out or a Mode S transponder. For other aircraft, no such data is in the ADS-B data stream so no tail number can be displayed.

**Show stationary traffic**

Toggles between showing only traffic that is moving (off) and also including traffic that does not appear to be moving – typically aircraft and trucks on the ground.

**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.

**Tail number to ignore**

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

**Buddy list**

One of the most common reasons pilots cite for wanting to see tail numbers is to identify their friends when flying together. With our unique Buddy list, FlyQ highlights the tail numbers listed here in blue so they are easier to identify. Add one or more tail numbers separated by commas or a space. Note that even when tail numbers are hidden from the display, those on the Buddy list are still shown.
Ignore ADS-B data transmitted over WiFi

In some unique situations, you may want to have FlyQ EFB ignore ADS-B data packets coming from the WiFi network it’s listening to (for example, you want to force it to use a Bluetooth device). In general, this switch should be set to off except in rare situations.

Levil AHRS / Dynon D2 AHRS

You need to manually enable these devices if you’re using one of them. **You should not do this if you’re using an iLevil ADS-B receiver with integrated AHRS, just when using the original, standalone Levil (not iLevil) AHRS unit.**

Enable Send to Aspen

Turn this on if you have an Aspen Connected Panel system so FlyQ can transfer flight plans between it and the device.
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.

**Leidos (1800WxBrief.com) Information**

A Leidos Username is an optional part of each pilot profile and can be added and changed by tapping **Pilot profiles** then tapping your profile. Be sure to tap **Save** when done editing.

You do not need to add your Leidos Username to file a flight plan or get a legal weather briefing. However, it is required if you’d like to review those briefings and filings on the 1800WxBrief.com web site. You also need to go to [https://www.1800WxBrief.com](https://www.1800WxBrief.com) and use the **Account/Service Provider Authorization** section to enable FlyQ to access your account.

**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.
Defaults (within the Flight Planning category)

Virtually every setting shown in Plans/New can also be set as a default for when you create a flight plan via the Search box at the top of the app. This includes things like Routing method, Optimize for best wind, Min/Max Altitude, Check for recent ATC routes, etc. These are all described in the main Flight Planning section earlier in this guide.

A few other options are available to generally help in planning. These include:

Default departure

You can select between your home airport, the nearest airport, or the most recent departure airport.

Home airport

Specify the ident of your home airport.

Translate Wx briefings

Leidos weather briefings generally translate METARs and TAFs into plain English. You can view raw coded METARs and TAFs if you turn this switch off.

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.

**Also capture raw photo**

Fly’s Augmented Reality (AR) map has a photo shutter button. It always captures an image that includes airport marker overlays. When this switch is on, it also captures a “clean” image without these markers.
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, and then AR). You may disable switching to AR (Augmented Reality) or 3D if you prefer.

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.

Allow Slingshot access

FlyQ can use Wi-Fi to send ChartData to many in-panel display systems such as the BendixKing xVue Touch and AeroVue Touch. This feature is disabled by default so enable it if you have a supported device.
Altitude slider ceiling

The Altitude Slider on the right side of the map can be configured to match the service ceiling of your aircraft. By default, it is set to 24,000 ft (FL240) but you can also set it to 16,000 ft or 48,000 ft.

Show simplified radar colors

FlyQ normally displays radar using a wide range of colors. Enable this feature to use a simplified color scheme that is easier for those with color blindness to see. Note: This only applies to the standard Radar choice in Layers; Radar (Anim) and Radar (Hi-Res) always use the full color spectrum.

Alerts

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 off.

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 shows you the email and password associated with your account. You can also validate your login, retrieve a lost password, or change your email or password. To login as a different user, tap Logout and log back in as the different user.

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 then log in as the new user.
Waypoint Entry

In addition to standard named aviation points (airports, navaids, 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 navaid, airport, or fix by using the airport, navaid, 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 navaid, the first number is a magnetic bearing rather than a radial.

In cases, such as above, where the ident is both a navaid and an airport, the navaid 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 navaids. 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.
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Function/Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start at</td>
<td>A standard aviation named point (airport, navaid, etc.), lat/lon, grid reference, navaid with relative distance and bearing, or navaid/navaid intersection. See the Waypoint Entry appendix for details about how to enter these points.</td>
</tr>
<tr>
<td>Initial DTK (true) / End at</td>
<td>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).</td>
</tr>
<tr>
<td>Turn</td>
<td>Either Right or Left turns</td>
</tr>
<tr>
<td>Leg length (Nm)</td>
<td>The distance of each “long” leg.</td>
</tr>
<tr>
<td>Leg spacing (Nm)</td>
<td>The distance of each turn or “short” leg. This is the width between each long leg.</td>
</tr>
<tr>
<td>Number of legs</td>
<td>The number of “long” legs. Ignored if an aviation point is entered in the Initial DTK (true) / End at field rather than a numeric heading.</td>
</tr>
<tr>
<td>Desired cruise alt (MSL)</td>
<td></td>
</tr>
</tbody>
</table>
Sector

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Function/Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start at</td>
<td>A standard aviation named point (airport, navaid, etc.), lat/lon, grid reference, navaid with relative distance and bearing, or navaid/navaid intersection. See the <em>Waypoint Entry</em> appendix for details about how to enter these points.</td>
</tr>
<tr>
<td>Initial DTK (true) / End at</td>
<td>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.</td>
</tr>
<tr>
<td>Turn</td>
<td>Either <em>Right</em> or <em>Left</em> turns</td>
</tr>
<tr>
<td>Leg length (Nm)</td>
<td>The distance of each “long” leg.</td>
</tr>
<tr>
<td>Desired cruise alt (MSL)</td>
<td></td>
</tr>
</tbody>
</table>
Expanding Square

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Function/Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start at</td>
<td>A standard aviation named point (airport, navaid, etc.), lat/lon, grid reference, navaid with relative distance and bearing, or navaid/navaid intersection. See the Waypoint Entry appendix for details about how to enter these points.</td>
</tr>
<tr>
<td>Initial DTK (true) / End at</td>
<td>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 legs).</td>
</tr>
<tr>
<td><strong>Turn</strong></td>
<td>Either <em>Right</em> or <em>Left</em> turns</td>
</tr>
<tr>
<td>---------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td><strong>Leg spacing (Nm)</strong></td>
<td>The distance of each turn or “short” leg. This is the width between each long leg.</td>
</tr>
<tr>
<td><strong>Number of legs</strong></td>
<td>The number of “long” legs. Ignored if an aviation point is entered in the <em>Initial DTK (true) / End</em> at field rather than a numeric heading.</td>
</tr>
<tr>
<td><strong>Desired cruise alt (MSL)</strong></td>
<td></td>
</tr>
</tbody>
</table>
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
--- | ---
**CAP grid** | 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. *SEA140*, *SEA140C*, etc.).

In this one case, grid suffixes (*NW*, *NE*, *SE*, and, *SW*) are ignored because the pattern has a **Starting corner** parameter that does the same thing.

**Fly grid corners** | 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.

**Starting corner** | Selects which grid corner is the start of the route. *Northwest*, *Northeast*, *Southeast*, or *Southwest*. 

---

---

---

---

---
<table>
<thead>
<tr>
<th>Initial DTK</th>
<th>Choice of <em>North</em>, <em>South</em>, <em>East</em>, or <em>West</em>. Note that the choice of <em>Starting corner</em> limits which Initial DTK selections are valid. <em>Preview</em> displays <em>Invalid</em> if you select an <em>Initial DTK</em> that is incompatible with the <em>Starting corner</em> (in order to stay within the grid).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leg length (Nm)</td>
<td>The distance of each “long” leg.</td>
</tr>
<tr>
<td>Spacing (Nm)</td>
<td>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 <em>Spacing</em>.</td>
</tr>
<tr>
<td>Buffer (Nm)</td>
<td>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.</td>
</tr>
<tr>
<td>Desired cruise alt (MSL)</td>
<td></td>
</tr>
</tbody>
</table>
**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.

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

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

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

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

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

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

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 navais 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.
Troubleshooting

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 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, tap 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 in 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**.